



# ILSHIN

2020 Products Catalogue



일신산업전기(주)  
<http://www.isie.co.kr>

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I L S H I N , E X P L O S I O N P R O O F P R O D U C T S

# 1

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## I L S H I N Industrial Electric

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01\_ ILSHIN Industrial Electric

02\_ Technical Information

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# 빛을 지배한 사람이 결국 지구의 주인이 되었습니다.

공룡의 거대함도, 사자의 날카로운 송곳니도, 독수리의 견고한 날개도 없었지만 사람은 지구의 지배자입니다.

가장 늦게 지구라는 무대에 등장했지만 결국은 주인이 되었습니다.

빛이란 그런 것입니다. 낮과 밤. 잠든 12시간을 깨워 마침내 24시간을 완성하게 하는 것.

어둠을 물아내고 그 공간을 빛으로 채우기 시작했을 때 인류는 비로소 지구의 주인으로 다시 태어났습니다.

일신은 미지의 영역을 개척하는 인류의 도전에 늘 함께합니다.

일신산업전기는 낮과 밤. 그 열두시간의 경계를 허물고, 빛과 어둠의 경계를 허물어

지구를 온전히 내 것으로 만드는데 앞장섭니다.



Best quality!

Technical development!

Certain service!

## HISTORY

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2019	04	IS-EPCS-* Series IECEX 인증 취득
	06	FGHL-F** IECEX DEKRA 인증 취득
2018	08	SK에너지 기자재 공급업체 등록
2017	01	대우건설 기자재 공급업체 등록
	04	일체형 배관자재 인증획득 포스코건설 기자재 공급업체 등록
	11	대우조선해양 기자재 공급업체 등록
2016	01	서부발전 협력업체 등록
	04	GS 칼텍스 협력업체 등록
	12	ISNFL 직관형 LED등기구 IECEX, ATEX 인증 획득
2015	05	케이블실링장치 폴 유니온 케이블 그랜드 11 경기도 광주시 유망중소기업 선정 현대오일뱅크 협력업체 등록
2014	03	KCS 방폭 안전인증서 150종 획득
	08	OHSAS 18001 안전보건경영시스템 인증서 획득
	12	한국가스공사 공급업체 등록(품목: 방폭형 LED등기구)(재등록)
2013	07	삼성전자 LED 방폭등 협력업체 등록 11 품질경영시스템 인증서 갱신 12 광주시 중소기업 대상 수상
2012	03	LED 방폭등기구(9종) 안전인증 취득
	08	실용신안등록(방폭용 절연유니온 제20-0462217호) 실용신안등록(드레인 플러그 제-20-0462043호)
2011	04	LED 등기구 직접생산 확인증명서 취득(중소기업중앙회)
	12	한국가스공사 공급업체 재 등록 (품목: 방폭형 LED등기구)
2010	12	ISO 9001:2008 인증 갱신(KGS)
2009	03	산업기술시험원 방폭성능 검정. LED방폭등기구 외 16종 획득
	10	실용신안등록(히팅코일단부 고정 부자 제20-0446448호)
2008	08	디자인등록(히팅코일분배기 -제30-0503122호) 10 경기도 광주시 유망중소기업 선정.
	10	한국가스공사 공급업체 재 등록(품목:방폭형등기구)
2006	07	한국가스공사 공급업체등록(품목:방폭형등기구)
2005	08	실용신안등록(방폭작업등 -제0393899호)
2004	08	경기도 유망중소기업 선정
2003	03	휴비스(구. 삼양사) 업체등록
2002	05	접지안전시스템 개발완료
2001	09	본사 및 공장 신축이전(경기도 광주) 11 일신산업전기(주) 법인전환
	12	ISO 9001품질시스템 인증서 획득(KGSC)
2000	01	일신산업전기 설립



# 빙산일각\_ 氷山一角 글로벌 리더로의 도약은 결국 기초에 있습니다

숨겨진 90%의 가치에 내일에의 비전이 있습니다.

일신이 추구하는 최고의 가치는 보이지 않는 기초에 있습니다.

빙산이 바다 위에 당당할 수 있는 것은 결국 보이지 않은 90%의 기초가 있기에 가능한 일입니다.

밤을 잊은 기술개발과 원칙에 충실한 품질개선. A/S에 이르기까지

결국은 내일을 선도하는 기업의 초석을 다지기 위한 일신의 노력입니다.

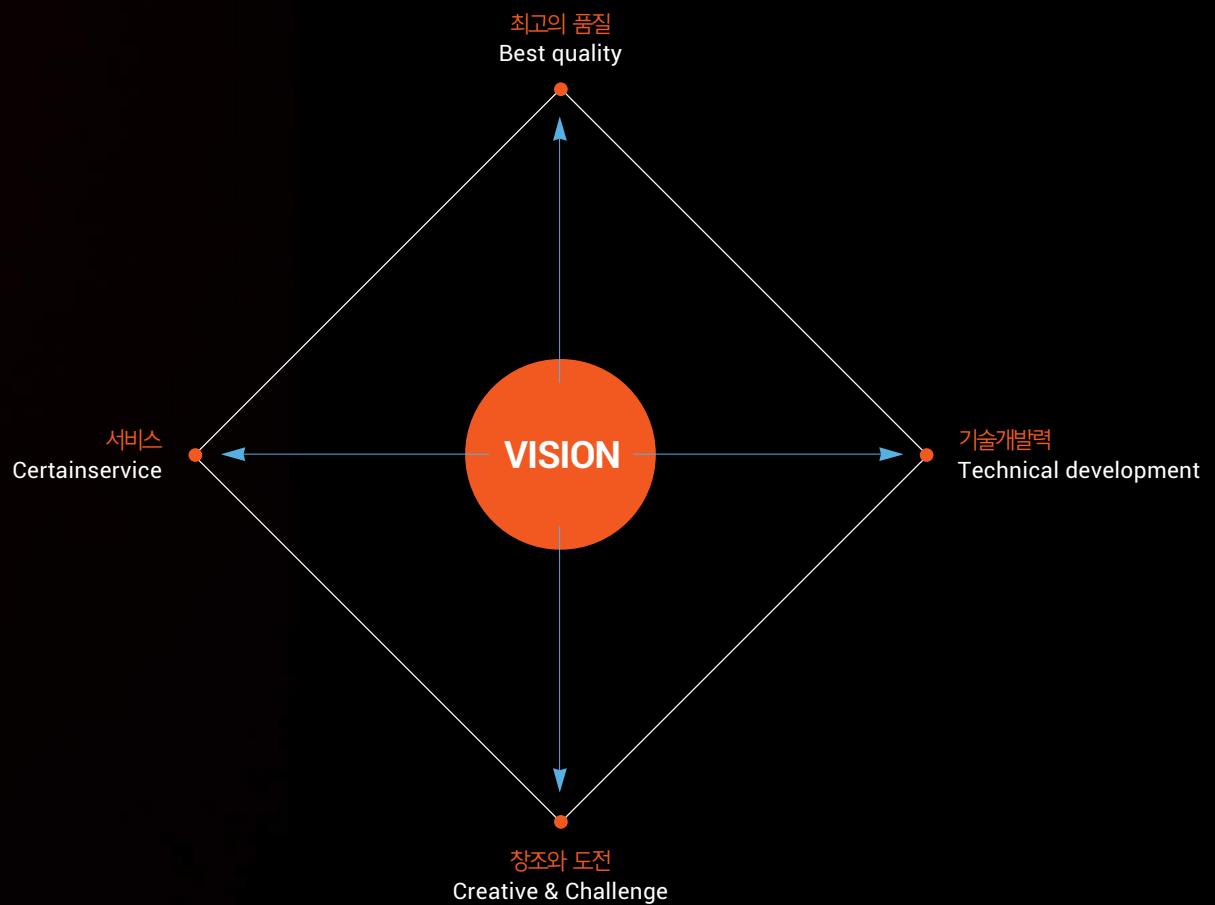
화려하지 않아도 제 자리에서 묵묵히 세상을 밝히는 든든한 베풀목. 일신의 또 다른 이름입니다.

일신산업전기의 미래비전은 끊임없는 연구개발 및 자기관리에 있습니다.

빛이 닿지 않는 곳에 빛을 열어 삶을 더욱 풍요롭게 만드는 일. 일신의 자랑입니다.

# ILSHIN INDUSTRIAL ELECTRIC

Leaping into a Global Leader with It's Advanced Process Technology!



# 삶을 더욱 풍요롭고 알차게 열어갑니다

특수산업분야를 밝히는 한길을 걸어왔습니다.

자연이나 산업의 특성이 만들어 놓은 최악의 조건을 이겨내려 달려온 외길입니다.

연구개발을 위한 노력과 품질향상을 위해 땀방울은 보이지 않는 열정입니다.

제품 하나 하나에 스며든 일신산업전기의 숨결입니다. 빛이란 단순히 밤과 낮을 구별하는 물질이 아닙니다.

사람들의 삶을 더욱 풍요롭게 만들고, 삶의 질을 향상시키는 따듯한 마음입니다.

일신산업전기가 만들어 온 길입니다. 열정을 다해 걸어갈 길이기도 합니다.

마음과 마음을 이어주는 세상의 빛으로 우뚝 서겠습니다.

## PRODUCT CATEGORIES

only adheres  
to the best global products.

LIGHTING  
FIXTURES

CONTROL  
MANUFACTURES

PLASTIC  
MANUFACTURES



CONDUIT  
FITTINGS

FIRE PROTECTION  
EQUIPMENTS

JUNCTION BOXES



# 2

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## Technical Information

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### 01\_ ILSHIN Industrial Electric

#### 02\_ Technical Information

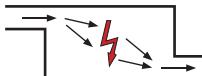
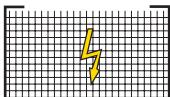
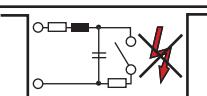
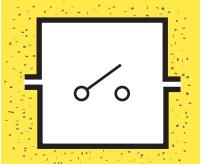
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- 02. Division of Hazardous
- 03. Types of protection and their application
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#### 03\_ Global Leading Products

#### 04\_ Supplement

## 1. Type of Protection

Type of Enclosure	Basic Principle	Schematic	IEC Standard
Flame proof Enclosure 'd'	A type of protection of electrical apparatus in which the enclosure will withstand an internal explosion of a flammable mixture which has penetrated into the interior, without suffering damage and without causing ignition, through any joints or structural openings in the enclosure, of an external explosive atmosphere consisting of one or more the gases of vapours for which it is designed.		IEC 60079-1
Pressurized Enclosure 'p'	A type of protection in which the entry of a surrounding atmosphere into the enclosure of the electrical apparatus is prevented by maintaining inside the said enclosure a protective gas at a higher pressure than that of the surrounding atmosphere		IEC 60079-2
Powder Filling 'q'	A type of protection in which the enclosure of electrical apparatus is filled with a material in a finely granulated state so that, in the intended conditions of service, any arc occurring within the enclosure of an electrical apparatus will not ignite the surrounding atmosphere		IEC 60079-5
Oil Immersion 'o'	A type of protection in which the electrical apparatus or parts of the electrical apparatus are immersed in oil in such a way that an explosive atmosphere, which may be above the oil or outside the enclosure cannot be ignited		IEC 60079-6
Increased Safety 'e'	A type of protection applied to electrical apparatus that does not produce arcs or sparks in normal service, in which additional measures are applied so as to give increased security against the possibility of excessive temperatures and of the occurrence of arcs and sparks		IEC 60079-7
Intrinsic Safety 'i'	A type of protection in which the electrical apparatus contains intrinsically safe circuits, which are incapable of causing an explosion in the surrounding atmosphere		IEC 60079-11
Non-Sparking Structure 'n'	A type of protection where electrical equipment, in normal operation, is not capable of igniting a surrounding explosive gas atmosphere and a fault capable of causing ignition is not likely to occur		IEC 60079-15
Encapsulation 'm'	A type of protection in which the parts which can ignite an explosive atmosphere are enclosed in a resin sufficiently resistant to environmental influences in such a way that this explosive atmosphere cannot be ignited by either sparking or heating, which may occur within the encapsulation		IEC 60079-18
Dust Ignition Protection 'td'	An enclosure that will exclude ignitable amounts of dusts that might affect performance or rating and that, when installed and protected in accordance with the original design intent, will not permit arcs, sparks, or heat otherwise generated or liberated inside the enclosure to cause ignition of exterior accumulations or atmospheric suspensions of a specified dust		IEC 61241-1

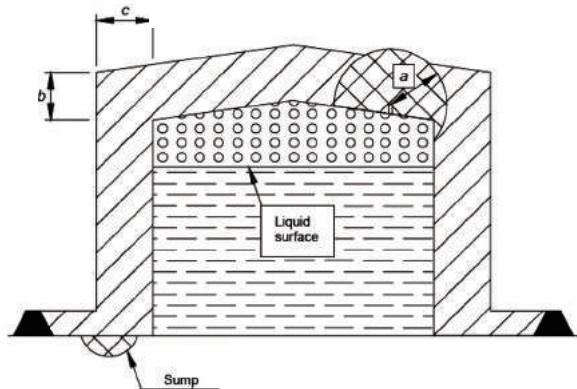
## 2. Division of Hazardous Areas into Zones

The practice has been established of dividing hazardous areas into zones.\*)

This division both takes account of the different dangers presented by potentially explosive atmospheres and enables protective measures to be taken which take account of both the cost and the safety factors.

Zone 0		An area in which an explosive gas atmosphere is present continuously or for long periods.
Zone 1		An area in which an explosive gas atmosphere is likely to occur in normal operation.
Zone 2		An area in which an explosive gas atmosphere is not likely to occur in normal operation and, if it does occur, is likely to do so only infrequently and will exist for a short period only.

### Example



Flammable liquid storage tank, situated outdoors, with fixed roof and no internal floating roof

	Zone 0
	Zone 1
	Zone 2

a = 3m from vent openings

b = 3m above the roof

c = 3m horizontally from the tank

**Zone 20** An area in which a hazardous explosive atmosphere formed by a dust cloud in air is present continuously or for a long period or frequently.  
Dust layers of unknown or excessive thickness may be formed.  
Dust layers on their own do not constitute a zone 20.

**Zone 21** An area in which a hazardous explosive atmosphere formed by a dust cloud in air is likely to occur during normal operation. Layers of combustible dust will in general be present.

**Zone 22** An area in which a hazardous explosive atmosphere formed by a dust cloud in air is likely to occur during normal operation, and if it does occur it will exist for a short period only, or in which accumulations or layers of combustible dust are present.

\* The classification for 202122 is based on the European draft standard dated March 1995 designated prEN 1127-unofficial translation. For dust, there have been many different forms of words in the last few years.  
Hazardous areas where men are at work will be, at the most extreme, Zone 1, Zone 2, Zone 21 or Zone 22.  
Zone 0 and Zone 20 will as a rule apply to the interior of process plant or very small inaccessible areas in the workplace.

### 3. Types of protection and their application

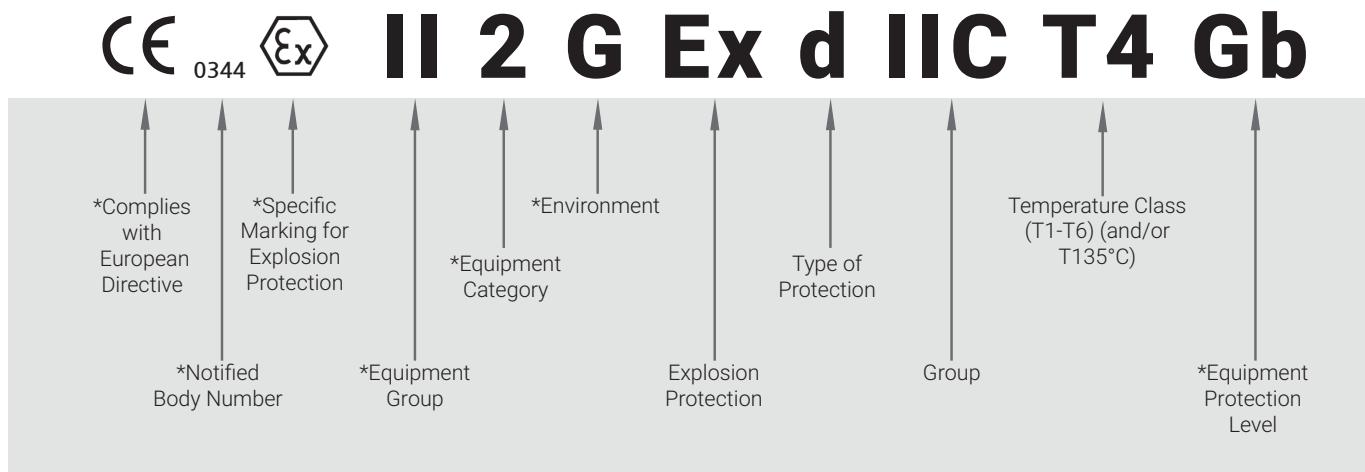
Types of protection for electrical equipment in areas with a danger of gas explosions

Type of protection	Protection principle	EN/IEC	Zone	Application
da d, db dc	Flameproof enclosure Preventing an explosion from spreading	EN 60079-1 IEC 60079-1	0 1 2	Switching, control, and signaling devices, controllers, motors, power electronics
px py pz	Pressurized enclosure Exclusion of an explosive atmosphere	EN 60079-2 IEC 60079-2	1 2	Control cabinets, motors, measuring and analysis devices, computers
q	Sand filling Prevent spark propagation and increased temperatures	EN 60079-5 IEC 60079-5	1 2	Transformers, relays, capacitors
o	Oil immersion Exclusion of an explosive atmosphere	EN 60079-6 IEC 60079-6	1 2	Transformers, relays, startup controls, switching devices
eb ec	Increased safety Prevent spark propagation and increased temperatures	EN 60079-7 IEC 60079-7	1 2	Branch and connection boxes, housing, motors, terminal blocks, electrical devices
ia ib ic	Intrinsic safety Intrinsically safe fieldbus systems (FISCO)	Energy limitation EN 60079-11 IEC 60079-11  EN 60079-25 IEC 60079-25	0 1 2 0 1 2	Measurement and control technology, sensors, actuators, instrumentation
nA	Non-sparking equipment Prevent sparks, comparable with Ex ec	EN 60079-15 IEC 60079-15	2	Electrical equipment for normal industrial applications
nC	Sparking equipment Comparable with Ex d	EN 60079-15 IEC 60079-15	2	Electrical equipment for normal industrial applications
nR	Restricted breathing enclosure Protection provided by enclosure	EN 60079-15 IEC 60079-15	2	Electrical equipment for normal industrial applications
ma mb mc	Molded encapsulation Exclusion of an explosive atmosphere	EN 60079-18 IEC 60079-18	0 1 2	Coils of relays and motors, electronics, solenoid valves, connection systems
op	op is – inherently safe optical radiation op pr – protected optical radiation op sh – optical systems with interlock	Limiting or preventing the transmission of energy from optical radiation EN 60079-28 IEC 60079-28	0 or 1 or 2 1 or 2 0 or 1 or 2	Optoelectronic devices

Types of protection for electrical equipment in areas with combustible dust

Type of protection	Protection principle	EN/IEC	Zone	Application
ta tb tc	Protection provided by enclosure Exclusion of an explosive atmosphere	EN 60079-31 IEC 60079-31	20 21 22	Switching, control, and signaling devices, lamps, branch and connection boxes, housing
pxb pyb pzc	Pressurized enclosure Exclusion of an explosive atmosphere	EN 60079-2 IEC 60079-2	21 21 22	Control cabinets, motors, measuring and analysis devices
ia ib ic	Intrinsic safety Energy limitation	EN 60079-11 IEC 60079-11	20 21 22	Measurement and control technology, sensors, actuators, instrumentation
ma mb mc	Molded encapsulation Exclusion of an explosive atmosphere	EN 60079-18 IEC 60079-18	20 21 22	Coils and relays of motors, electronics, and connection systems

## 4. Typical ATEX and IECEx Marking [\*ATEX only]



## 5. Equipment Group [ATEX and IECEx]

Equipment Group	Equipment Category	EPL	Atmosphere	Protection Level	Required Protection Performance & Operation
ZI (Mines with firedamp)	M1	Ma	Methane & Dust	Very High	• Two Faults, Remain energised and functioning
I (Mines with firedamp)	M2	Mb	Methane & Dust	High	• Severe normal operation, De-energise in exp. atm.
II (all other areas)	1	a	Gas, Vapour, Mist, Dust	Very High	• Two Faults
II (all other areas)	2	b	Gas, Vapour, Mist, Dust	High	• One Fault
II (all other areas)	3	c	Gas, Vapour, Mist, Dust	Low	• Normal operation

## 6. Zoning Definitions

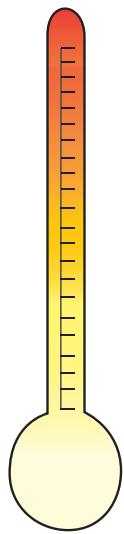
Gas IEC 60079-10-1	Dust IEC 60079-10-2	Definitions
0		A place in which an explosive atmosphere is continually present
	20	
1		A place in which an explosive atmosphere is likely to occur in normal operation occasionally
	21	
2		A place in which an explosive atmosphere is not likely to occur in normal operation, but if it does only occurs for short periods
	22	

## 7. Equipment Categories & Protection Levels

ATEX Category	Equipment Protection Levels	Typical Zone Suitability
1 G	Ga	Equip. suitable for Zones 0,1,2
1 D	Da	Equip. suitable for Zones 20,21,22
2 G	Gb	Equip. suitable for Zones 1,2
2 D	Db	Equip. suitable for Zones 21,22
3 G	Gc	Equip. suitable for Zone 2
3 D	Dc	Equip. suitable for Zone 22

## 8. Temperature Classification

Max. Surface Temperature	NEC® 500 CEC®	NEC® 505	IEC - Group II	
450° C (842°F)	T1	T1	T1	
300° C (572°F)	T2	T2	T2	
280° C (536°F)	T2A			
260° C (500°F)	T2B			
230° C (446°F)	T2C			
215° C (419°F)	T2D			
200° C (392°F)	T3	T3	T3	
180° C (356°F)	T3A			
165° C (329°F)	T3B			
160° C (320°F)	T3C			
135° C (275°F)	T4	T4	T4	
120° C (248°F)	T4A			
100° C (212°F)	T5	T5	T5	
85° C (185°F)	T6	T6	T6	



Note: For Group I (CENELEC/IEC) applications, electrical apparatus has fixed temperature limits i.e., 150° C and 450° C.

## 9. Useful Standards

Topic	IEC Standard
Area Classification - Gases, Vapours and Mists	IEC 60079-10-1
Area Classification - Combustible Dusts	IEC 60079-10-2
Electrical Equipment Installation	IEC 60079-14
Electrical Equipment Inspection and maintenance	IEC 60079-17
Electrical Equipment Repair and Overhaul	IEC 60079-19

## 10. Groups [ATEX and IECEx]

Group	Environment	Location	Typical Substance
I	Gases, Vapours and Coal Dust	Coal Mining	Methane (Fire damp)
IIA	Gases, Vapours and Mists	Surface and other locations	Methane, Propane etc.
IIB			Ethylene
IIC			Hydrogen, Acetylene etc.
IIIA	Combustible Dusts	Surface and other locations	Combustible flyings
IIIB			Non-conductive
IIIC			Conductive

## 11. Typical NEC® Marking

NEC® 500	NEC® 505
<b>Class I, Division 1, Groups A&amp;B T4</b>	<b>Class I, Zone 0, AEx ia IIC T4</b>

## 12. Protection Concepts [North America]

Type of Protection	USA		Canada		Basic Concept of Protection		
	NEC® 500	NEC® 505	Existing	New			
	Area Classification	Code	Area Classification	Code			
Increased Safety Non-Incendive	NA Division 2	Zone 1, 2 Zone 2	AEx e AEx n	NA Division 2	Zone 1, 2 Zone 2	Ex e Ex n	No arcs, sparks, or hot surfaces
Flameproof Explosionproof Powder Filled	NA Division 1,2 NA	Zone 1, 2 NA Zone 1, 2	AEx d NA AEx q	NA Division 1,2 NA	Zone 1, 2 NA Zone 1, 2	Ex d NA Ex q	Contain the explosion, prevent flame propagation
Intrinsic Safety	Division 1,2 NA	Zone 0,1,2 Zone 1, 2	AEx ia AEx ib	Division 1,2 NA	Zone 0,1,2 Zone 1, 2	Ex ia Ex ib	Limit the spark energy and temperatures
Pressurized (Purged) Encapsulation Oil Immersion	Division 1,2 NA Division 2	Zone 1, 2 Zone 1, 2 Zone 1, 2	AEx p AEx m AEx o	Division 1,2 NA Division 2	Zone 1, 2 Zone 1, 2 Zone 1, 2	Ex p Ex m Ex o	Exclude gas from ignition sources

Note: NEC® Article 501.1 permits the use of zone-rated equipment in Class I Division 2 locations.

## 13. Gas Groups [North America]

Substance:	Hazard Class:	NEC 500:	NEC 505:	Lower Exposure Limit:	Upper Exposure Limit:
Any Gas	Class I				
Acetylene		Group A	IIC	2.3 %	100 %
Hydrogen		Group B	IIC	4 %	77 %
Ethylene		Group C	IIB	2.3 %	36 %
Propane		Group D	IIA	1.7 %	11 %
Methane (mining)		Group D		4.4 %	17 %
Combustible Metal Dusts	Class II	Group E			
Combustible Carbonaceous Dusts		Group F			
Combustible Dusts not in Group E or F (Flour, Grain, Wood, Plastics, Chemicals)		Group G			
Combustible Fibres and Flyings	Class III				

## 14. International Protection IEC 60529

First Figure Protection against Solids			Second Figure Protection against Liquids		
IP	Test	Comment	IP	Test	Comment
0		No Protection	0		No Protection
1		Protected against solid bodies greater than 50mm diameter (e.g. accidental contact with the hand)	1		Protected against vertically falling drops of water (condensation)
2		Protected against solid bodies greater than 12.5mm diameter (e.g. finger)	2		Protected against drops of water falling up to 15° from the vertical
3		Protected against solid bodies greater than 2.5mm diameter (e.g. tools, wires)	3		Protected against water sprayed up to 60° from the vertical
4		Protected against solid bodies greater than 1.0mm diameter (e.g. thin tools and fine wire)	4		Protected against splashing water from all directions
5		Protected against dust (no harmful deposit) - Dust Proof	5		Protected against jets of water from all directions
6		Completely protected against dusts - Dust Tight	6		Protected against powerful jets of water from all directions
IEC (International Electrotechnical Commission) Publication 60529: Classification of Degrees of Protection Provided by Enclosures provides a system for specifying the enclosures of equipment on the basis of the degree of protection provided by the enclosure. IEC 60529 does not specify degrees of mechanical damage of equipment, risk of explosions, or conditions such as moisture (produced for example by condensation), corrosive vapours, fungus, or vermin.			7		Protected against the effects of temporary immersion in water
			8		Protected against the continuous effects of immersion in water having regard to specific conditions

## 15. Employer's & End User's Obligations [ATEX & DSEAR]

1. Prevent the formation of explosive atmosphere OR avoid the ignition of explosive atmospheres, and control the effects of explosions.
2. Assess explosion risks:
  - Likelihood of explosive atmospheres occurring and their persistence
  - Likelihood that ignition sources are present
  - Scale of the anticipated effects
3. Coordinate the implementation of all measures concerning workers' health and safety.
4. Area classification
5. Mark explosive atmospheres with signs at point of entry
6. 'Explosion Protection Document' shall demonstrate:
  - Explosion risks have been determined and assessed
  - Adequate measures will be taken to comply with Directive 1999/92/EC
  - Places have been classified into zones
  - Places where minimum requirements in Annex II, Part A will apply
  - Workplace and work equipment are designed, operated and maintained properly

## 16. Useful Standards

Equipment Category Directive 2014/34/EU	Zone of Use	
	Gas, Vapours, & Mist	Dust
Cat 1	Zone 0, 1 & 2	Zone 20, 21 & 22
Cat 2	Zone 1 & 2	Zone 21 & 22
Cat 3	Zone 2	Zone 22

Note: Unless the explosion protection risk assessment states otherwise.

## 17. NEMA Testing Approximate Equivalent to IPXX

NEMA 1	⇒	IP20
NEMA 2	⇒	IP22
NEMA 3	⇒	IP55
NEMA 3R	⇒	IP24
NEMA 3S	⇒	IP55
NEMA 4 & 4X	⇒	IP66
NEMA 5	⇒	IP53
NEMA 6 & 6P	⇒	IP67 & IP68
NEMA 12 & 12K	⇒	IP54
NEMA 13	⇒	IP54

Do not use to convert IP codes to NEMA ratings

## 18. Cable Glands

Cable glands used on explosion protected (Ex) equipment shall maintain the protection concept of the equipment. e.g.

Ex d enclosures shall use Ex d or Ex e cable glands

Ex e enclosures shall use Ex e cable glands

Ex nR enclosures shall use Ex nR cable glands

Ex nA or nC enclosures use Ex e cable glands

Ex tD enclosures shall use Ex tD cable glands

NB: Non-certified cable glands shall not be used on Ex rated equipment. Intrinsically safe installations can use non-certified cable glands



# 3

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## Global Leading Products

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01\_ ILSHIN Industrial Electric

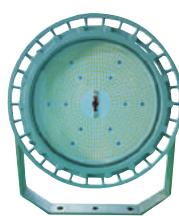
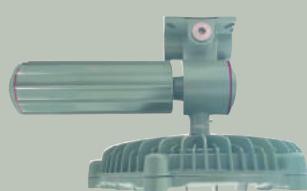
02\_ Technical Information

03\_ Global Leading Products

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04\_ Supplement



# a

## LED LIGHTING FIXTURES

FGHL-0830 Series for Hazardous Location_	24
FGHL-10** Series for Hazardous Location_	25
FGHL-C10** Series for Hazardous Location_	26
IS-LED-F10E** Series for Hazardous Location_	27
IS-LED-F10I** Series for Hazardous Location_	28
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FGHL-F11** Series for Hazardous Location_	31
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EGHL-LED*** Series for Hazardous Location_	36
SGHL-LED*W Series for Hazardous Location_	37
IS-LEDF-N* Series for Hazardous Location_	38
IS-LEDF-D* Series for Hazardous Location_	39
ISAL-C10* Series for Hazardous Location_	40
ISAL-F11* Series for Hazardous Location_	41
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ISTL-* Series for Hazardous Location_	47
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EFDL-LED Series for Hazardous Location_	49
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ISAL-N**W Series for General purpose_	51
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SJT-100SU/150SU Series for General purpose_	55
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TG50/80/150/200/250 _	57



# FGHL-0830

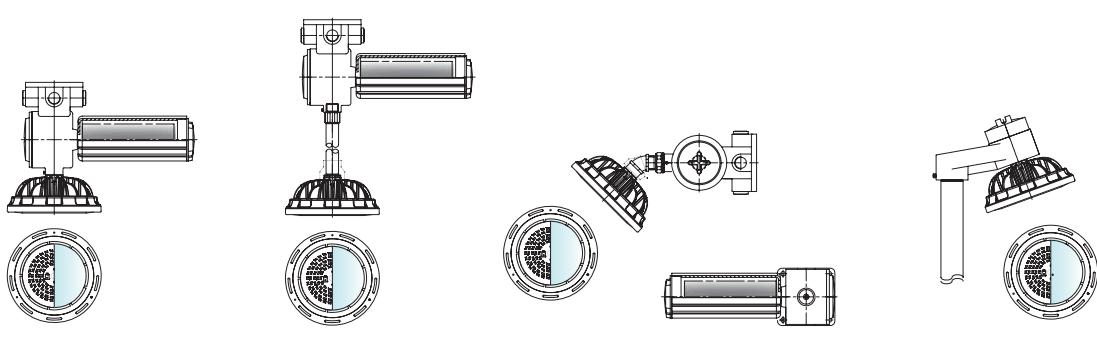
Explosion-proof LED Lighting Fixture  
FGHL-0830 series for Hazardous Location

**Protection Grade**

Ex d II C T6 IP65 for Zone 1·2



**Drawing**



Ceiling Type

Pendant Type

Bracket Type

Stanchion Type

**Standard Material**

- **Main Body** : Die-Cast Aluminium Alloy
- **Holder** : Die-Cast Aluminium Alloy
- **Glass** : Heat Resistant Hard Glass
- **SMPS Housing** : Cast Aluminium Alloy
- **Mounting Box** : Die-Cast Aluminium Alloy
- **Bolt & Washer** : Stainless Steel

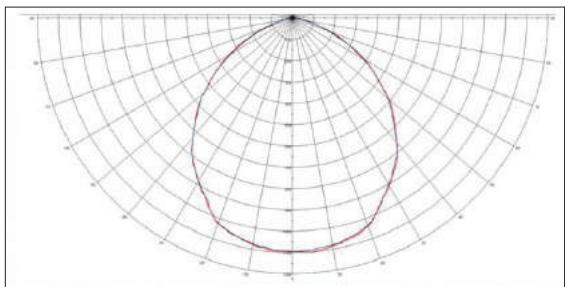
**Standard Color**

- Munsell no. 7.5BG 6/1.5  
If you want other color, contact us please.

**Technical Data**

- **Rated Voltage** : AC 220V Below
- **Rated Wattage** : 30W
- **Rated Frequency** : 50Hz/60Hz
- **Entry Size** : 3/4"(22C), 1"(28C)

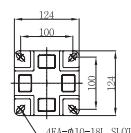
**Light Distribution Curve**



**Weight**

Mounting Typed	Model No.	Weight
Ceiling	FGHL-0830-01	5.8kg
Pendant	FGHL-0830-02	6.5kg
Bracket	FGHL-0830-03	6.3kg
Stanchion	FGHL-0830-04	

**Mounting Box Hole Size**



Appearance	Hole space
124 x 124	100 x 100

**Ordering Number**

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
Stanchion	30W	FGHL-0830-01	FGHL-0830-02	FGHL-0830-03	FGHL-0830-04

# FGHL-10\*\*

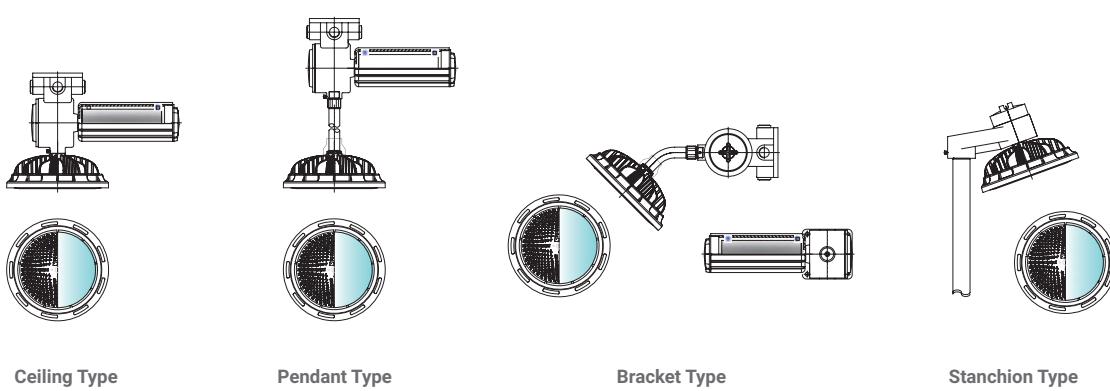
Explosion-proof LED Lighting Fixture  
FGHL-10\*\* series for Hazardous Location  
30W(W/Battery 60 min)

**Protection Grade**

Ex d II C T6 IP65 for Zone 1·2



Drawing



Ceiling Type

Pendant Type

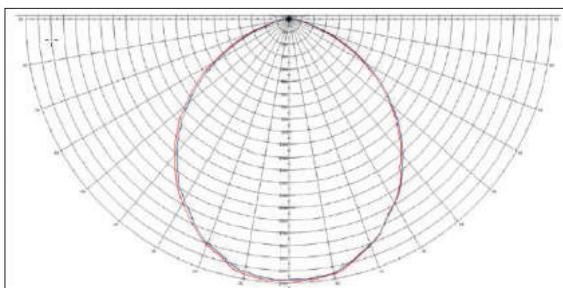
Bracket Type

Stanchion Type

Standard Material

- Main Body** : Die-Cast Aluminium Alloy
- Holder** : Die-Cast Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- SMPS Housing** : Cast Aluminium Alloy
- Mounting Box** : Die-Cast Aluminium Alloy
- Bolt & Washer** : Stainless Steel

Light Distribution Curve



Standard Color

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

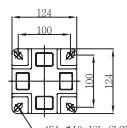
Technical Data

- Rated Voltage** : AC 240V Below
- Rated Wattage** : 30W/55W/80W/30W(W/Battery)
- Rated Frequency** : 50Hz/60Hz
- Entry Size** : 3/4"(22C), 1"(28C)

Weight

Mounting Type	Model No.	Weight
Ceiling	FGHL-10**-01	6.8kg
Pendant	FGHL-10**-02	7.5kg
Bracket	FGHL-10**-03	7.3kg
Stanchion	FGHL-10**-04	

Mounting Box Hole Size



Appearance	Hole space
124 x 124	100 x 100

Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
LED	30W	FGHL-1030-01	FGHL-1030-02	FGHL-1030-03	FGHL-1030-04
LED	55W	FGHL-1055-01	FGHL-1055-02	FGHL-1055-03	FGHL-1055-04
LED	80W	FGHL-1080-01	FGHL-1080-02	FGHL-1080-03	FGHL-1080-04
LED	30W	FGHL-1030-01 Battery	FGHL-1030-02 Battery	FGHL-1030-03 Battery	FGHL-1030-04 Battery

# FGHL-C10\*\*

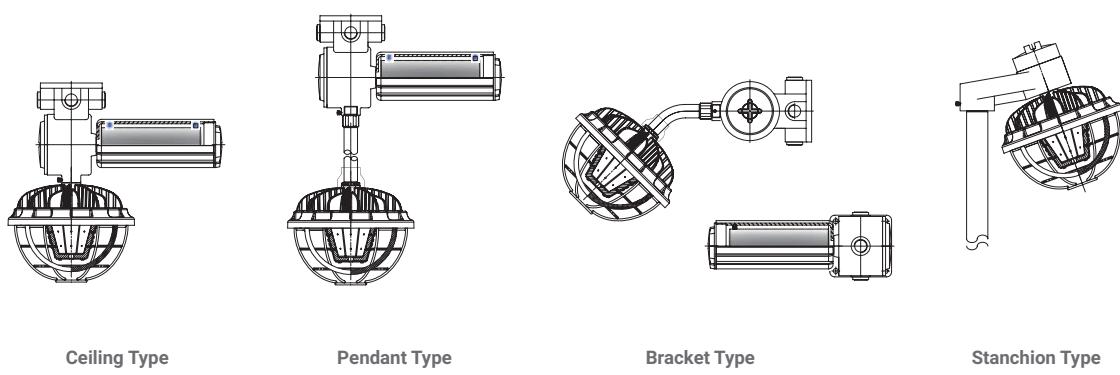
Explosion-proof LED Lighting Fixture  
FGHL-C10\*\*Series for Hazardous Location

**Protection Grade**

Ex d II C T6 IP65 for Zone 1·2



**Drawing**



Ceiling Type

Pendant Type

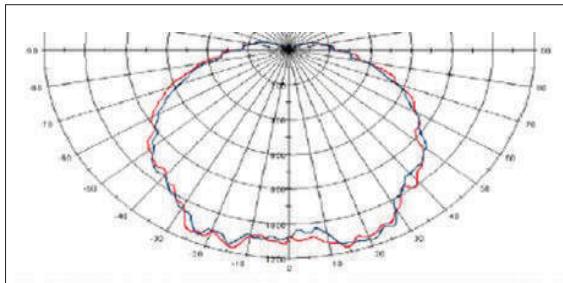
Bracket Type

Stanchion Type

**Standard Material**

- **Main Body** : Die-Cast Aluminium Alloy
- **Holder** : Die-Cast Aluminium Alloy
- **Glass** : Heat Resistant Hard Glass
- **Guard** : Stainless Steel
- **SMPS Housing** : Cast Aluminium Alloy
- **Mounting Box** : Die-Cast Aluminium Alloy
- **Bolt & Washer** : Stainless Steel

**Light Distribution Curve**



**Standard Color**

- Munsell no. 7.5BG 6/1.5  
If you want other color, contact us please.

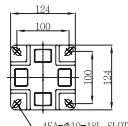
**Technical Data**

- **Rated Voltage** : AC 220V Below
- **Rated Wattage** : 30W/55W/80W
- **Rated Frequency** : 50Hz/60Hz
- **Entry Size** : 3/4"(22C), 1"(28C)

**Weight**

Mounting Typed	Model No.	Weight
Ceiling	FGHL-C10**-01	8.8kg
Pendant	FGHL-C10**-02	9.5kg
Bracket	FGHL-C10**-03	9.3kg
Stanchion	FGHL-C10**-04	

**Mounting Box Hole Size**



Appearance	Hole space
124 x 124	100 x 100

**Ordering Number**

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
LED	30W	FGHL-C1030-01	FGHL-C1030-02	FGHL-C1030-03	FGHL-C1030-04
LED	55W	FGHL-C1055-01	FGHL-C1055-02	FGHL-C1055-03	FGHL-C1055-04
LED	80W	FGHL-C1080-01	FGHL-C1080-02	FGHL-C1080-03	FGHL-C1080-04

# IS-LED-F10E\*\*

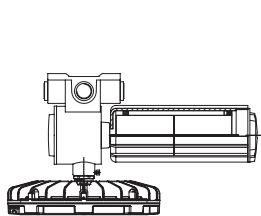
Explosion-proof LED Lighting Fixture  
IS-LED-F10E\*\* series for Hazardous Location

## Protection Grade

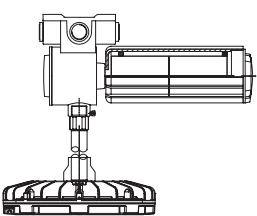
Ex d IIC T6 IP66 for Zone 1·2  
Ex tD A21 T80°C IP66 Zone 21·22



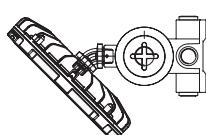
## Drawing



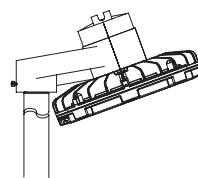
Ceiling Type



Pendant Type



Bracket Type

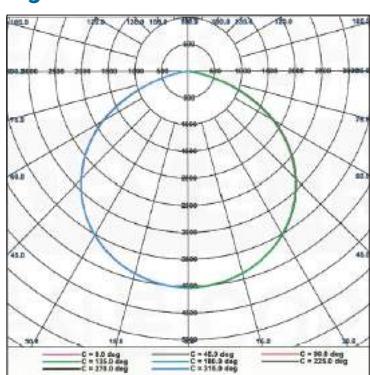


Stanchion Type

## Standard Material

- Main Body :** Die-Cast Aluminium Alloy
- Holder :** Die-Cast Aluminium Alloy
- Glass :** Heat Resistant Hard Glass
- SMPS Housing :** Cast Aluminium Alloy
- Mounting Box :** Die-Cast Aluminium Alloy
- Bolt & Washer :** Stainless Steel

## Light Distribution Curve



## Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
LED	30W	IS-LED-F10E30-C	IS-LED-F10E30-P	IS-LED-F10E30-B	IS-LED-F10E30-G,S
LED	55W	IS-LED-F10E55-C	IS-LED-F10E55-P	IS-LED-F10E55-B	IS-LED-F10E55-G,S
LED	80W	IS-LED-F10E80-C	IS-LED-F10E80-P	IS-LED-F10E80-B	IS-LED-F10E80-G,S
LED	100W	IS-LED-F10E100-C	IS-LED-F10E100-P	IS-LED-F10E100-B	IS-LED-F10E100-G,S

## Standard Color

- Munsell no. 7.5BG 6/1.5  
If you want other color, contact us please.

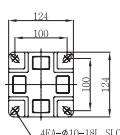
## Technical Data

- Rated Voltage :** AC 100~240V Below
- Rated Wattage :** 30W/55W/80W/100W
- Rated Frequency :** 50Hz/60Hz
- Entry Size :** 3/4"(22C), 1"(28C)

## Weight

Mounting Typed	Model No.	Weight
Ceiling	IS-LED-F10E**-C	6.4kg
Pendant	IS-LED-F10E**-P	7.2kg
Bracket	IS-LED-F10E**-B	7.0kg
Stanchion	IS-LED-F10E**-G,S	

## Mounting Box Hole Size



Appearance	Hole space
124 x 124	100 x 100

# IS-LED-F10I\*\*

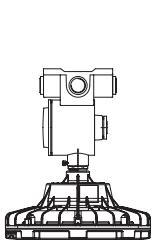
Explosion-proof LED Lighting Fixture  
IS-LED-F10I\*\* series for Hazardous Location

## Protection Grade

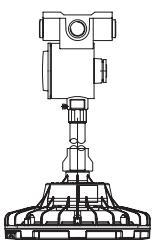
Ex d IIIC T6 IP66 for Zone 1·2  
Ex tD A21 T80°C IP66 Zone 21·22



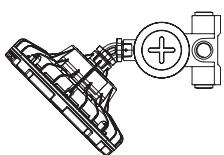
## Drawing



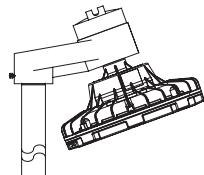
Ceiling Type



Pendant Type



Bracket Type

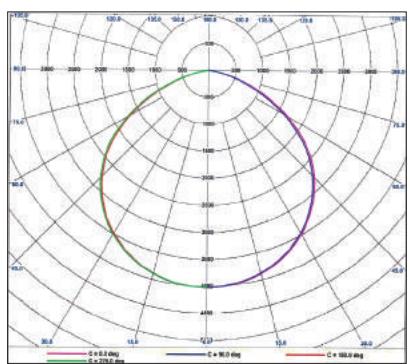


Stanchion Type

## Standard Material

- Main Body** : Die-Cast Aluminium Alloy
- Holder** : Die-Cast Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- SMPS Housing** : Cast Aluminium Alloy
- Mounting Box** : Die-Cast Aluminium Alloy
- Bolt & Washer** : Stainless Steel

## Light Distribution Curve



## Standard Color

- Munsell no. 7.5BG 6/1.5  
If you want other color, contact us please.

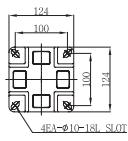
## Technical Data

- Rated Voltage** : AC 100~240V Below
- Rated Wattage** : 30W/55W/80W/100W
- Rated Frequency** : 50Hz/60Hz
- Entry Size** : 3/4"(22C), 1"(28C)

## Weight

Mounting Typed	Model No.	Weight
Ceiling	IS-LED-F10I**-C	6.0kg
Pendant	IS-LED-F10I**-P	6.8kg
Bracket	IS-LED-F10I**-B	6.6kg
Stanchion	IS-LED-F10I**-G,S	

## Mounting Box Hole Size



Appearance	Hole space
124 x 124	100 x 100

## Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
LED	30W	IS-LED-F10I 30-C	IS-LED-F10I 30-P	IS-LED-F10I 30-B	IS-LED-F10I 30-G,S
LED	55W	IS-LED-F10I 55-C	IS-LED-F10I 55-P	IS-LED-F10I 55-B	IS-LED-F10I 55-G,S
LED	80W	IS-LED-F10I 80-C	IS-LED-F10I 80-P	IS-LED-F10I 80-B	IS-LED-F10I 80-G,S
LED	100W	IS-LED-F10I 100-C	IS-LED-F10I 100-P	IS-LED-F10I 100-B	IS-LED-F10I 100-G,S

# IS-LED-C10E\*\*

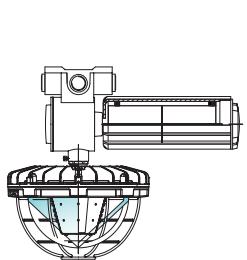
Explosion-proof LED Lighting Fixture  
IS-LED-C10E\*\* series for Hazardous Location

## Protection Grade

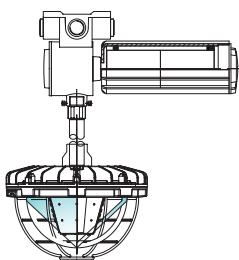
Ex d IIC T6 IP66 for Zone 1·2  
Ex tD A21 T80°C IP66 Zone 21·22



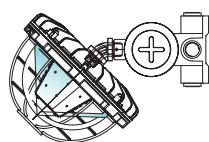
## Drawing



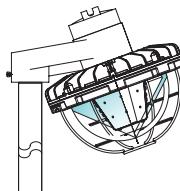
Ceiling Type



Pendant Type



Bracket Type

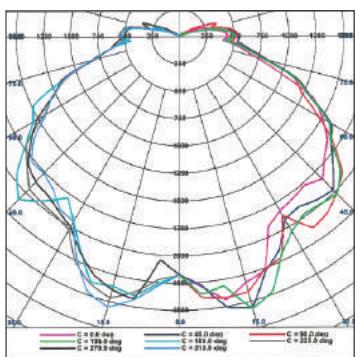


Stanchion Type

## Standard Material

- Main Body** : Die-Cast Aluminium Alloy
- Holder** : Die-Cast Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- SMPS Housing** : Cast Aluminium Alloy
- Mounting Box** : Die-Cast Aluminium Alloy
- Bolt & Washer** : Stainless Steel

## Light Distribution Curve



## Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
LED	30W	IS-LED-C10E30-C	IS-LED-C10E30-P	IS-LED-C10E30-B	IS-LED-C10E30-G,S
LED	55W	IS-LED-C10E55-C	IS-LED-C10E55-P	IS-LED-C10E55-B	IS-LED-C10E55-G,S
LED	80W	IS-LED-C10E80-C	IS-LED-C10E80-P	IS-LED-C10E80-B	IS-LED-C10E80-G,S
LED	100W	IS-LED-C10E100-C	IS-LED-C10E100-P	IS-LED-C10E100-B	IS-LED-C10E100-G,S

## Standard Color

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

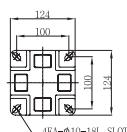
## Technical Data

- Rated Voltage** : AC 100~240V Below
- Rated Wattage** : 30W/55W/80W/100W
- Rated Frequency** : 50Hz/60Hz
- Entry Size** : 3/4"(22C), 1"(28C)

## Weight

Mounting Typed	Model No.	Weight
Ceiling	IS-LED-C10E**-C	8.2kg
Pendant	IS-LED-C10E**-P	8.9kg
Bracket	IS-LED-C10E**-B	9.1kg
Stanchion	IS-LED-C10E**-G,S	

## Mounting Box Hole Size



Appearance	Hole space
124 x 124	100 x 100

# IS-LED-C10I\*\*

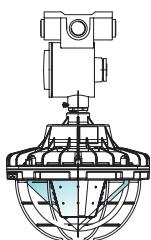
## Explosion-proof LED Lighting Fixture IS-LED-C10I\*\* series for Hazardous Location

### Protection Grade

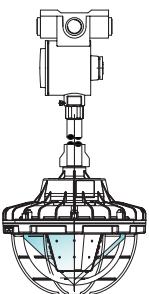
Ex d IIC T6 IP66 for Zone 1·2  
Ex tD A21 T80°C IP66 Zone 21·22



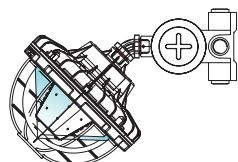
### Drawing



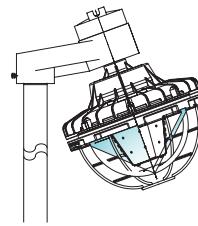
Ceiling Type



Pendant Type



Bracket Type

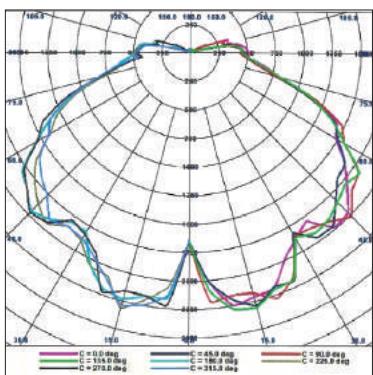


Stanchion Type

### Standard Material

- Main Body :** Die-Cast Aluminium Alloy
- Holder :** Die-Cast Aluminium Alloy
- Glass :** Heat Resistant Hard Glass
- SMPS Housing :** Cast Aluminium Alloy
- Mounting Box :** Die-Cast Aluminium Alloy
- Bolt & Washer :** Stainless Steel

### Light Distribution Curve



### Standard Color

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

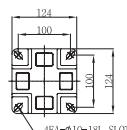
### Technical Data

- Rated Voltage :** AC 100~240V Below
- Rated Wattage :** 30W/55W/80W/100W
- Rated Frequency :** 50Hz/60Hz
- Entry Size :** 3/4"(22C), 1"(28C)

### Weight

Mounting Type	Model No.	Weight
Ceiling	IS-LED-C10I**-C	7.8kg
Pendant	IS-LED-C10I**-P	9.5kg
Bracket	IS-LED-C10I**-B	9.2kg
Stanchion	IS-LED-C10I**-G,S	

### Mounting Box Hole Size



Appearance	Hole space
124 x 124	100 x 100

### Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
LED	30W	IS-LED-C10I 30-C	IS-LED-C10I 30-P	IS-LED-C10I 30-B	IS-LED-C10I 30-G,S
LED	55W	IS-LED-C10I 55-C	IS-LED-C10I 55-P	IS-LED-C10I 55-B	IS-LED-C10I 55-G,S
LED	80W	IS-LED-C10I 80-C	IS-LED-C10I 80-P	IS-LED-C10I 80-B	IS-LED-C10I 80-G,S
LED	100W	IS-LED-C10I 100-C	IS-LED-C10I 100-P	IS-LED-C10I 100-B	IS-LED-C10I 100-G,S

# FGHL-F11\*\*

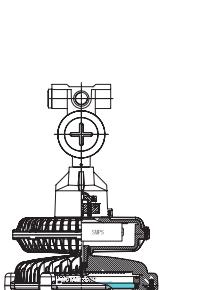
Explosion-proof LED Lighting Fixture  
FGHL-F11 series for Hazardous Location

**Protection Grade**

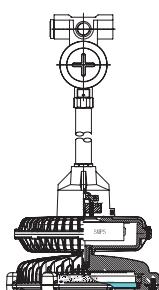
Ex d II C T6 IP66 Zone 1·2



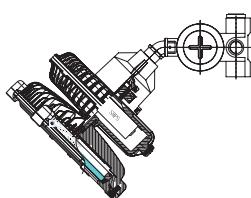
**Drawing**



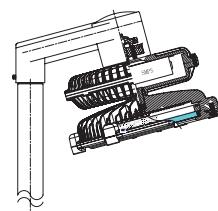
Ceiling Type



Pendant Type



Bracket Type



Stanchion Type

**Standard Material**

- Main Body** : Die-Cast Aluminium Alloy
- Holder** : Die-Cast Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- SMPS Housing** : Cast Aluminium Alloy
- Mounting Box** : Die-Cast Aluminium Alloy
- Bolt & Washer** : Stainless Steel

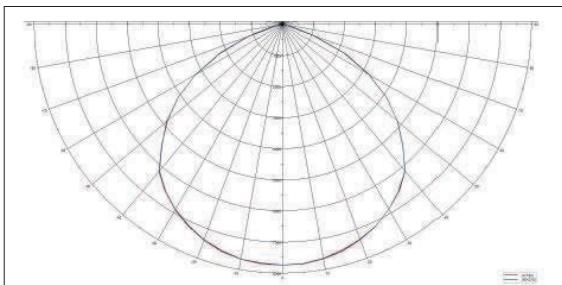
**Standard Color**

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

**Technical Data**

- Rated Voltage** : AC 100~240V Below
- Rated Wattage** : 30W/55W/80W
- Rated Frequency** : 50Hz/60Hz
- Entry Size** : 3/4"(22C), 1"(28C)

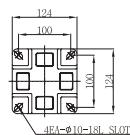
**Light Distribution Curve**



**Weight**

Mounting Typed	Model No.	Weight
Ceiling	FGHL-F11**-01	12.3kg
Pendant	FGHL-F11**-02	13kg
Bracket	FGHL-F11**-03	12.8kg
Stanchion	FGHL-F11**-04	

**Mounting Box Hole Size**



Appearance	Hole space
124 x 124	100 x 100

**Ordering Number**

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
LED	30W	FGHL-F1130-01	FGHL-F1130-02	FGHL-F1130-03	FGHL-F1130-04
LED	55W	FGHL-F1155-01	FGHL-F1155-02	FGHL-F1155-03	FGHL-F1155-04
LED	80W	FGHL-F1180-01	FGHL-F1180-02	FGHL-F1180-03	FGHL-F1180-04

# FGHL-F13\*\*

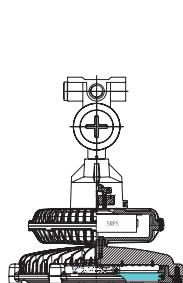
Explosion-proof LED Lighting Fixture  
FGHL-F13\*\* series for Hazardous Location

## Protection Grade

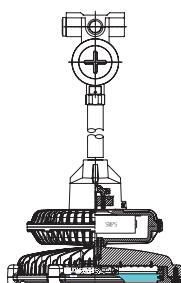
Ex d II C T6 IP66 Zone 1·2



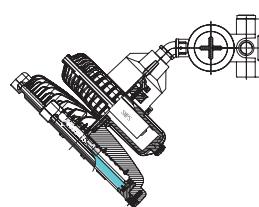
## Drawing



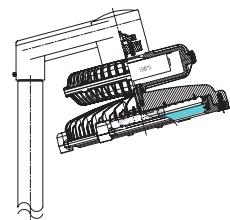
Ceiling Type



Pendant Type



Bracket Type



Stanchion Type

## Standard Material

- Main Body** : Die-Cast Aluminium Alloy
- Holder** : Die-Cast Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- SMPS Housing** : Die-Cast Aluminium Alloy
- Mounting Box** : Die-Cast Aluminium Alloy
- Bolt & Washer** : Stainless Steel

## Standard Color

- Munsell no. 7.5BG 6/1.5  
If you want other color, contact us please.

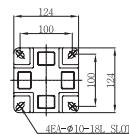
## Technical Data

- Rated Voltage** : AC 100~240V Below
- Rated Wattage** : 100W/120W/150W/200W
- Rated Frequency** : 50Hz/60Hz
- Entry Size** : 3/4"(22C), 1"(28C)

## Weight

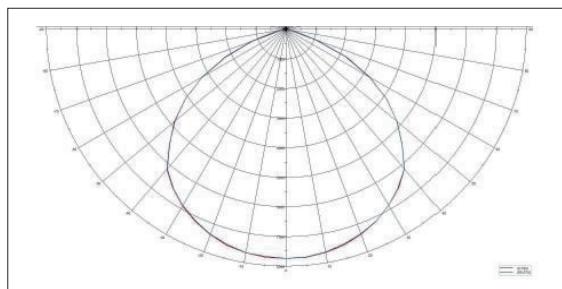
Mounting Typed	Model No.	Weight
Ceiling	FGHL-F13**-01	14.3kg
Pendant	FGHL-F13**-02	15kg
Bracket	FGHL-F13**-03	14.5kg
Stanchion	FGHL-F13**-04	

## Mounting Box Hole Size



Appearance	Hole space
124 x 124	100 x 100

## Light Distribution Curve



## Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
LED	100W	FGHL-F1310-01	FGHL-F1310-02	FGHL-F1310-03	FGHL-F1310-04
LED	120W	FGHL-F1312-01	FGHL-F1312-02	FGHL-F1312-03	FGHL-F1312-04
LED	150W	FGHL-F1315-01	FGHL-F1315-02	FGHL-F1315-03	FGHL-F1315-04
LED	200W	FGHL-F1320-01	FGHL-F1320-02	FGHL-F1320-03	FGHL-F1320-04

# FGHL-F11ab

Explosion-proof LED Lighting Fixture  
FGHL-F11 series for Hazardous Location

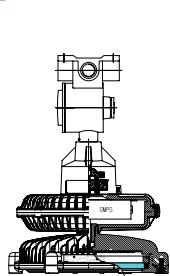
## Protection Grade

IECEx : Ex db II C T6 Gb, Ex tb III C T77°C Db IP66

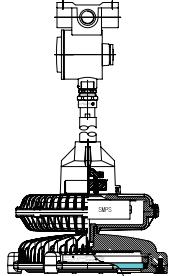
ATEX : Ex II 2 G Ex db II C T6 Gb, Ex II 2 D Ex tb III C T77°C Db IP66



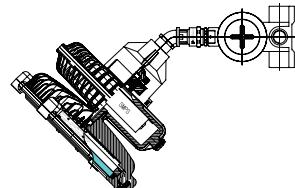
## Drawing



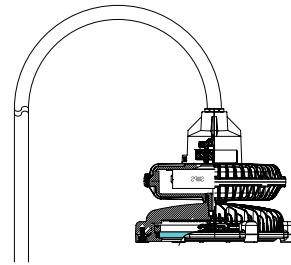
Ceiling Type



Pendant Type



Wall Mount Type



Pole Type

## Standard Material

- Main Body** : Die-Cast Aluminium Alloy
- Holder** : Die-Cast Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- SMPS Housing** : Die-Cast Aluminium Alloy
- Mounting Box** : Die-Cast Aluminium Alloy
- Bolt & Washer** : Stainless Steel

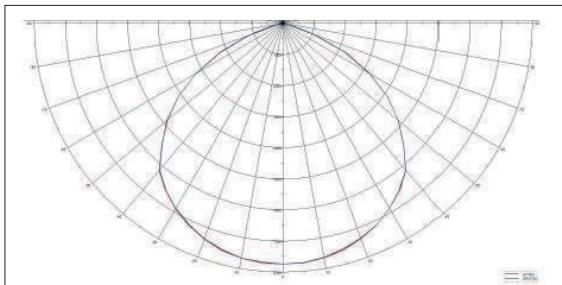
## Standard Color

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

## Technical Data

- Rated Voltage** : AC 100~240V Below
- Rated Wattage** : 30W/55W/80W
- Rated Frequency** : 50Hz/60Hz
- Entry Size** : 3/4"(22C), 1"(28C)

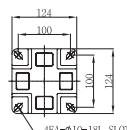
## Light Distribution Curve



## Weight

Mounting Type	Model No.	Weight
Ceiling	FGHL-F11-C	12.3kg
Pendant	FGHL-F11-P	13kg
Wall	FGHL-F11-W	12.8kg
Pole	FGHL-F11-OP	

## Mounting Box Hole Size



Appearance	Hole space
124 × 124	100 × 100

## Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Wall Mount Type	Pole Type
LED	30W	FGHL-F1130-C	FGHL-F1130-P	FGHL-F1130-W	FGHL-F1130-OP
LED	55W	FGHL-F1155-C	FGHL-F1155-P	FGHL-F1155-W	FGHL-F1155-OP
LED	80W	FGHL-F1180-C	FGHL-F1180-P	FGHL-F1180-W	FGHL-F1180-OP

# FGHL-F13ab

Explosion-proof LED Lighting Fixture  
FGHL-F13\*\* series for Hazardous Location

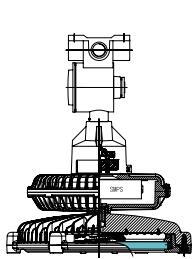
## Protection Grade

IECEx : Ex db II C T5 Gb, Ex tb III C T83°C / T95°C Db IP66

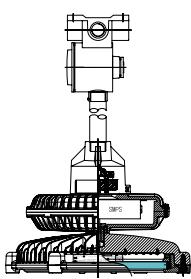
ATEX : Ex II 2 G Ex db II C T6 / T5 Gb / Ex II 2 D Ex tb III C T83°C / T95°C Db IP66



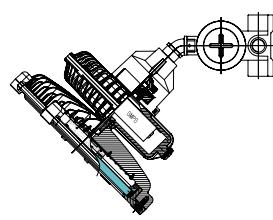
## Drawing



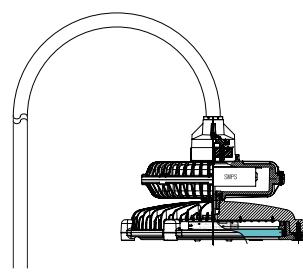
Ceiling Type



Pendant Type



Wall Mount Type



Pole Type

## Standard Material

- Main Body** : Die-Cast Aluminium Alloy
- Holder** : Die-Cast Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- SMPS Housing** : Die-Cast Aluminium Alloy
- Mounting Box** : Die-Cast Aluminium Alloy
- Bolt & Washer** : Stainless Steel

## Standard Color

- Munsell no. 7.5BG 6/1.5  
If you want other color, contact us please.

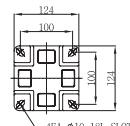
## Technical Data

- Rated Voltage** : AC 100~240V Below
- Rated Wattage** : 100W/150W/200W
- Rated Frequency** : 50Hz/60Hz
- Entry Size** : 3/4"(22C), 1"(28C)

## Weight

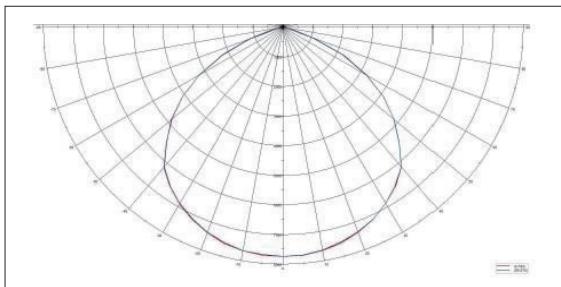
Mounting Typed	Model No.	Weight
Ceiling	FGHL-F13**-C	14.3kg
Pendant	FGHL-F13**-P	15kg
Wall	FGHL-F13**-W	14.5kg
Pole	FGHL-F13**-OP	

## Mounting Box Hole Size



Appearance	Hole space
	124 x 124

## Light Distribution Curve



## Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Wall Mount Type	Pole Type
LED	100W	FGHL-F1310-C	FGHL-F1310-P	FGHL-F1310-W	FGHL-F1310-OP
LED	150W	FGHL-F1315-C	FGHL-F1315-P	FGHL-F1315-W	FGHL-F1315-OP
LED	200W	FGHL-F1320-C	FGHL-F1320-P	FGHL-F1320-W	FGHL-F1320-OP

# FGHL-F14\*\*

Explosion-proof LED Lighting Fixture  
FGHL-F14\*\* series for Hazardous Location

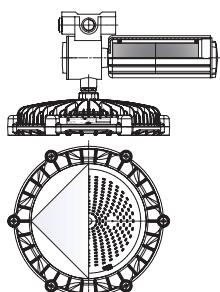
## Protection Grade

Ex d II B+H2 T6 IP66 for Zone 1·2

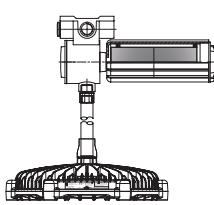
Ex tD A21 IP66 T85°C Zone 21·22



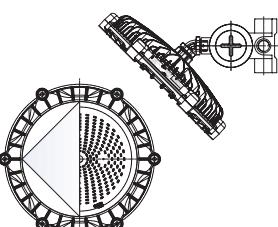
## Drawing



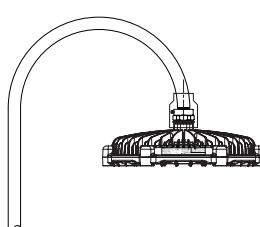
Ceiling Type



Pendant Type



Bracket Type



Stanchion Type

## Standard Material

- Main Body** : Die-Cast Aluminium Alloy
- Holder** : Die-Cast Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- SMPS Housing** : Cast Aluminium Alloy
- Mounting Box** : Die-Cast Aluminium Alloy
- Bolt & Washer** : Stainless Steel

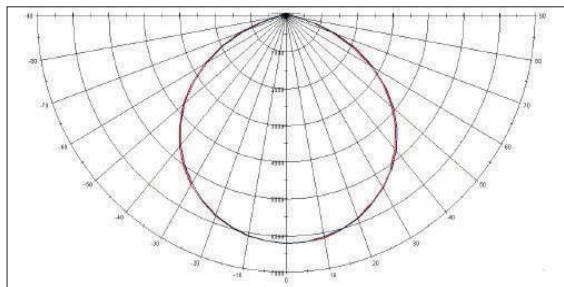
## Standard Color

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

## Technical Data

- Rated Voltage** : AC 100~240V Below
- Rated Wattage** : 100W/120W/150W
- Rated Frequency** : 50Hz/60Hz
- Entry Size** : 3/4"(22C), 1"(28C)

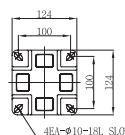
## Light Distribution Curve



## Weight

Mounting Typed	Model No.	Weight
Ceiling	FGHL-F14**-01	13kg
Pendant	FGHL-F14**-02	13.5kg
Bracket	FGHL-F14**-03	13.2kg
Stanchion	FGHL-F14**-04	

## Mounting Box Hole Size



Appearance	Hole space
124 x 124	100 x 100

## Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
LED	100W	FGHL-F1410-01	FGHL-F1410-02	FGHL-F1410-03	FGHL-F1410-04
LED	120W	FGHL-F1412-01	FGHL-F1412-02	FGHL-F1412-03	FGHL-F1412-04
LED	150W	FGHL-F1415-01	FGHL-F1415-02	FGHL-F1415-03	FGHL-F1415-04
LED	200W	FGHL-F1420-01	FGHL-F1420-02	FGHL-F1420-03	FGHL-F1420-04

# EGHL-LED\*\*

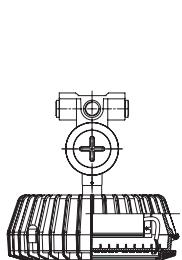
Explosion-proof LED Lighting Fixture  
EGHL-LED\*\*\*W series for Hazardous Location  
30W(W/Battery 60 min)

## Protection Grade

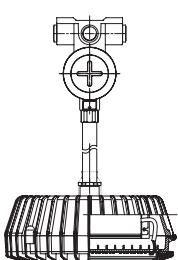
Ex nR II T6 IP66 for Zone 2  
Ex tD A21 IP66 T85°C Zone 21·22



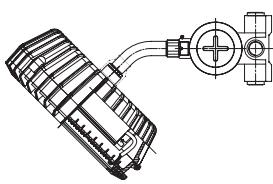
## Drawing



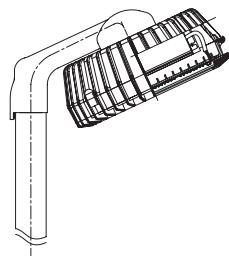
Ceiling Type



Pendant Type



Bracket Type



Stanchion Type

## Standard Material

- Main Body** : Die-Cast Aluminium Alloy
- Holder** : Die-Cast Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- Mounting Box** : Die-Cast Aluminium Alloy
- Bolt & Washer** : Stainless Steel

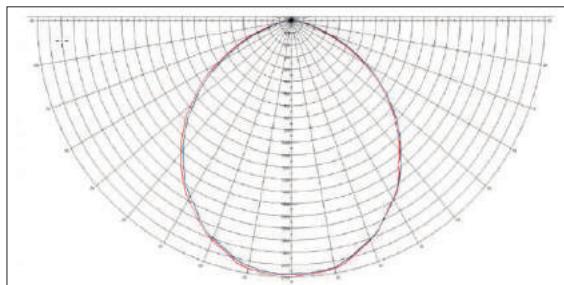
## Standard Color

- Munsell no. 7.5BG 6/1.5  
If you want other color, contact us please.

## Technical Data

- Rated Voltage** : AC 100~240V Below
- Rated Wattage** : 30W/55W/80W/100W/ 30W (W/Battery 60min)
- Rated Frequency** : 50Hz/60Hz
- Entry Size** : 3/4"(22C), 1"(28C)

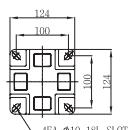
## Light Distribution Curve



## Weight

Mounting Type	Model No.	Weight
Ceiling	EGHL-LED***W-01	6.8kg
Pendant	EGHL-LED***W-02	7.5kg
Bracket	EGHL-LED***W-03	7.3kg
Stanchion	EGHL-LED***W-04	

## Mounting Box Hole Size



Appearance	Hole space
124 × 124	100 × 100

## Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
LED	55W	EGHL-LED55W-01	EGHL-LED55W-02	EGHL-LED55W-03	EGHL-LED55W-04
LED	80W	EGHL-LED80W-01	EGHL-LED80W-02	EGHL-LED80W-03	EGHL-LED80W-04
LED	100W	EGHL-LED100W-01	EGHL-LED100W-02	EGHL-LED100W-03	EGHL-LED100W-04
LED	30W	EGHL-LED30W-01 Battery	EGHL-LED30W-02 Battery	EGHL-LED30W-03 Battery	EGHL-LED30W-04 Battery

# SGHL-LED\*W

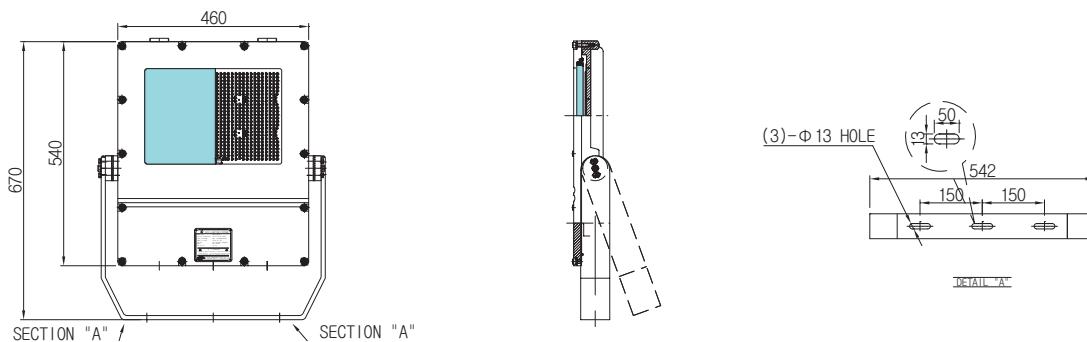
Explosion-proof LED Lighting Fixture  
SGHL-LED series for Hazardous Location

## Protection Grade

Ex d IIIB T6 IP66 for Zone 1,2



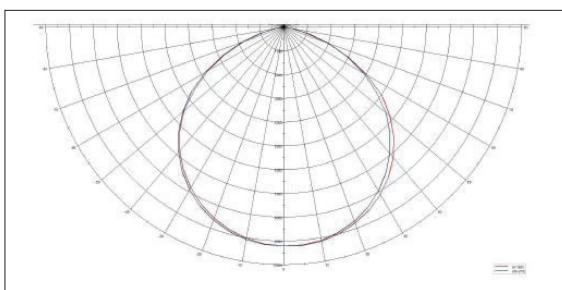
## Drawing



## Standard Material

- Main Body** : Aluminium Alloy
- Holder** : Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- Bolt & Washer** : Stainless Steel
- Support** : Stainless Steel

## Light Distribution Curve



## Standard Color

- Munsell no. Dark gray  
If you want other color, contact us please.

## Technical Data

- Rated Voltage** : AC 100~240V Below
- Rated Wattage** : 120W/150W/180W/200W/250W
- Rated Frequency** : 50Hz/60Hz
- Entry Size** : 1/2"(16C), 3/4"(22C), 1"(28C)
- Demension** : 460(W) x 540(H)

## Ordering Number

Lamp	Watt	Catalogue No.	Weight
LED	120W	SGHL-LED120W	32 kg
LED	150W	SGHL-LED150W	32 kg
LED	180W	SGHL-LED180W	32 kg
LED	200W	SGHL-LED200W	32 kg
LED	250W	SGHL-LED250W	32 kg

# IS-LEDF-N\*

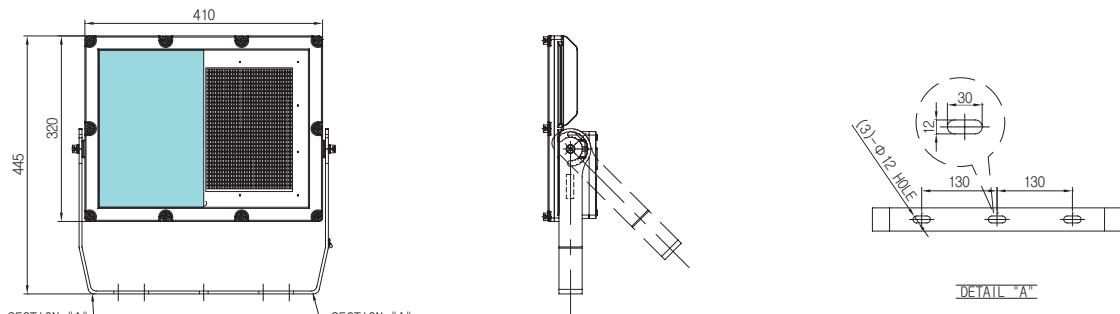
## Explosion-proof LED Lighting Fixture IS-LEDF-N\* series for Hazardous Location

### Protection Grade

Ex nR IIC T6 IP66,  
Ex tD A21 IP66 T85°C Zone 2



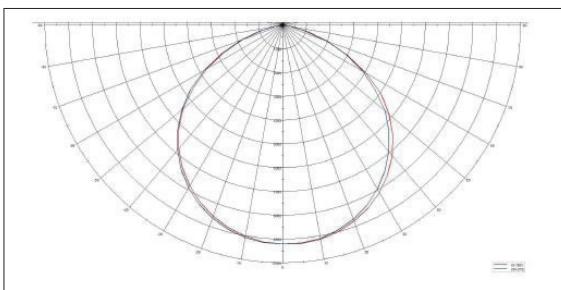
### Drawing



### Standard Material

- Main Body** : Aluminium Alloy
- Holder** : Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- Bolt & Washer** : Stainless Steel
- Support** : Stainless Steel

### Light Distribution Curve



### Standard Color

- Munsell no. Dark gray  
If you want other color, contact us please.

### Technical Data

- Rated Voltage** : AC 100~240V, DC 48V
- Rated Wattage** : 120W/150W/180W/200W/250W
- Rated Frequency** : 50Hz/60Hz
- Entry Size** : 3/4"(22C) × 2
- Demension** : 410(W) × 320(H)

### Ordering Number

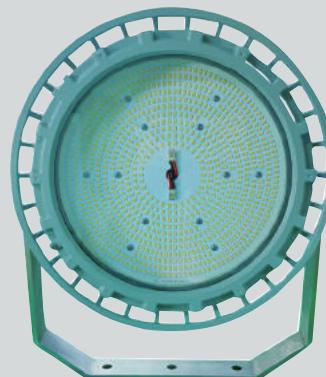
Lamp	Watt	Catalogue No.	Weight
LED	120W	IS-LEDF-N120W	11.3 kg
LED	150W	IS-LEDF-N150W	11.3 kg
LED	180W	IS-LEDF-N180W	11.3 kg
LED	200W	IS-LEDF-N200W	11.3 kg

# IS-LEDF-D\*

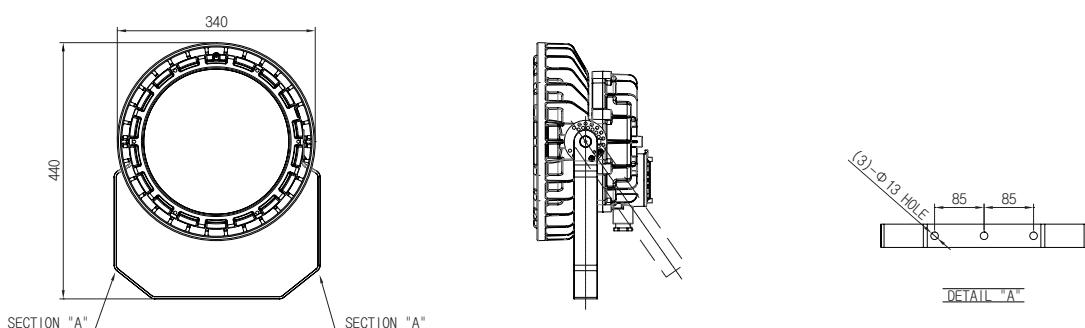
Explosion-proof LED Lighting Fixture  
IS-LEDF-D\* series for Hazardous Location

## Protection Grade

Ex d IIC T5 IP66,  
Ex tD A21 T95°C IP66 Zone 1,2



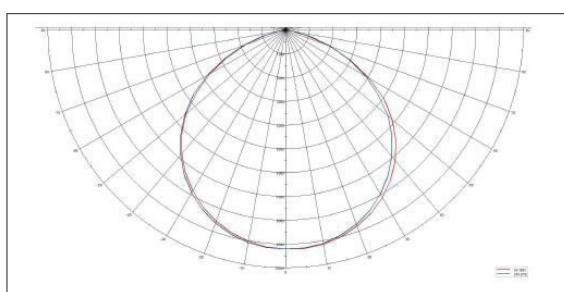
## Drawing



## Standard Material

- Main Body :** Die-Cast Aluminium Alloy
- Holder :** Aluminium Alloy
- Glass :** Heat Resistant Hard Glass
- Bolt & Washer :** Stainless Steel
- Support :** Stainless Steel

## Light Distribution Curve



## Standard Color

- Munsell no. 7.5BG 6/1.5  
If you want other color, contact us please.

## Technical Data

- Rated Voltage :** AC 90~270V Below
- Rated Wattage :** 100W/120W/150W/180W/200W
- Rated Frequency :** 47~63Hz
- Entry Size :** 1/2"(16C), 3/4"(22C), 1"(28C)
- Demension :** 340(Φ) x 204(H)

## Ordering Number

Lamp	Watt	Catalogue No.	Weight
LED	100W	IS-LEDF-D100W	10.4 kg
LED	120W	IS-LEDF-D120W	10.4 kg
LED	150W	IS-LEDF-D150W	10.4 kg
LED	180W	IS-LEDF-D180W	10.4 kg
LED	200W	IS-LEDF-D200W	10.4 kg

# ISAL-C10\*

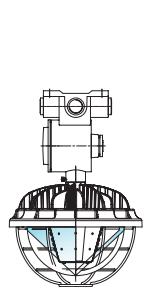
Explosion-proof LED Lighting Fixture  
ISAL-C10\*Series for Hazardous Location

**Protection Grade**

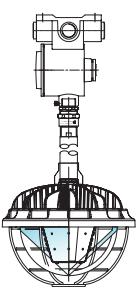
Ex d IIIC T6 IP65 for Zone 1·2



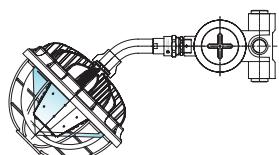
Drawing



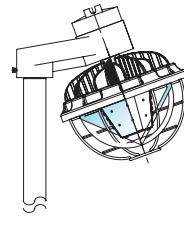
Ceiling Type



Pendant Type



Bracket Type

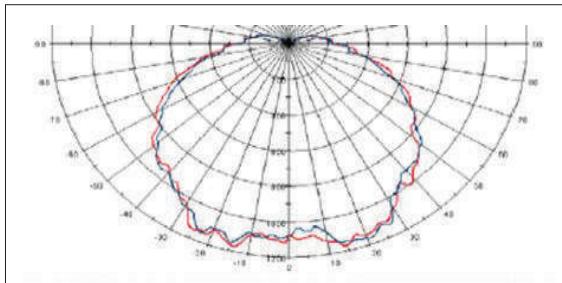


Stanchion Type

Standard Material

- **Main Body** : Die-Cast Aluminium Alloy
- **Holder** : Die-Cast Aluminium Alloy
- **Glass** : Heat Resistant Hard Glass
- **Guard** : Stainless Steel
- **Mounting Box** : Die-Cast Aluminium Alloy
- **Bolt & Washer** : Stainless Steel

Light Distribution Curve



Standard Color

- Munsell no. 7.5BG 6/1.5  
If you want other color, contact us please.

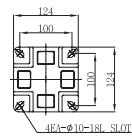
Technical Data

- **Rated Voltage** : AC 220V Below
- **Rated Wattage** : 30W/55W
- **Rated Frequency** : 50Hz/60Hz
- **Entry Size** : 3/4"(22C), 1"(28C)

Weight

Mounting Typed	Model No.	Weight
Ceiling	ISAL-C10*-01	6.9kg
Pendant	ISAL-C10*-02	7.4kg
Bracket	ISAL-C10*-03	7.6kg
Stanchion	ISAL-C10*-04	

Mounting Box Hole Size



Appearance	Hole space
124 x 124	100 x 100

Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
LED	30W	ISAL-C1030-01	ISAL-C1030-02	ISAL-C1030-03	ISAL-C1030-04
LED	55W	ISAL-C1055-01	ISAL-C1055-02	ISAL-C1055-03	ISAL-C1055-04

# ISAL-F11\*

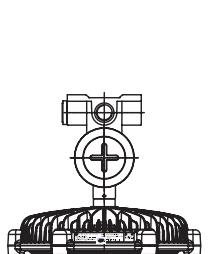
Explosion-proof LED Lighting Fixture  
ISAL-F11\* series for Hazardous Location  
And DC110V 비상등용

**Protection Grade**

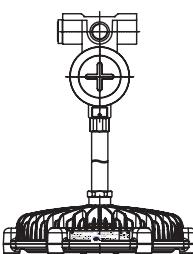
Ex d IIC T6 IP66 Zone 1·2



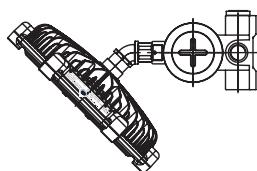
**Drawing**



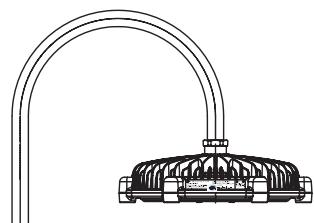
Ceiling Type



Pendant Type



Bracket Type

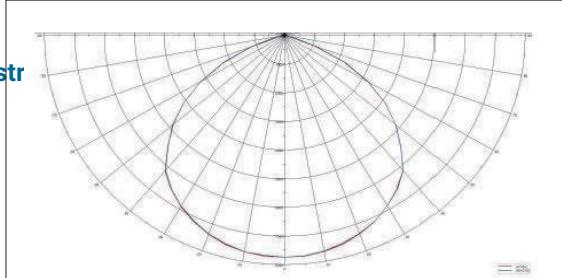


Goose-neck Type

**Standard Material**

- Main Body** : Die-Cast Aluminium Alloy
- Holder** : Die-Cast Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- Mounting Box** : Die-Cast Aluminium Alloy
- Bolt & Washer** : Stainless Steel

**Light Distr**



**Standard Color**

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

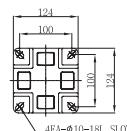
**Technical Data**

- Rated Voltage** : AC/DC 100~240V
- Rated Wattage** : 30W/55W/80W
- Rated Frequency** : 50Hz/60Hz
- Entry Size** : 3/4"(22C), 1"(28C)

**Weight**

Mounting Type	Model No.	Weight
Ceiling	ISAL-F11-01	10.4kg
Pendant	ISAL-F11-02	11.1kg
Bracket	ISAL-F11-03	10.9kg
Stanchion	ISAL-F11-04	

**Mounting Box Hole Size**



Outward	Hole space
124 x 124	100 x 100

**Ordering Number**

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Goose-neck Type
LED	30W	ISAL-F1130-01	ISAL-F1130-02	ISAL-F1130-03	ISAL-F1130-04
LED	55W	ISAL-F1155-01	ISAL-F1155-02	ISAL-F1155-03	ISAL-F1155-04
LED	80W	ISAL-F1180-01	ISAL-F1180-02	ISAL-F1180-03	ISAL-F1180-04

# ISWL-\* Series

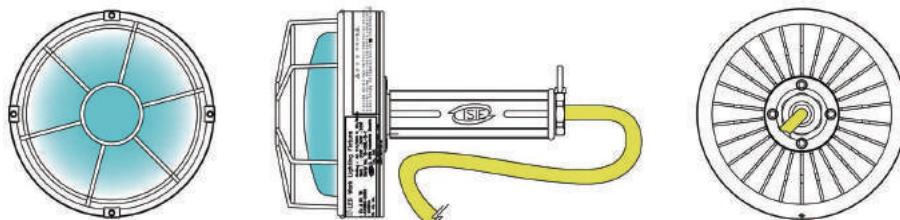
Explosion-proof LED Lighting Fixture  
ISWL Series for Hazardous Location

**Protection Grade**

Ex d IIIC T5 IP66 for Zone 1·2



Drawing



Standard Material

- **Main Body** : Aluminium Alloy
- **Glass** : Heat Resistant Hard Glass
- **Guard** : Stainless steel
- **Bolt & Washer** : Stainless Steel

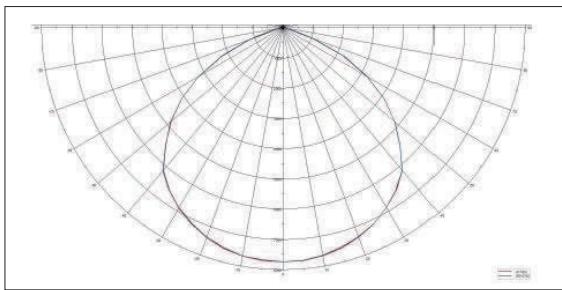
Standard Color

- Silver

Technical Data

- **Rated Voltage** : AC 110/220V
- **Rated Wattage** : 30W
- **Rated Frequency** : 50/60Hz

Light Distribution Curve



Weight

2kg

Ordering Number

Lamp	Watt	Cable 길이
LED	30W	5m 10m 20m 30m

# ISWL-\* Series

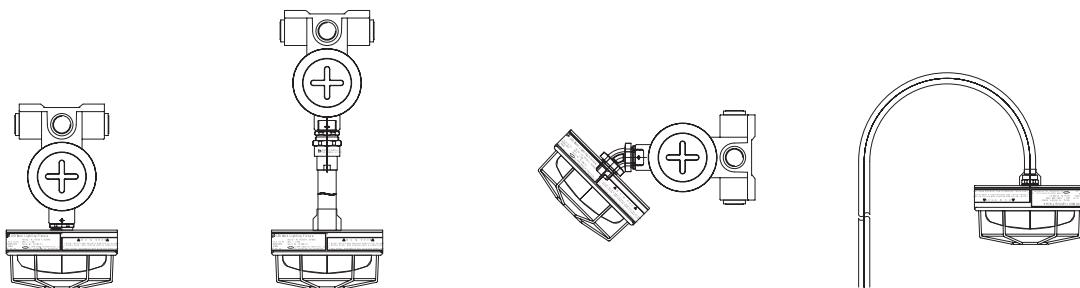
Explosion-proof LED Lighting Fixture  
ISWL-\* Eye Shower Green Light Series for Hazardous Location

**Protection Grade**

Ex d IIIC T5 IP66 for Zone 1·2



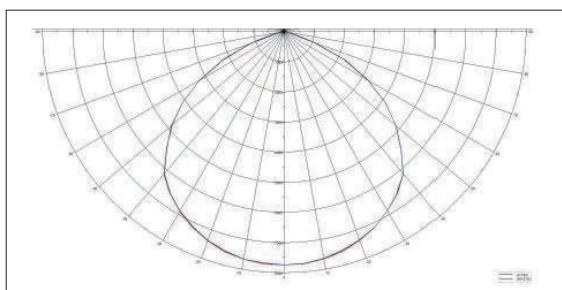
Drawing



Standard Material

- Main Body : Aluminium Alloy
- Glass : Heat Resistant Hard Glass
- Guard : Stainless steel
- Bolt & Washer : Stainless Steel

Light Distribution Curve



Standard Color

- Silver

Technical Data

- Rated Voltage : AC 110/220V
- Rated Wattage : 15W
- Rated Frequency : 50/60Hz
- LED Color : GREEN

Weight

3.7kg

Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
LED	15W	ISWL-15W-01	ISWL-15W-02	ISWL-15W-03	ISWL-15W-04

# ISWL-C10\*

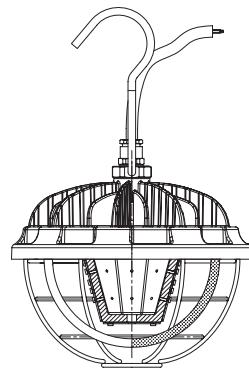
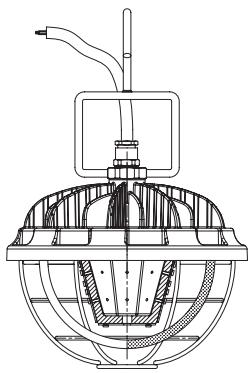
Explosion-proof LED Lighting Fixture  
ISWL-C10\*Series for Hazardous Location

**Protection Grade**

Ex d IIIC T6 IP65 for Zone 1·2



Drawing



Standard Material

- **Main Body** : Die-Cast Aluminium Alloy
- **Holder** : Die-Cast Aluminium Alloy
- **Glass** : Heat Resistant Hard Glass
- **Guard** : Stainless Steel
- **Bolt & Washer** : Stainless Steel

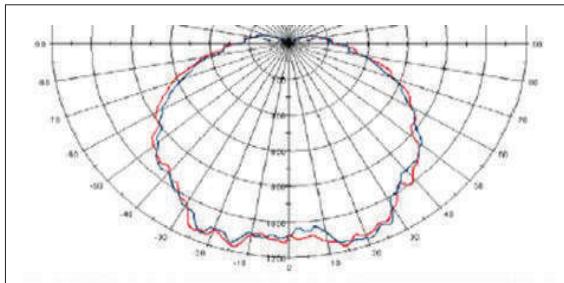
Standard Color

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

Technical Data

- **Rated Voltage** : AC 220V Below
- **Rated Wattage** : 30W/55W
- **Rated Frequency** : 50Hz/60Hz
- **Entry Size** : 3/4"(22C), 1"(28C)

Light Distribution Curve



Weight

5.7kg

Ordering Number

Lamp	Watt	Cable 길이 (기본 10m)		
		10m	20m	30m
LED	30W	ISWL-C1030-10m	ISWL-C1030-20m	ISWL-C1030-30m
	55W	ISWL-C1055-10m	ISWL-C1055-20m	ISWL-C1055-30m

# ISWL-F11\*\*

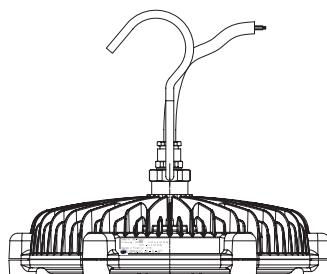
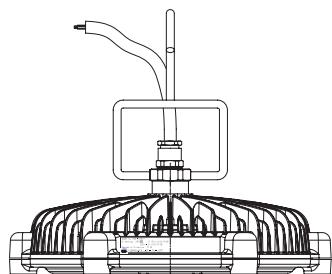
Explosion-proof LED Lighting Fixture  
ISWL-F11 series for Hazardous Location

**Protection Grade**

Ex d IIIC T6 IP66 Zone 1·2



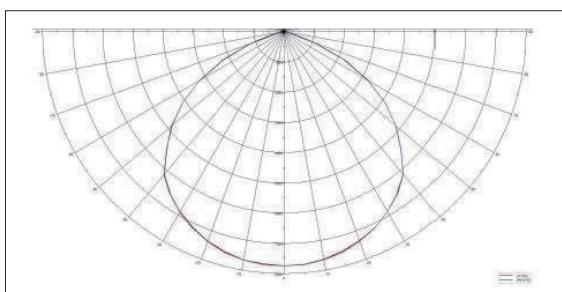
Drawing



Standard Material

- **Main Body** : Die-Cast Aluminium Alloy
- **Holder** : Die-Cast Aluminium Alloy
- **Glass** : Heat Resistant Hard Glass
- **Bolt & Washer** : Stainless Steel

Light Distribution Curve



Standard Color

- Munsell no. 7.5BG 6/1.5  
If you want other color, contact us please.

Technical Data

- **Rated Voltage** : AC 100~240V Below
- **Rated Wattage** : 30W/55W/80W
- **Rated Frequency** : 50Hz/60Hz
- **Entry Size** : 3/4"(22C), 1"(28C)

Weight

5.8kg

Ordering Number

Lamp	Watt	Cable 길이 (기본 10m)		
		10m	20m	30m
LED	30W	ISWL-F1130-10m	ISWL-F1130-20m	ISWL-F1130-30m
LED	55W	ISWL-F1155-10m	ISWL-F1155-20m	ISWL-F1155-30m
LED	80W	ISWL-F1180-10m	ISWL-F1180-20m	ISWL-F1180-30m



# IS-LTL30

## Explosion-proof LED Tubular Lighting IS-LTL30 Series for Hazardous Location

### Protection Grade

Ex d IIC T6 IP66 for Zone 1·2  
Ex tD A21 IP66 T80°C Zone 21·22



### Standard Material

- Main Body : Aluminium
- Cover : Aluminium
- Glass Hold Cover : Aluminium
- Glass : Heat Resistant Hard Glass

### Certificate

KOSHA(18-AV2B0-0161X) - Exd  
KOSHA(18-AV2B0-0162X) - Ex tD  
NEPSI(GYJ18.1344X) - Ex d IIC T6 Gb

### Specifcate

AC 110V, AC 220V , DC 24V 10W

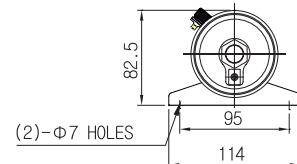
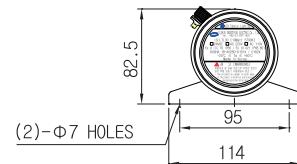
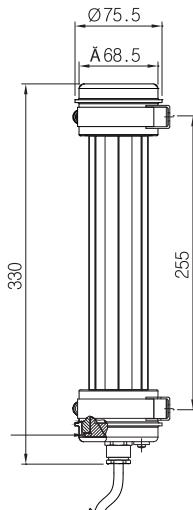
### User

배전반 및 제어반 판넬의 방폭형 등기구로 내/외부에 설치하여  
DOOR 개폐와 연동 및 별도의 스위치와 연동하여 점등 점멸 콤  
팩트 한사이즈로 설치에 제약이 없으며 우수한 광원으로 시야  
확보에 최적

### Weight

1.7kg

### Drawing



### Ordering Number

Model No.	Use	Rating
ISLTL-30	LED 10W	DC 24V
ISLTL-30	LED 10W	AC 110V
ISLTL-30	LED 10W	AC 220V

# ISTL-\*

## Explosion-proof Tower Lamp (4 color) ISTL-\* Series for Hazardous Location

### Protection Grade

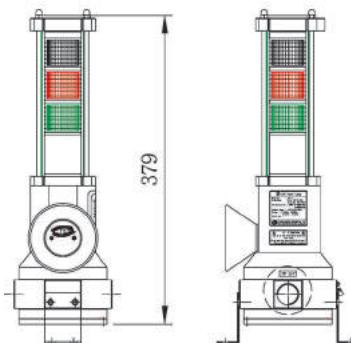
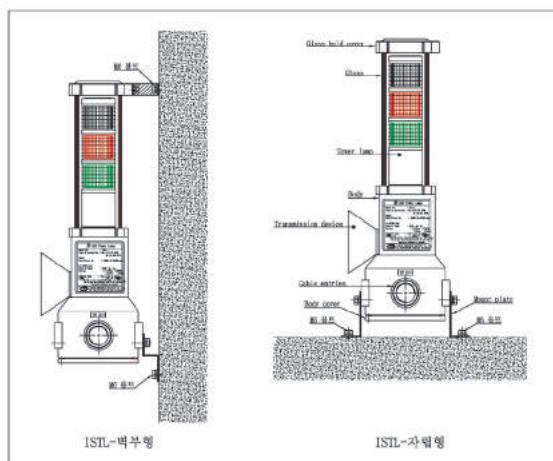
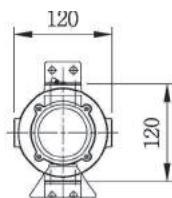
Ex d IIC T6 IP65 for Zone 1·2  
Ex tD A21 IP65 T85°C Zone 21·22



### Standard Material

- Main Body** : Aluminium
- Cover** : Aluminium
- Glass Hold Cover** : Aluminium
- Glass** : Heat Resistant Hard Glass
- Guard** : Stainless Steel
- Sound Level** : 70dB

### Drawing



Model No.	Use	Lamp No.	Rating	Remark
ISTL-A	Lighting+Blink+Buzzer	3	AC110/220V	
ISTL-B	Lighting+Buzzer	3	AC110/220V	
ISTL-C	Lighting+Buzzer	4	AC110/220V	
ISTL-D	Lighting+Blink+Buzzer	3	AC/DC12/24V	
ISTL-E	Lighting+Blink+Buzzer	4	AC/DC12/24V	
ISTL-F	Lighting+Blink	3	AC110/220V	
ISTL-G	Lighting+Blink	4	AC110/220V	[경고음 5음]
ISTL-H	Lighting+Blink	4	AC/DC12/24V	[멜로디 5음]
ISTL-I	Lighting+Buzzer	4	AC/DC12/24V	[알 램 5음]
ISTL-J	Lighting	4	AC110/220V	
ISTL-K	Lighting	4	AC/DC12/24V	

부저형의 경우  
아래형식으로  
변경가능

# ISTLS-\*

## Explosion-proof Tower Lamp (3 color) ISTLS-\* Series for Hazardous Location

### Protection Grade

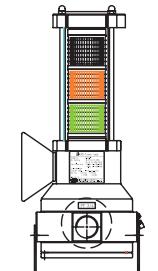
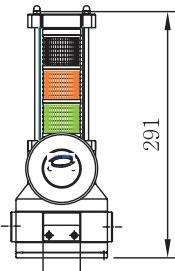
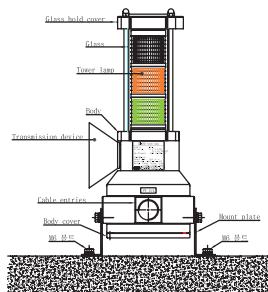
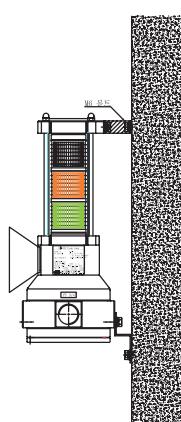
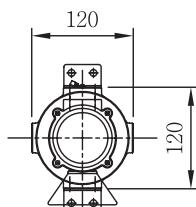
Ex d IIC T6 IP65 for Zone 1·2  
Ex tD A21 IP65 T85°C Zone 21·22



### Standard Material

- Main Body** : Aluminium
- Cover** : Aluminium
- Glass Hold Cover** : Aluminium
- Glass** : Heat Resistant Hard Glass
- Guard** : Stainless Steel
- Sound Level** : 70dB

### Drawing



ISTLS-벽부형

ISTLS-자립형

### Ordering Number

Model No.	Use	Lamp No.	Rating	Remark
ISTLS-A	Lighting+Buzzer	3	AC/DC12/24V	
ISTLS-B	Lighting+Blink	3	AC/DC12/24V	
ISTLS-C	Lighting	3	AC/DC12/24V	부저형의 경우 아래형식으로 변경가능
ISTLS-D	Lighting	3	AC110/220V	
ISTLS-E	Lighting+Buzzer	2	AC110/220V	[경고음 5음]
ISTLS-F	Lighting+Blink	2	AC110/220V	[멜로디 5음]
ISTLS-G	Lighting+Blink+Buzzer	2	AC/DC12/24V	[알 램 5음]
ISTLS-H	Lighting+Blink	1	AC110/220V	

## Explosion-proof Tower lamp ISTL-\* Series for Hazardous Location

### Diagram (4 color)

ISTL-A CONNCTION DIAGRAM	ISTL-B CONNCTION DIAGRAM	ISTL-C CONNCTION DIAGRAM	ISTL-D CONNCTION DIAGRAM
ISTL-E CONNCTION DIAGRAM	ISTL-F CONNCTION DIAGRAM	ISTL-G CONNCTION DIAGRAM	ISTL-H CONNCTION DIAGRAM
ISTL-I CONNCTION DIAGRAM	ISTL-J CONNCTION DIAGRAM	ISTL-K CONNCTION DIAGRAM	

## Explosion-proof Tower lamp ISTLS-\* Series for Hazardous Location

### Diagram (3 color)

ISTLS-A CONNCTION DIAGRAM	ISTLS-B CONNCTION DIAGRAM	ISTLS-C CONNCTION DIAGRAM
ISTLS-D CONNCTION DIAGRAM	ISTLS-E CONNCTION DIAGRAM	ISTLS-F CONNCTION DIAGRAM
ISTLS-G CONNCTION DIAGRAM	ISTLS-H CONNCTION DIAGRAM	

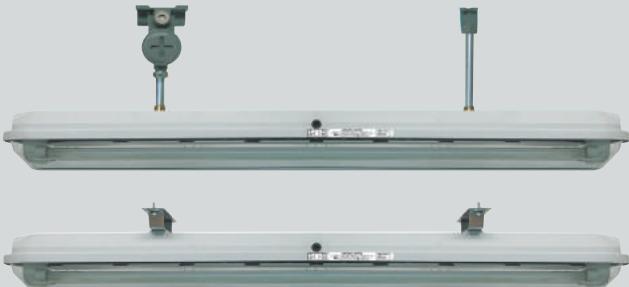
# EFDFL-LED

## Explosion-proof Tubular LED Lighting Fixture EFDFL Series for Hazardous Location

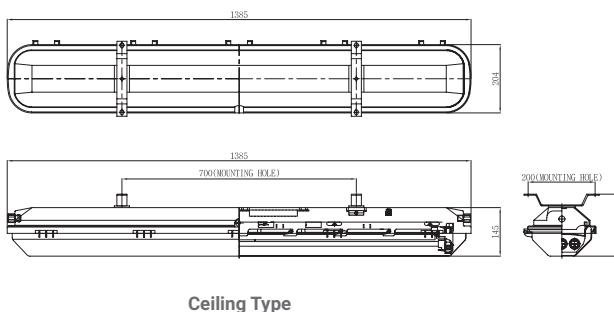
### Protection Grade

Ex denR IIB T6 IP66 for Zone 2

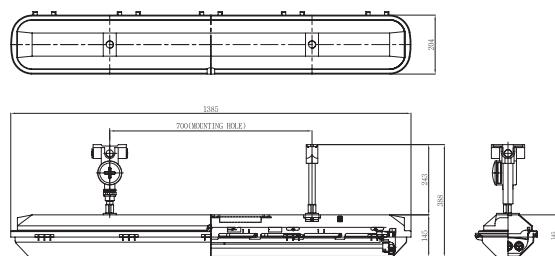
Ex tD A21 IP66 T85° Zone 21·22



### Drawing



Ceiling Type

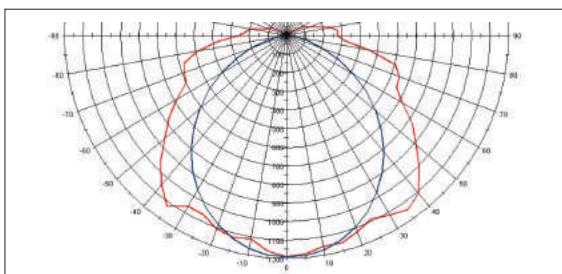


Pendant Type

### Standard Material

- Main Body** : Engineering Plastic
- Cover** : Engineering Plastic
- Inner Reflector** : High Purity Aluminium
- Gasket** : Silicone Rubber
- Interlock Switch** : Engineering Plastic
- Mounting Box** : Die-Cast Aluminum

### Light Distribution Curve



### Standard Color

- Vendor Standard

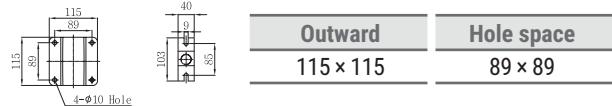
### Technical Data

- Rated Voltage** : AC 240V Below
- Rated Wattage** : MAX 21W
- Rated Frequency** : 60Hz
- Entry Size** : 1/2", 3/4"
- Dimension** : 1385(W) x 204(H) 145(D)

### Weight

Mounting Type	Model No.	Weight
Ceiling	EFDFL-LED-01	6kg
Pendant	EFDFL-LED-02	7.5kg
Bracket	EFDFL-LED-03	7.5kg

### Mounting Box Hole Size



### Ordering Number

Lamp	Voltage(V)	Frequency(Hz)	Ceiling Type	Pendant Type	Bracket Type
LED Lampx2	220	50	EFDFL-LED-251	EFDFL-LED-252	EFDFL-LED-253
		60	EFDFL-LED-261	EFDFL-LED-262	EFDFL-LED-263
LED Lampx3	220	50	EFDFL-LED-251	EFDFL-LED-252	EFDFL-LED-253
		60	EFDFL-LED-261	EFDFL-LED-262	EFDFL-LED-263

# ISNFL-\*\*

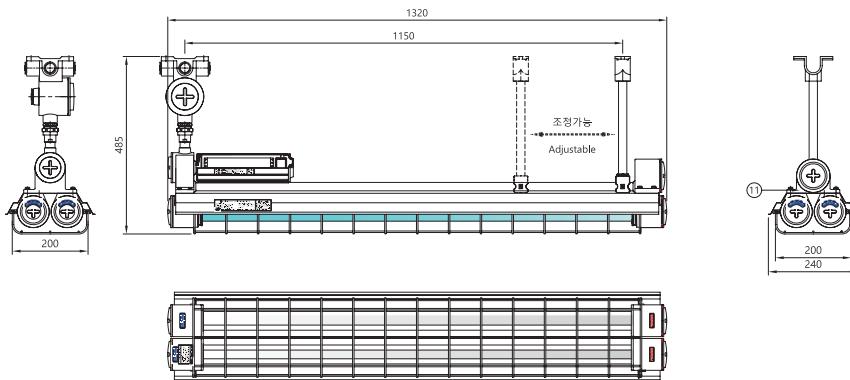
Explosion-proof Tubular Lighting Fixture  
ISNFL-\*\* Series for Hazardous Location

## Protection Grade

Ex d IIC T6 IP66[KCs] Zone 1,2  
Exd IIC T6Gb, IP66[IECEx]



## Drawing



## Standard Material

- Main Body** : Cast Aluminum
- Cover** : Die-Cast Aluminium Alloy
- Cylinder Glass** : Heat Resistant Hard Glass
- Mounting Box** : Die-Cast Aluminum

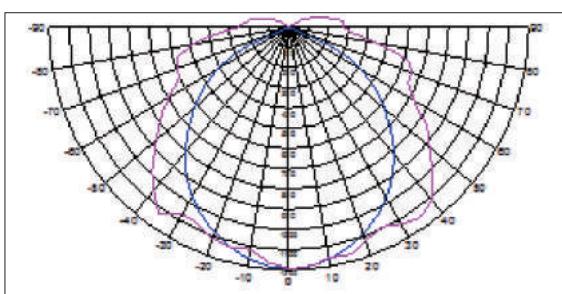
## Standard Color

- Munsell No 7.5BG 6/1.5

## Technical Data

- Rated Voltage** : AC 100~240V Below
- Rated Wattage** : LED22W & FL 32W Below
- Rated Frequency** : 50Hz/60Hz
- Entry Size** : 1/2"(16C), 3/4"(22C)
- Dimension** : 1320(W) x 240(H) 485(D)

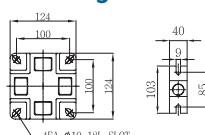
## Light Distribution Curve



## Weight

Mounting Typed	Model No.	Weight
Ceiling	ISNFL-LED-01	16.5kg
Pendant	ISNFL-LED-02	17.0kg
Bracket	ISNFL-LED-03	17.0kg

## Mounting Box Hole Size



Outward	Hole space
124 x 124	100 x 100

## Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type
LED	16.7W	ISNFL-L16.7 b-01	ISNFL-L16.7 b-02	ISNFL-L16.7 b-03
LED	22W	ISNFL-L22 b-01	ISNFL-L22b-02	ISNFL-L22 b-03
FL	32W	ISNFL-F32 b-01	ISNFL-F32 b-02	ISNFL-F32 b-03

\* Volt selection [b]  
a:220Vac, b:230Vac, c:240Vac, d:Etc Volt

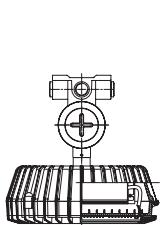
# ISAL-N\*\*W

Weather-proof LED Lighting Fixture  
ISAL-N\*\*W series for General purpose

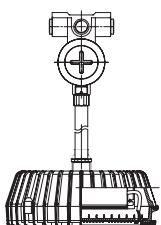
**Protection Grade**  
IP65



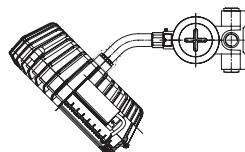
## Drawing



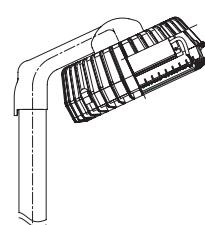
Ceiling Type



Pendant Type



Bracket Type

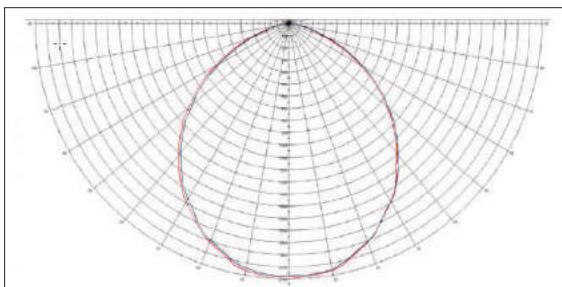


Stanchion Type

## Standard Material

- Main Body** : Die-Cast Aluminium Alloy
- Holder** : Die-Cast Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- Mounting Box** : Die-Cast Aluminium Alloy
- Bolt & Washer** : Stainless Steel

## Light Distribution Curve



## Standard Color

- Munsell no. 7.5BG 6/1.5

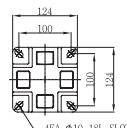
## Technical Data

- Rated Voltage** : AC 200~240V Below
- Rated Wattage** : 55W/60W/80W/100W
- Rated Frequency** : 50Hz/60Hz
- Entry Size** : 3/4"(22C)

## Weight

Mounting Type	Model No.	Weight
Ceiling	ISAL-N**W-01	6.8kg
Pendant	ISAL-N**W-02	7.5kg
Bracket	ISAL-N**W-03	7.3kg
Stanchion	ISAL-N**W-04	

## Mounting Box Hole Size



Outward	Hole space
124 x 124	100 x 100

## Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
LED	55W	ISAL-N55W-01	ISAL-N55W-02	ISAL-N55W-03	ISAL-N55W-04
LED	60W	ISAL-N60W-01	ISAL-N60W-02	ISAL-N60W-03	ISAL-N60W-04
LED	80W	ISAL-N80W-01	ISAL-N80W-02	ISAL-N80W-03	ISAL-N80W-04
LED	100W	ISAL-N100W-01	ISAL-N100W-02	ISAL-N100W-03	ISAL-N100W-04

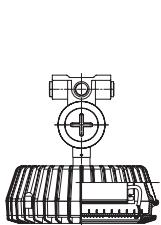
# EGHL-LED\*\*W

Weather-proof LED Lighting Fixture  
EGHL-\*\*W series for General purpose

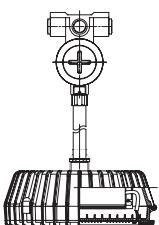
**Protection Grade**  
IP65



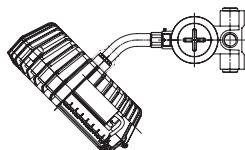
## Drawing



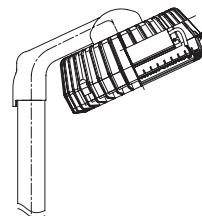
Ceiling Type



Pendant Type



Bracket Type



Stanchion Type

## Standard Material

- Main Body :** Die-Cast Aluminium Alloy
- Holder :** Die-Cast Aluminium Alloy
- Glass :** Heat Resistant Hard Glass
- Mounting Box :** Die-Cast Aluminium Alloy
- Bolt & Washer :** Stainless Steel

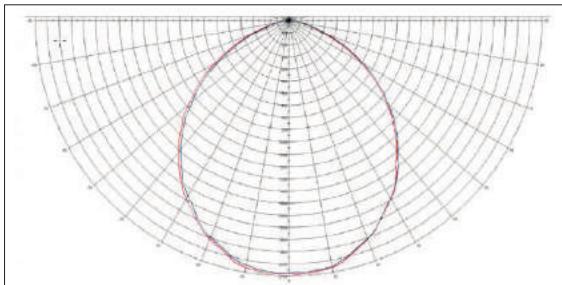
## Standard Color

- Munsell no. 7.5BG 6/1.5

## Technical Data

- Rated Voltage :** AC 100~240V Below
- Rated Wattage :** 55W/60W/80W/100W
- Rated Frequency :** 60Hz
- Entry Size :** 3/4"(22C)

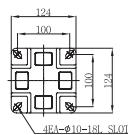
## Light Distribution Curve



## Weight

Mounting Type	Model No.	Weight
Ceiling	EGHL-LED**W-01	6.8kg
Pendant	EGHL-LED**W-02	7.5kg
Bracket	EGHL-LED**W-03	7.3kg
Stanchion	EGHL-LED**W-04	

## Mounting Box Hole Size



Outward	Hole space
124 × 124	100 × 100

## Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
LED	55W	EGHL-LED55W-01	EGHL-LED55W-02	EGHL-LED55W-03	EGHL-LED55W-04
LED	60W	EGHL-LED60W-01	EGHL-LED60W-02	EGHL-LED60W-03	EGHL-LED60W-04
LED	80W	EGHL-LED80W-01	EGHL-LED80W-02	EGHL-LED80W-03	EGHL-LED80W-04
LED	100W	EGHL-LED100W-01	EGHL-LED100W-02	EGHL-LED100W-03	EGHL-LED100W-04

# EGHF-\*\*\*W

Weather-proof LED Lighting Fixture  
EGHF-\*\*\*W series for General purpose

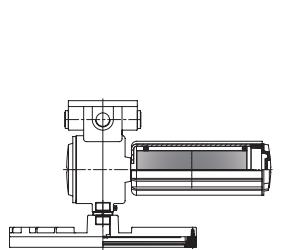
**Protection Grade**

IP65

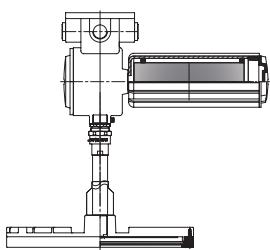
고효율인증(120W)



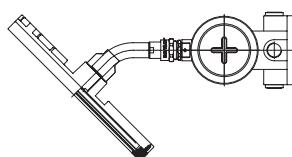
Drawing



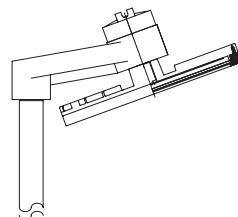
Ceiling Type



Pendant Type



Bracket Type

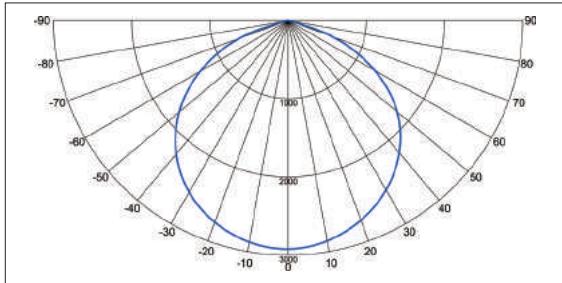


Stanchion Type

Standard Material

- Main Body** : Die-Cast Aluminium Alloy
- Holder** : Die-Cast Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- Mounting Box** : Die-Cast Aluminium Alloy
- Bolt & Washer** : Stainless Steel

Light Distribution Curve



Standard Color

- Munsell no. 7.5BG 6/1.5

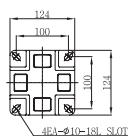
Technical Data

- Rated Voltage** : AC 220V Below
- Rated Wattage** : 100W/120W/150W/200W
- Rated Frequency** : 50Hz/60Hz
- Entry Size** : 3/4"(22C)

Weight

Mounting Typed	Model No.	Weight
Ceiling	EGHF-***W-01	7.5kg
Pendant	EGHF-***W-02	10.15kg
Bracket	EGHF-***W-03	9.95kg
Stanchion	EGHF-***W-04	

Mounting Box Hole Size



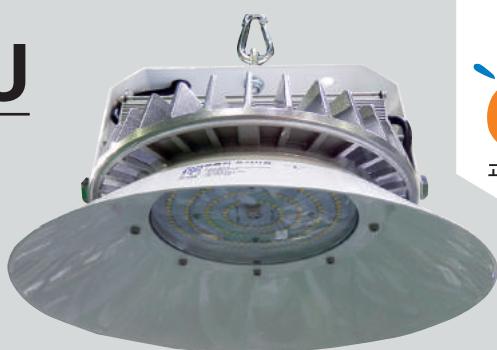
Outward	Hole space
124 x 124	100 x 100

Ordering Number

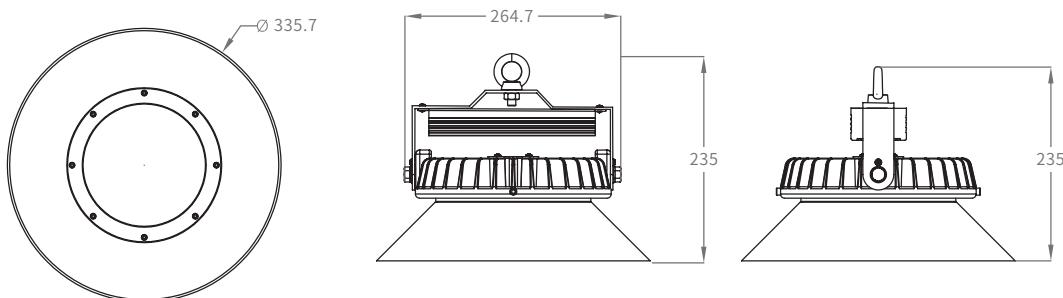
Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
LED	100W	EGHF-100W-01	EGHF-100W-02	EGHF-100W-03	EGHF-100W-04
LED	120W	EGHF-120W-01	EGHF-120W-02	EGHF-120W-03	EGHF-120W-04
LED	150W	EGHF-150W-01	EGHF-150W-02	EGHF-150W-03	EGHF-150W-04
LED	200W	EGHF-200W-01	EGHF-200W-02	EGHF-200W-03	EGHF-200W-04

# SJT-100SU/150SU

**Protection Grade**  
고효율인증 IP65



## Drawing



## Standard Material

- **Main Body :** Die-Cast Aluminium Alloy
- **Glass :** Heat Resistant Hard Glass
- **Bolt & Washer :** Stainless Steel

## Standard Color

- White

## Technical Data

- **Rated Voltage :** AC 100~220V Below / only AC220V
- **Rated Wattage :** 100W/150W
- **Rated Frequency :** 50Hz/60Hz

## Ordering Number

Lamp	Watt	Stanchion Type
LED	100W	SJT-100SU
LED	150W	SJT-150SU

# SJT-80ST/100ST/120ST



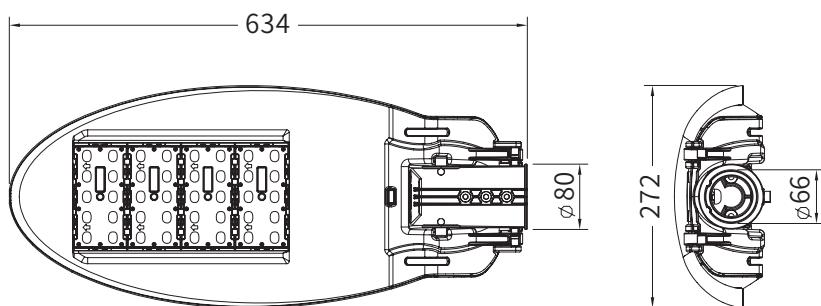
## Protection Grade

IP65

고효율인증



## Drawing



## Standard Material

- Main Body** : Die-Cast Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- Bolt & Washer** : Stainless Steel

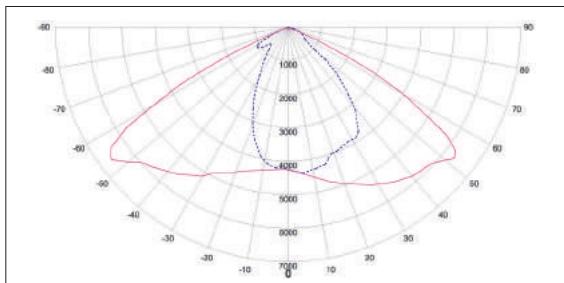
## Standard Color

- Dark gray

## Technical Data

- Rated Voltage** : AC 100~240V Below
- Rated Wattage** : 80W/100W/120W
- Rated Frequency** : 50Hz/60Hz

## Light Distribution Curve



## Weight

Mounting Type	Model No.	Weight
Stanchion	SJT-**ST	4.3kg

## Ordering Number

Lamp	Watt	Stanchion Type
LED	80W	SJT-80ST
LED	100W	SJT-100ST
LED	120W	SJT-120ST

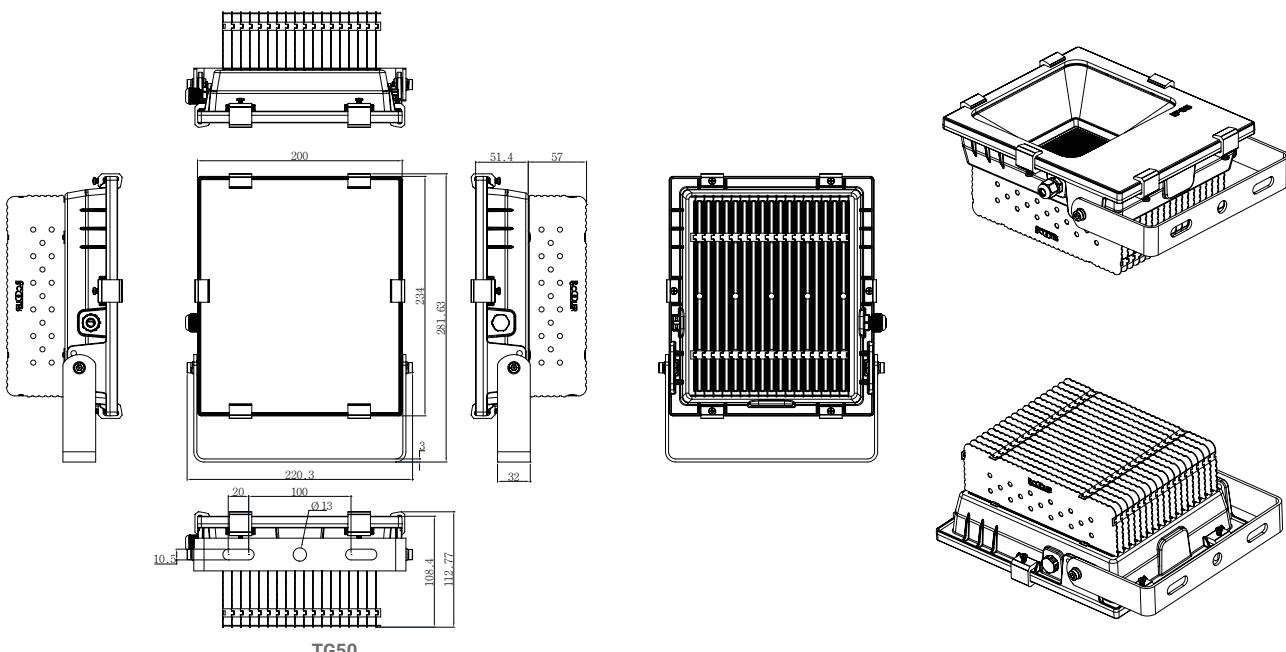
# TG50/80/150/200/250

## Protection Grade

IP65



## Drawing



## Standard Material

- Main Body :** Die-Cast Aluminium Alloy
- Glass :** Heat Resistant Hard Glass
- Bolt & Washer :** Stainless Steel

## Standard Color

- Black

## Technical Data

- Rated Voltage :** AC 100~240V Below
- Rated Wattage :** 50W/80W/150W/200W/250W
- Rated Frequency :** 50Hz/60Hz
- Entry Size :**

## Ordering Number

Lamp	Watt	Stanchion Type
LED	50W	TG-50
LED	80W	TG-80
LED	150W	TG-150
LED	200W	TG-200
LED	250W	TG-250



# b



## LIGHTING FIXTURES

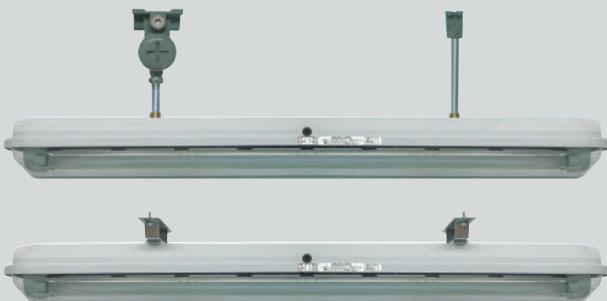
EFDL Series for Hazardous Location_	60
GWFL Series_	61
FICL-EL Series for Hazardous Location_	62
EPHL Series for Hazardous Location_	63
VSHL Series for General_	64
FGHL Series for Hazardous Location_	65
FHBL Series for Hazardous Location_	66
WHCL Series for General_	67
Pole & Stanchion Type Lighting Fixture_	68
Taper Pole	69

# EFDFL-233

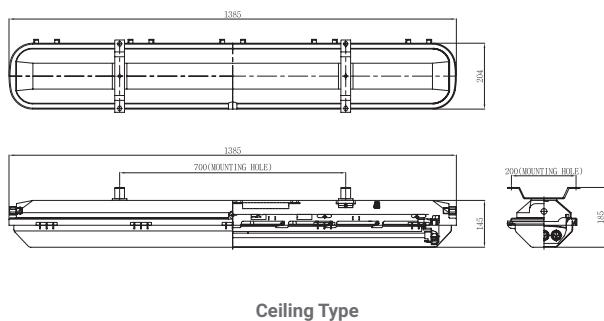
Explosion-proof FL Lighting Fixture  
EFDFL Series for  
Hazardous Location

**Protection Grade**

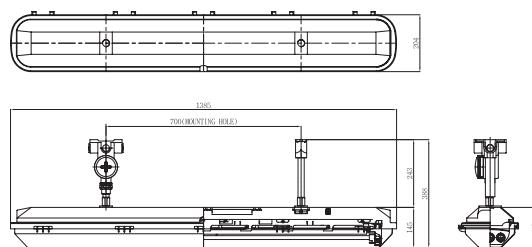
Ex de IIIC T4 IP66 for Zone 1·2



**Drawing**



Ceiling Type

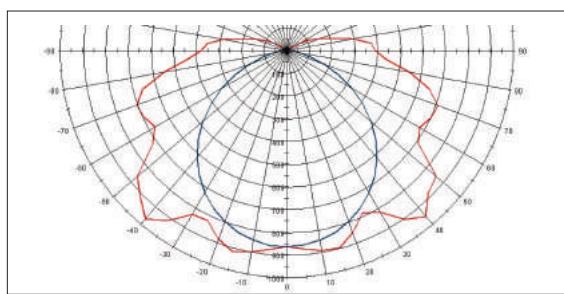


Pendant Type

**Standard Material**

- **Main Body** : Engineering Plastic
- **Cover** : Engineering Plastic
- **Inner Reflector** : High Purity Aluminum
- **Gasket** : Innoprene
- **Interlock Switch** : Engineering Plastic
- **Ballast Cast** : Engineering Plastic
- **Mounting Box** : Cast Aluminum

**Light Distribution Curve**



**Ordering Number**

Lamp	Voltage(V)	Frequency(Hz)	Ceiling Type	Pendant Type	Bracket Type
FL32*1	220	50	EFDFL-233-251	EFDFL-233-252	EFDFL-233-253
		60	EFDFL-233-261	EFDFL-233-262	EFDFL-233-263
FL32*2	220	50	EFDFL-233-251	EFDFL-233-252	EFDFL-233-253
		60	EFDFL-233-261	EFDFL-233-252	EFDFL-233-263
FL32*3	220	50	EFDFL-233-251	EFDFL-233-252	EFDFL-233-253
		60	EFDFL-233-261	EFDFL-233-262	EFDFL-233-263

**Standard Color**

- Vendor Standard

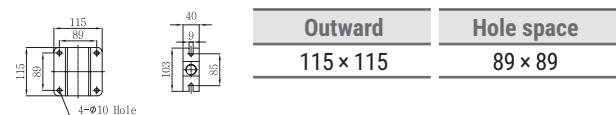
**Technical Data**

- **Rated Voltage** : AC100~240V Below
- **Rated Wattage** : FL32W × 2, FL32W × 3
- **Rated Frequency** : 50Hz/60Hz
- **Entry Size** : 1/2"(16C), 3/4"(22C)
- **Dimension** : 1385(W) × 204(H) × 145(D)

**Weight**

Mounting Typed	Model No.	Weight
Ceiling	EFDFL-01	6kg
Pendant	EFDFL-02	7.5kg
Bracket	EFDFL-03	7.5kg

**Mounting Box Hole Size**

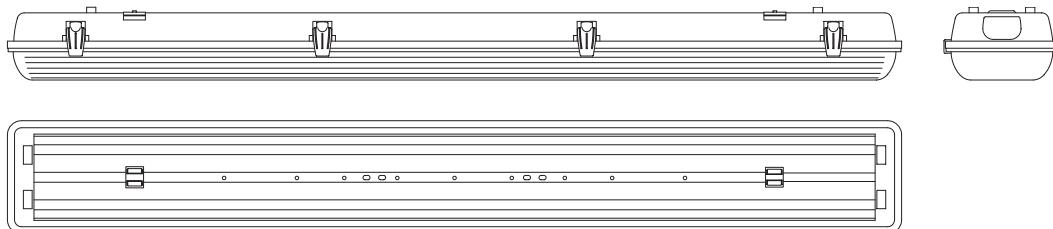


# GWFL

Weather-proof FL & LED Lighting Fixture  
GWFL Series



## Drawing



## Standard Material

- Main Body :** Engineering Plastic
- Cover :** Engineering Plastic
- Inner Reflector :** High Purity Aluminum
- Gasket :** Silicone Rubber

## Technical Data

- Rated Voltage :** AC 100~240V Below
- Rated Wattage :** MAX 32W FL, 21W LED
- Rated Frequency :** 50Hz/60Hz
- Entry Size :** 1/2"(16C), 3/4"(22C)
- Dimension :** 1276(W) x 140(H) x 100(D)

## Standard Color

- Ivory

## Weight

Mounting Typed	Model No.	Weight
Ceiling	GWFL-01	3.5kg
Pendant	GWFL-02	4kg

## Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type
FL	32W*2 MAX	GWFL-01	GWFL-02
LED	LED 21W*2 MAX	GWFL-LED-01	GWFL-LED-02

# FICL-EL\*\*

Explosion-proof FICL-EL Series for Hazardous Location

**Protection Grade**

Ex d IIIC T6 IP65 for zone 1·2



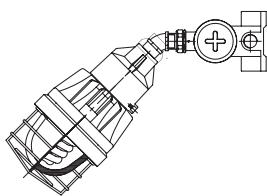
**Drawing**



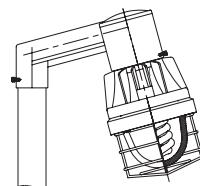
Ceiling Type



Pendant Type



Bracket Type



Stanchion Type

**Standard Material**

- **Main Body** : Cast Aluminum Alloy
- **Holder** : Cast Aluminum Alloy
- **Glass** : Heat Resistant Hard Glass
- **Guard** : Stainless Steel
- **Mounting Box** : Die-Cast Aluminium Alloy
- **Bolt & Washer** : Stainless Steel

**Standard Color**

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

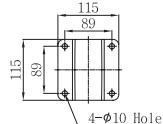
**Technical Data**

- **Rated Voltage** : AC 220V Below
- **Rated Wattage** : EL 24W Below
- **Rated Frequency** : 50Hz/60Hz
- **Entry Size** : 3/4"

**Weight**

Mounting Typed	Model No.	Weight
Ceiling	FICL-EL**-01	4kg
Pendant	FICL-EL**-02	4.5kg
Bracket	FICL-EL**-03	5kg
Stanchion	FICL-EL**-04	

**Mounting Box Hole Size**



Outward	Hole space
115 × 115	89 × 89

**Ordering Number**

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
EL	15W	FICL-EL15W-01	FICL-EL15W-02	FICL-EL15W-03	FICL-EL15W-04
EL	20W	FICL-EL20W-01	FICL-EL20W-02	FICL-EL20W-03	FICL-EL20W-04
EL	24W	FICL-EL24W-01	FICL-EL24W-02	FICL-EL24W-03	FICL-EL24W-04

# EPHL

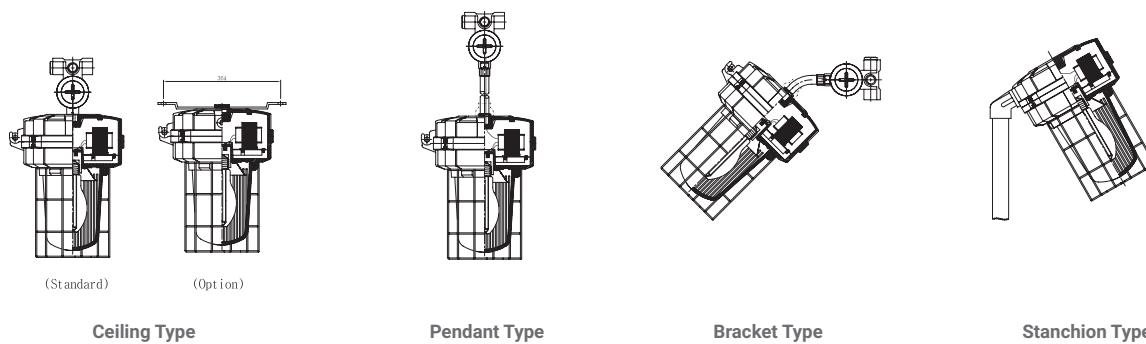
## Non Sparking Integral Ballast H.I.D Lighting Fixture EPHL Series for Hazardous Location

### Protection Grade

Ex nR II T4 IP65 for zone 2



### Drawing



### Standard Material

- Main Body :** Engineering Plastic
- Cover :** Engineering Plastic
- Glass :** Heat Resistant Hard Glass
- Guard :** Stainless Steel
- Mounting Box :** Die-Cast Aluminum Alloy
- Bolt & Washer :** Stainless Steel

### Standard Color

- Vendor Standard

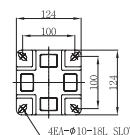
### Technical Data

- Rated Voltage :** AC 100~240V Below
- Rated Wattage :** 250W Below
- Rated Frequency :** 50Hz/60Hz
- Entry Size :** 3/4"(22C)

### Weight

Mounting Type	Model No.	Weight
Ceiling	EPHL-01	13kg
Pendant	EPHL-02	13.5kg
Bracket	EPHL-03	14.5kg
Stanchion	EPHL-04	

### Mounting Box Hole Size



Outward	Hole space
124 × 124	100 × 100

### Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
High Pressure Sodium	150W	EPHL-NH150W-01	EPHL-NH150W-02	EPHL-NH150W-03	EPHL-NH150W-04
	200W	EPHL-NH200W-01	EPHL-NH200W-02	EPHL-NH200W-03	EPHL-NH200W-04
	250W	EPHL-NH250W-01	EPHL-NH250W-02	EPHL-NH250W-03	EPHL-NH250W-04
Metal Halide	150W	EPHL-MH150W-01	EPHL-MH150W-02	EPHL-MH150W-03	EPHL-MH150W-04
	175W	EPHL-MH175W-01	EPHL-MH175W-02	EPHL-MH175W-03	EPHL-MH175W-04
	200W	EPHL-MH200W-01	EPHL-MH200W-02	EPHL-MH200W-03	EPHL-MH200W-04
	250W	EPHL-MH250W-01	EPHL-MH250W-02	EPHL-MH250W-03	EPHL-MH250W-04

# VSHL

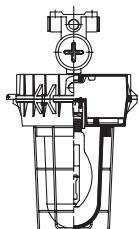
## Weather - Proof H.I.D Lighting Fixture VSHL Series for General

### Protection Grade

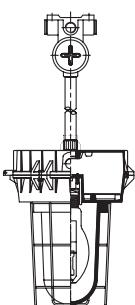
IP66



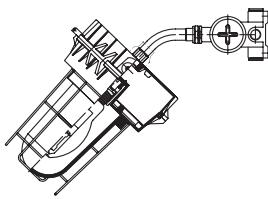
### Drawing



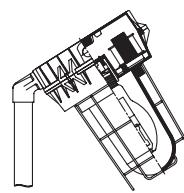
Ceiling Type



Pendant Type



Bracket Type



Stanchion Type

### Standard Material

- Main Body** : Cast Aluminum Alloy
- Cover** : Cast Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- Guard** : Stainless Steel
- Mounting Box** : Die-Cast Aluminium Alloy
- Bolt & Washer** : Stainless Steel

### Standard Color

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

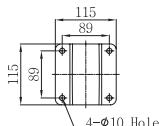
### Technical Data

- Rated Voltage** : AC 100~240V Below
- Rated Wattage** : 250W Below
- Rated Frequency** : 50Hz/60Hz
- Entry Size** : 3/4"(22C)

### Weight

Mounting Typed	Model No.	Weight
Ceiling	VSHL-01	9.5kg
Pendant	VSHL-02	10kg
Bracket	VSHL-03	10kg
Stanchion	VSHL-04	

### Mounting Box Hole Size



Outward	Hole space
115 x 115	89 x 89

### Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
High Pressure Sodium	150W 200W 250W	VSHL-NH215-01 VSHL-NH220-01 VSHL-NH225-01	VSHL-NH215-02 VSHL-NH220-02 VSHL-NH225-02	VSHL-NH215-03 VSHL-NH220-03 VSHL-NH225-03	VSHL-NH215-04 VSHL-NH220-04 VSHL-NH225-04
Metal Halide	150W 175W	VSHL-MH217-01 VSHL-MH225-01	VSHL-MH217-02 VSHL-MH225-02	VSHL-MH217-03 VSHL-MH225-03	VSHL-MH217-04 VSHL-MH225-04

# FGHL

## Explosion-proof Integral Ballast H.I.D Lighting Fixture FGHL Series for Hazardous Location

### Protection Grade

Ex d IIIB+H2 T4 IP66 for Zone 1 2



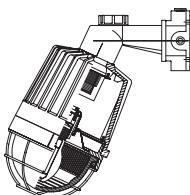
### Drawing



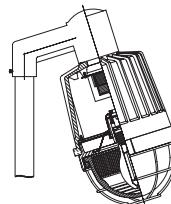
Ceiling Type



Pendant Type



Bracket Type



Stanchion Type

### Standard Material

- Main Body :** Die-Cast Aluminum Alloy
- Holder :** Die-Cast Aluminum Alloy
- Glass :** Heat Resistant Hard Glass
- Guard :** Stainless Steel
- Mounting Box :** Die-Cast Aluminum Alloy

### Standard Color

- Munsell no. 7.5BG 6/1.5

If you want other color, contact us please.

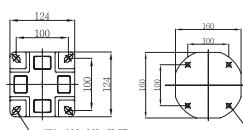
### Technical Data

- Rated Voltage :** AC 110/220V Below
- Rated Wattage :** 250W Below
- Rated Frequency :** 50Hz/60Hz
- Entry Size :** 3/4"(22C), 1"(28C)

### Weight

Mounting Type	Model No.	Weight
Ceiling	FGHL-01	16kg
Pendant	FGHL-02	16.5kg
Bracket	FGHL-03	16.5kg
Stanchion	FGHL-04	16.5kg

### Mounting Box Hole Size



Outward	Hole space
124 x 124	100 x 100

### Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
High Pressure Sodium	100W	FGHL-NH210-01	FGHL-NH210-02	FGHL-NH210-03	FGHL-NH210-04
	150W	FGHL-NH215-01	FGHL-NH215-02	FGHL-NH215-03	FGHL-NH215-04
	200W	FGHL-NH220-01	FGHL-NH220-02	FGHL-NH220-03	FGHL-NH220-04
	250W	FGHL-NH225-01	FGHL-NH225-02	FGHL-NH225-03	FGHL-NH225-04
Metal Halide	175W	FGHL-MH217-01	FGHL-MH217-02	FGHL-MH217-03	FGHL-MH217-04
	250W	FGHL-MH225-01	FGHL-MH225-02	FGHL-MH225-03	FGHL-MH225-04

# FHBL

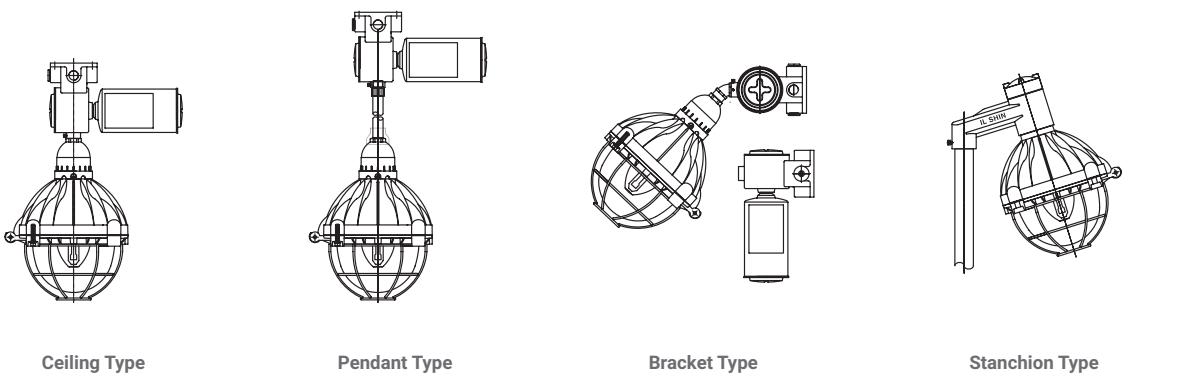
## Explosion-proof H.I.D Lighting Fixture FHBL Series for Hazardous Location

### Protection Grade

Ex d IIIB+H2 T4 IP65 for Zone 1·2



### Drawing



Ceiling Type

Pendant Type

Bracket Type

Stanchion Type

### Standard Material

- Main Body** : Die-Cast Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- Inner Reflector** : High Purity Aluminium
- Guard** : Stainless Steel
- Mounting Box** : Die-Cast Aluminium Alloy
- Bolt & Washer** : Stainless Steel

### Standard Color

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

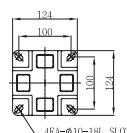
### Technical Data

- Rated Voltage** : AC 100~240V Below
- Rated Wattage** : 250W Below
- Rated Frequency** : 50Hz/60Hz
- Entry Size** : 3/4"(22C), 1"(28C)

### Weight

Mounting Typed	Model No.	Weight
Ceiling	FHBL-MH***-01/FHBL-NH***-01	14.5kg
Pendant	FHBL-MH***-02/FHBL-NH***-02	15kg
Bracket	FHBL-MH***-03/FHBL-NH***-03	15kg
Stanchion	FHBL-MH***-04/FHBL-NH***-04	17.5kg

### Mounting Box Hole Size



Outward	Hole space
124 × 124	100 × 100

### Ordering Number

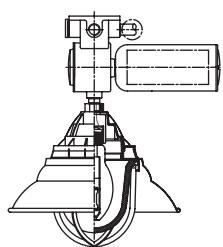
Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
High Pressure Sodium	150W	FHBL-NH150W-01	FHBL-NH150W-02	FHBL-NH150W-03	FHBL-NH150W-04
	200W	FHBL-NH200W-01	FHBL-NH200W-02	FHBL-NH200W-03	FHBL-NH200W-04
	250W	FHBL-NH250W-01	FHBL-NH250W-02	FHBL-NH250W-03	FHBL-NH250W-04
Metal Halide	150W	FHBL-MH150W-01	FHBL-MH150W-02	FHBL-MH150W-03	FHBL-MH150W-04
	175W	FHBL-MH175W-01	FHBL-MH175W-02	FHBL-MH175W-03	FHBL-MH175W-04
	200W	FHBL-MH200W-01	FHBL-MH200W-02	FHBL-MH200W-03	FHBL-MH200W-04
	250W	FHBL-MH250W-01	FHBL-MH250W-02	FHBL-MH250W-03	FHBL-MH250W-04

# WHCL

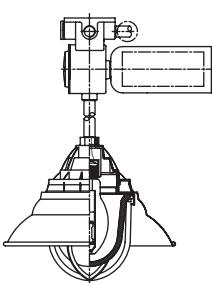
Weather-proof H.I.D Lighting Fixture  
WHCL Series



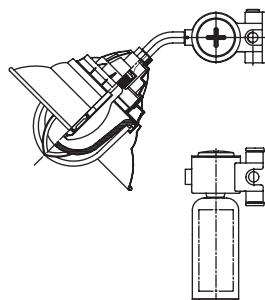
## Drawing



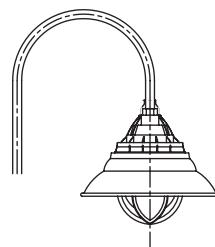
Ceiling Type



Pendant Type



Bracket Type



Stanchion Type

## Standard Material

- Main Body :** Die-Cast Aluminium Alloy
- Glass :** Heat Resistant Hard Glass
- Guard :** Aluminium
- Reflector :** Aluminium Sheet
- Mounting Box :** Die-Cast Aluminium Alloy
- Bolt & Washer :** Stainless Steel

## Standard Color

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

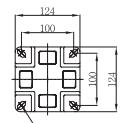
## Technical Data

- Rated Voltage :** AC 110/220V Below
- Rated Wattage :** 250W Below
- Rated Frequency :** 50Hz/60Hz
- Entry Size :** 3/4"(22C), 1"(28C)

## Weight

Mounting Typed	Model No.	Weight
Ceiling	WHCL-01	9.5kg
Pendant	WHCL-02	10kg
Bracket	WHCL-03	10kg
Stanchion	WHCL-04	

## Mounting Box Hole Size



Outward	Hole space
124 × 124	100 × 100

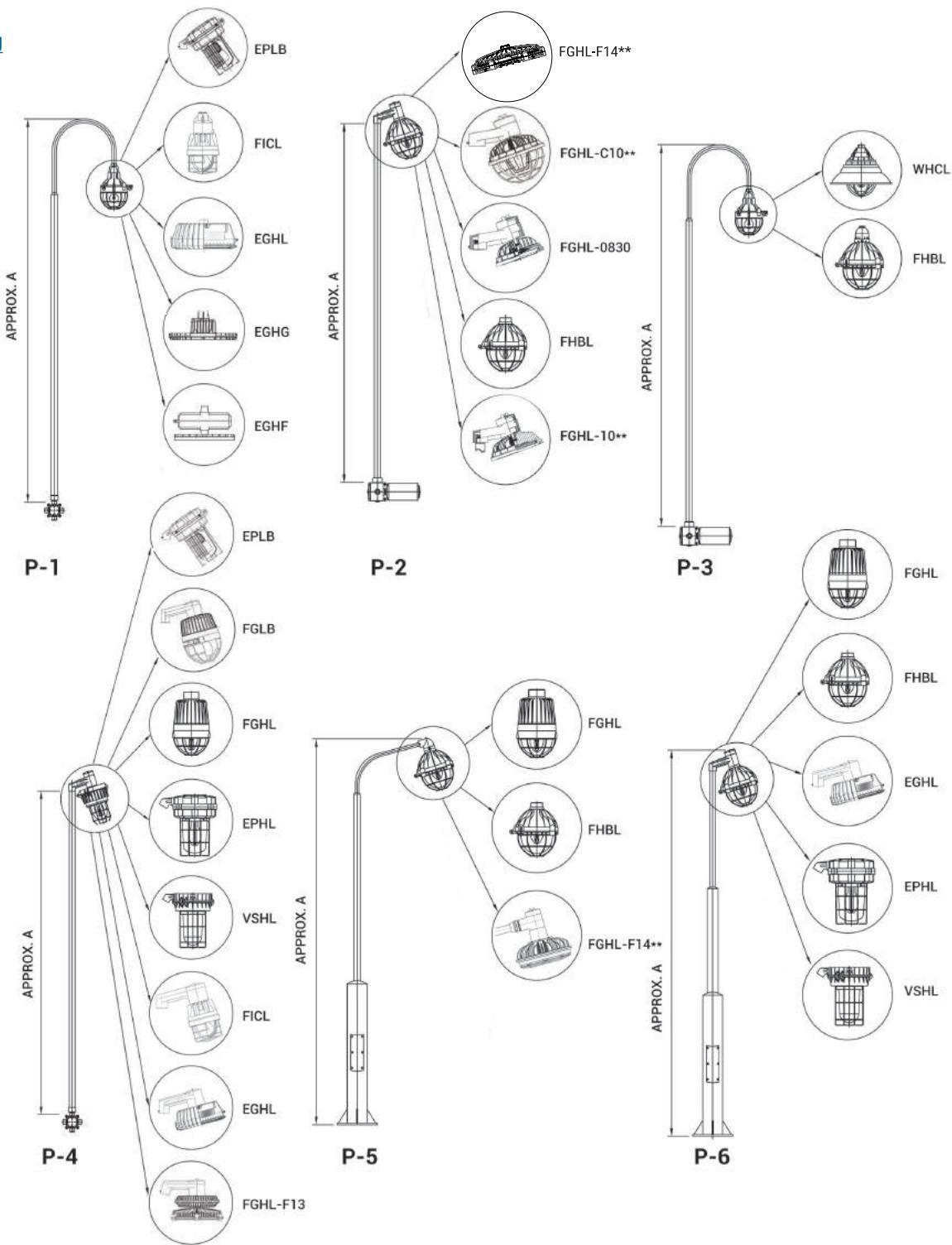
## Ordering Number

Lamp	Watt	Ceiling Type	Pendant Type	Bracket Type	Stanchion Type
High Pressure Sodium	150W	WHCL-NH215-01	WHCL-NH215-02	WHCL-NH215-03	WHCL-NH215-04
	200W	WHCL-NH220-01	WHCL-NH220-02	WHCL-NH220-03	WHCL-NH220-04
	250W	WHCL-NH225-01	WHCL-NH225-02	WHCL-NH225-03	WHCL-NH225-04
Metal Halide	175W	WHCL-MH217-01	WHCL-MH217-02	WHCL-MH217-03	WHCL-MH217-04
	250W	WHCL-MH225-01	WHCL-MH225-02	WHCL-MH225-03	WHCL-MH225-04

# Pole & Stanchion Series

Variation of Pole & Stanchion Type Lighting Fixture

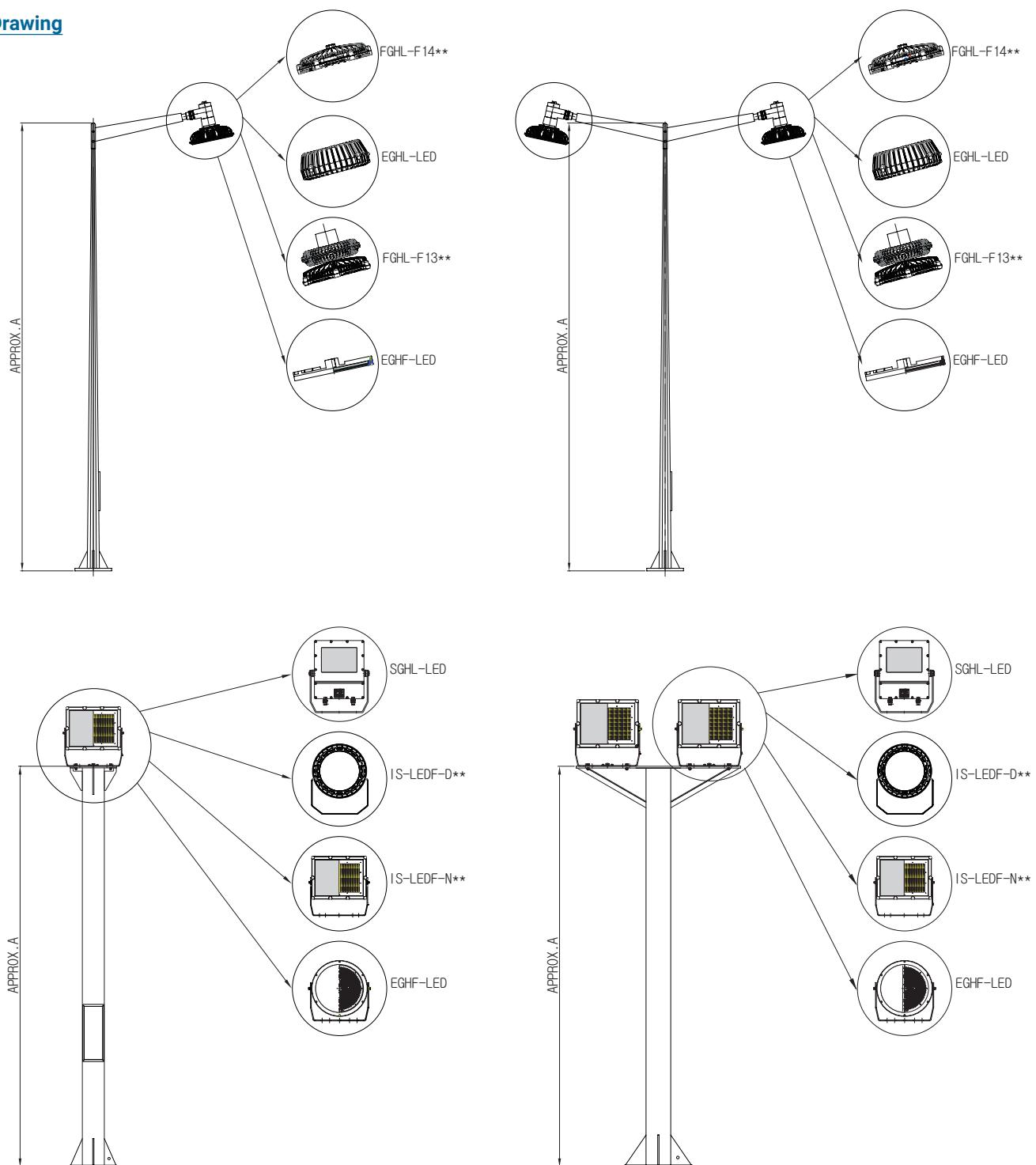
Drawing



# Pole & Stanchion Series

## Variation of Pole & Stanchion Type Lighting Fixture

### Drawing





# C



## CONTROL MANUFACTURES

Explosion-proof Control Station FCS	72
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# FCS

## Explosion-proof Control Station FCS Series for Hazardous Location

### Protection Grade

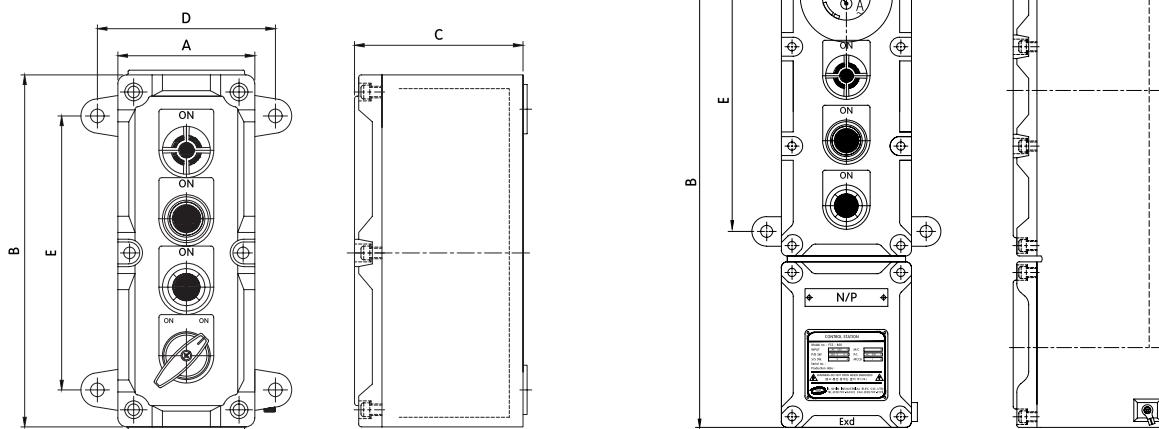
Ex d IIIB T6 for Zone 1·2  
 Ex d IIIB+H2 T6 IP65 for Zone 1·2  
 Ex tD A21 IP65 T85° Zone 21,22



### Specification

- Main Body :** Cast Aluminium Alloy
- Terminal Box :** Cast Aluminium Alloy
- Bolt & Washer :** Stainless Steel
- Unit :** Push Button, Selector Switch  
 Emergency Switch, Pilot Lamp (Color : Red, Green, Yellow)  
 Buzzer, Meter (Ampere, Volt, RPM)  
 Indicator, Frequency

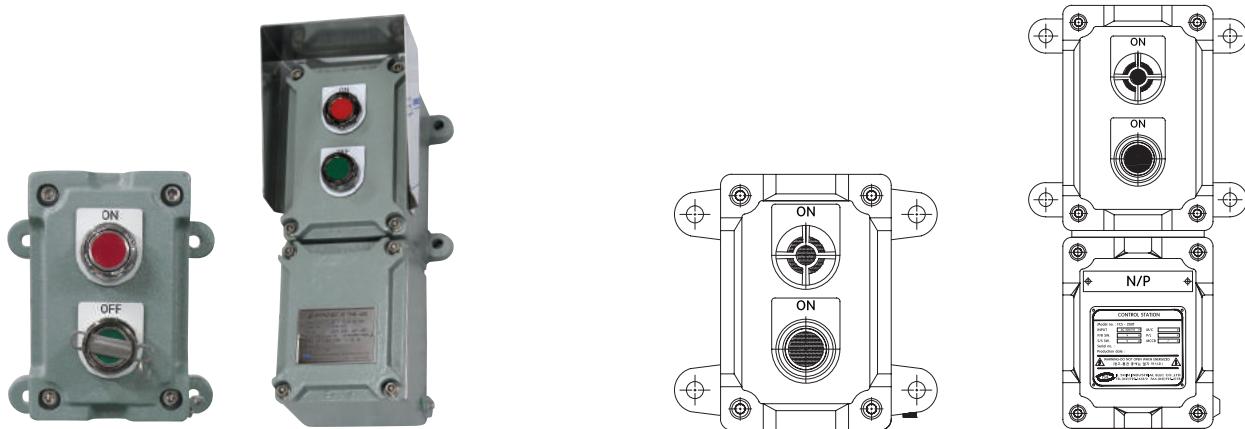
### Drawing



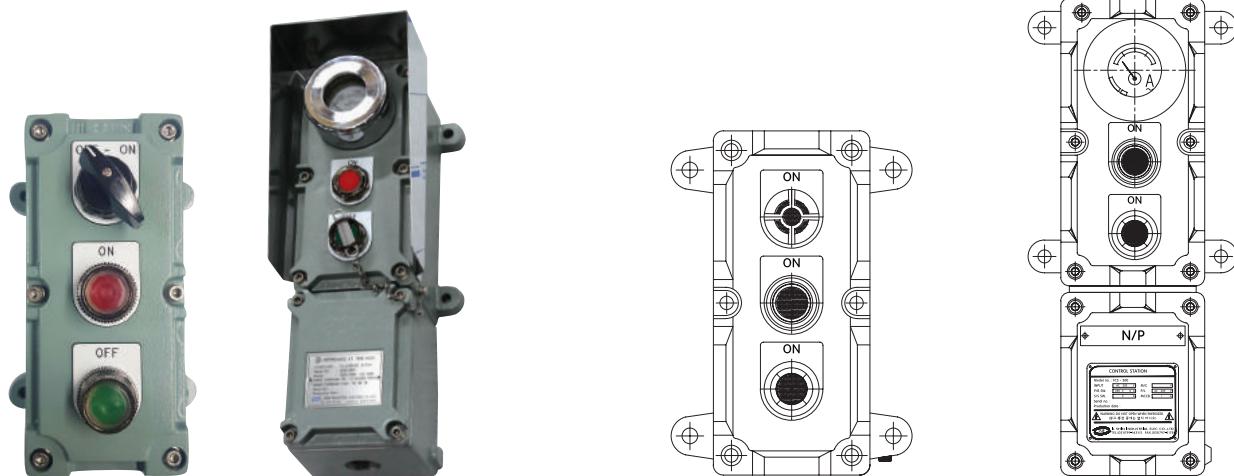
### Ordering Number

Model No.	Width(A)	Height(B)	Depth(C)	Mount(D)	Mount(E)	Certificate
FCS-200	100	150	115	130	105	d
FCS-200T	110	310	120	135	120	d, tD
FCS-300	100	220	115	134	170	d
FCS-300T	110	365	120	135	175	d, tD
FCS-400	100	257	123	130	200	d
FCS-400T	110	415	120	135	225	d, tD
FCS-500T	150	467	130	187	236	d, tD

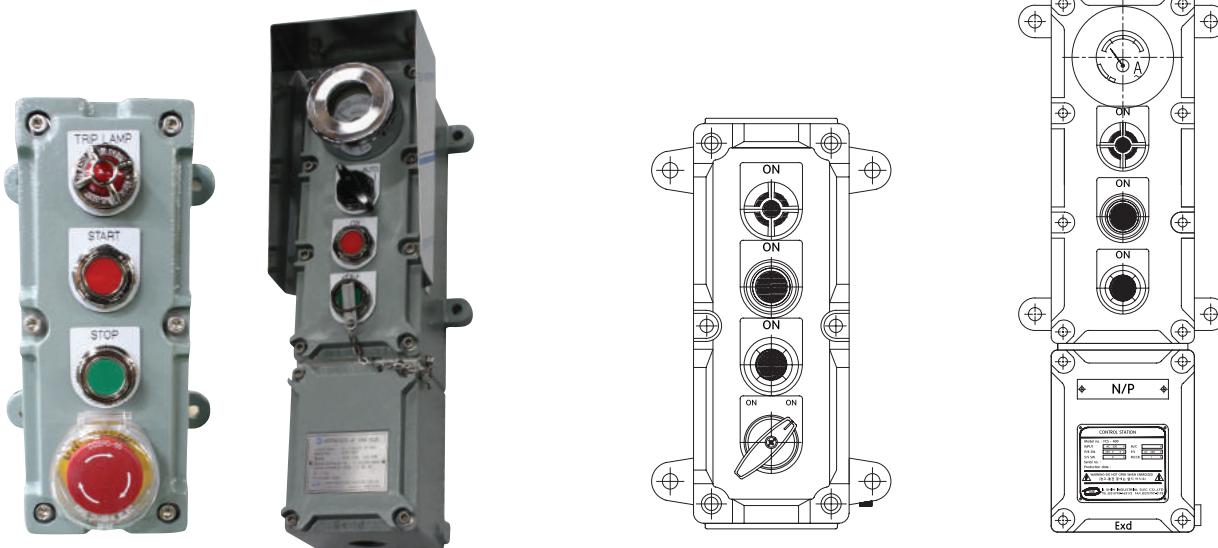
### FCS - 200 / FCS - 200T



### FCS - 300 / FCS - 300T



### FCS - 400 / FCS - 400T



# FPSC-1020

Explosion-proof Control Station  
FPSC Series for Hazardous Location

## Protection Grade

Ex d IIC T6 IP65, Zone 1·2



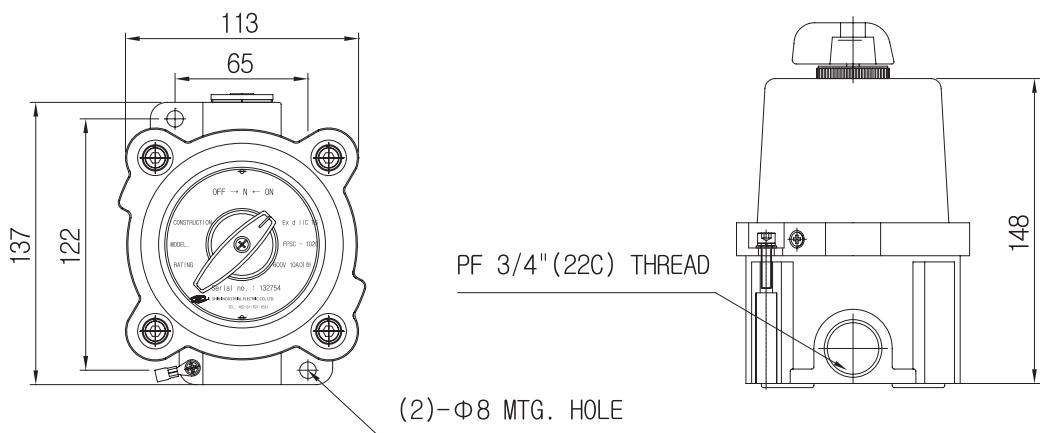
## Specification

- Main Body :** Cast Aluminium Alloy
- Terminal Box :** Cast Aluminium Alloy
- Bolt & Washer :** Stainless Steel
- Unit :** Push Button, Selector Switch  
Emergency Switch, Pilot Lamp (Color : Red, Green, Yellow)

## Technical Data

- Rated Voltage :** AC 600V / AC 250V, 10A | 0.5A
- Ambient temperature :** -20°C~40°C

## Drawing



## Ordering Number

Model No.	Width(A)	Height(B)	Depth(C)	Mount(D)	Mount(E)
FPSC-1020	113	137	148	65	122

# IS-EPCS-\*\*

## Explosion-proof GRP Control Station EPCS Series for Hazardous Location

### Protection Grade

Ex de IIIC T6 for Zone 21,22  
Ex tb IIIC T80 IP66 for Zone 21,22

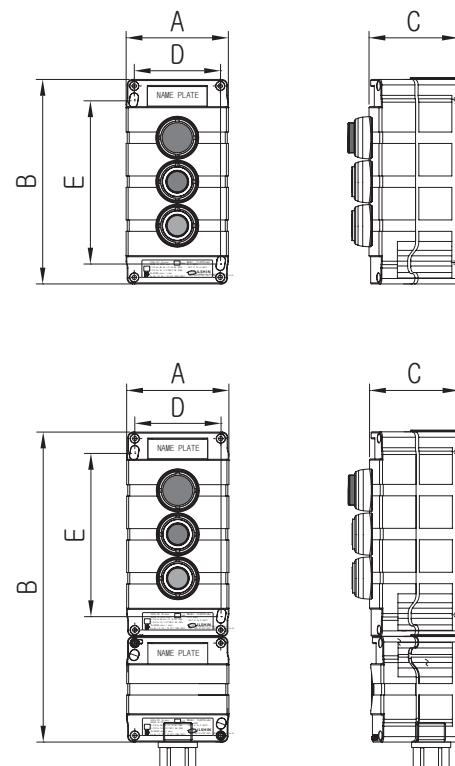
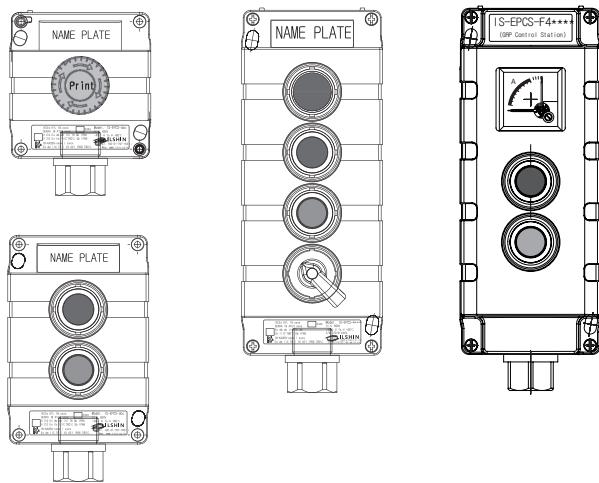


### Specification

- Main Body :** Engineering plastic (GRP)
- Terminal Box :** Engineering plastic (GRP)
- Bolt & Washer :** Stainless Steel
- Unit :** Push Button, Selector Switch  
Emergency Switch, Pilot Lamp (Color : Red, Green, Yellow)
- Rating :** 690V이하, 13A이하 (Switch), 10A이하 (Ammeter)
- Iscom-AE(동작부품)series, MD(모듈장치)series, Ex ammeter,  
Ex accessories 부품들의 조합**

- ISCOM-MD Series** 별도문의
- ISCOM-AE Series** 별도문의

### Drawing



### Ordering Number

Model No.	Width(A)	Height(B)	Depth(C)	Mount(D)	Mount(E)
IS-EPCS-1	94	97	80	80	63
IS-EPCS-1-TB	94	194	80	80	63
IS-EPCS-2	94	139	80	80	105
IS-EPCS-2-TB	94	236	80	80	105
IS-EPCS-3	94	188	80	80	150
IS-EPCS-3-TB	94	285	80	80	150
IS-EPCS-4	94	230	80	80	190
IS-EPCS-4-TB	94	327	80	80	190

# FCS

## Explosion-proof Control Panel FCS Series for Hazardous Location

### Protection Grade

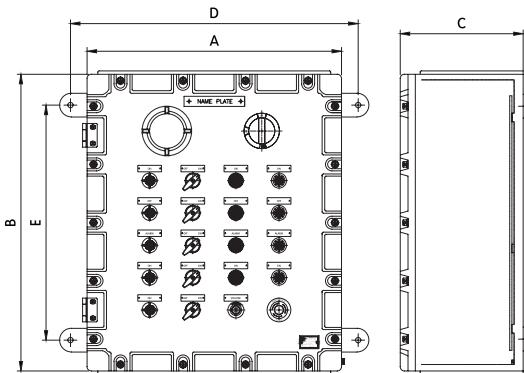
Ex d IIB T6 for Zone 1·2  
Ex d IIB+H2 T6 IP65 for Zone 1·2  
Ex tD A21 IP65 T100°C for Zone 21·22



### Specification

- Body :** Cast Aluminium Alloy
- Cover :** Cast Aluminium Alloy
- Bolt & Washer :** Stainless Steel
- Unit :** Push Button, Selector Switch,  
Emergency Switch, Pilot Lamp (Color : Red, Green, Yellow),  
Buzzer, Meter (Ampere, Volt, RPM),  
Indicator, Frequency

### Drawing



### Ordering Number

Model No.	Width(A)	Height(B)	Depth(C)	Mount(D)	Mount(E)	Bakelite Plate	Certificate
FCS-550	180	225	133	210	160	130 x 170	d
FCS-600	220	250	161	260	170	170 x 175	d
FCS-700	220	350	166	260	270	165 x 285	d
FCS-800	300	400	210	352	295	230 x 330	d, tD
FCS-850	400	400	260	455	340	320 x 320	d
FCS-900	300	500	220	355	400	220 x 420	d
FCS-1000	400	500	220	455	400	320 x 420	d
FCS-1100	400	600	230	450	495	330 x 520	d
FCS-1150	400	700	260	450	575	300 x 590	d
FCS-1200	600	700	285	667	545	490 x 590	d
FCS-1250	500	800	245	555	705	410 x 700	d
FCS-1300	780	880	280	570	884	590 x 690	d, tD
FCS-1400	800	1000	370	880	880	670 x 870	tD
FCS-1500B, D, N	980	1180	352.5	780	1180	800 x 1000	d

# FECB

## Explosion-proof PDP Panel FECB Series for Hazardous Location

### Protection Grade

Ex d IIIB+H2 T6 for Zone 1·2

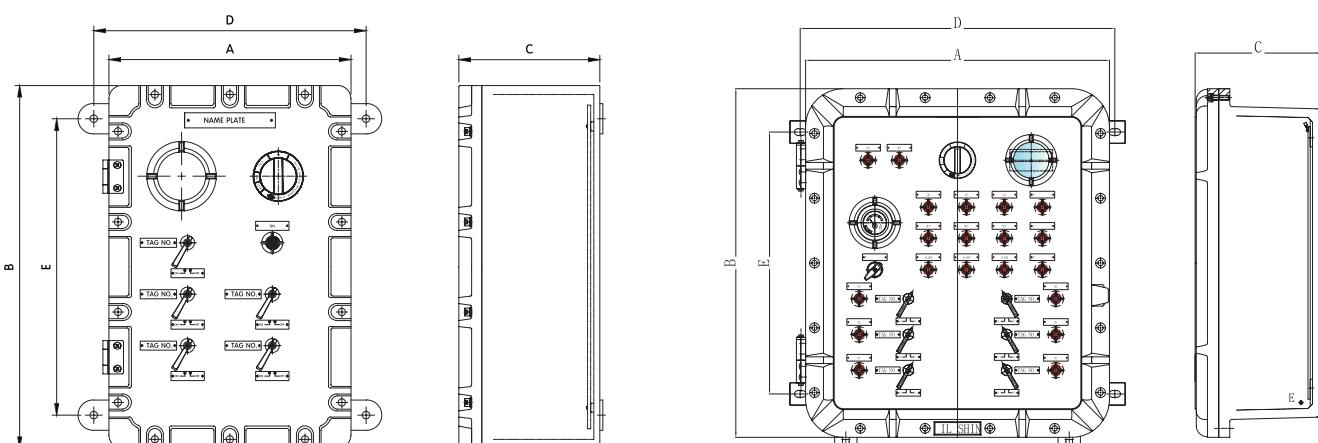
Ex d IIIB T6



### Specification

- Body :** Cast Aluminium Alloy
- Cover :** Cast Aluminium Alloy
- Bolt & Nut :** Stainless Steel

### Drawing



### Ordering Number

Model No.	Width(A)	Height(B)	Depth(C)	Mount(D)	Mount(E)	Bakelite Plate
FECB-700	220	350	165	260	270	165 × 285
FECB-800	300	400	220	352	295	230 × 330
FECB-1000	400	500	230	455	400	320 × 420
FECB-1100	400	600	230	450	495	330 × 520
FECB-1150	500	600	250	550	500	420 × 520
FECB-1200 B.N	680	780	280	704	586	510 × 610
FECB-1250	500	800	243	555	705	420 × 720
FECB-1300	780	880	280	590	895	590 × 690

# FCI

## Explosion-proof Indicator Panel FCI series for Hazardous Location

### Protection Grade

Ex d II B+H2 T6 IP65 For Zone 1.2



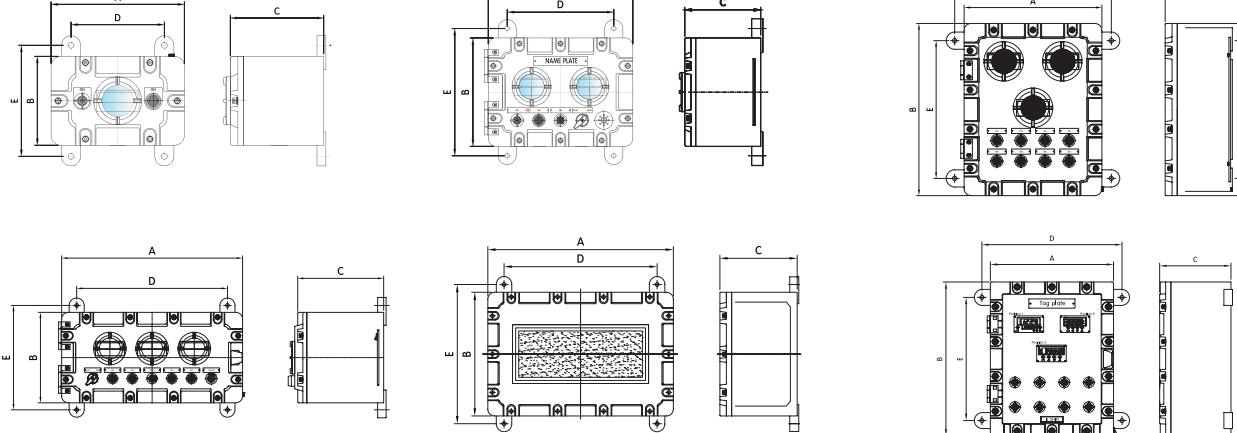
### Standard Material

- Body :** Cast Aluminium Alloy
- Cover :** Cast Aluminium Alloy
- Indicate Glass :** Heat Resistant Hard Glass
- Bolt & Washer :** Stainless Steel
- Unit :** PB,S/S,EM,PL(Red,Green,Yellow).BZ  
Indicator, Frequency

### Standard Color

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

### Drawing



### Dimension(mm)

Model No.	Width(A)	Height(B)	Depth(C)	Mount(D)	Mount(E)
FCI-1*	300	200	215	210	240
FCI-2**	400	300	210	295	352
FCI-4****	400	500	210	455	400
FCI-600	220	250	160	260	170
FCI-3020	300	200	210	210	250
FCI-3040	300	400	210	346	300
FCI-4030	400	300	210	295	352
FCI-5040	400	500	210	455	400
FCI-5040D	500	400	230	400	450
FCI-6030	600	300	285	500	346
FCI-6040	600	400	250	495	450

**LIU**

## Flame-proof Indicator Panel LIU BOX for Hazardous Location

### Protection Grade

Ex d IIIB+H2 T6 IP65 For Zone 1.2



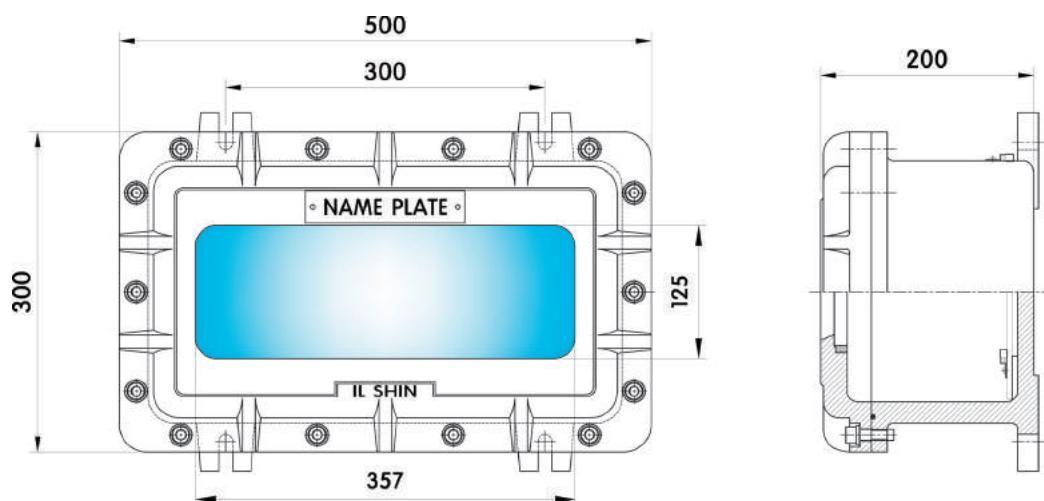
### Specification

- **Body :** Cast Aluminium Alloy
- **Cover :** Cast Aluminium Alloy
- **Indicate Glass :** Heat Resistant Hard Glass
- **Bolt & Nut :** Stainless Steel

### Standard Color

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

### Drawing



### Dimension(mm)

Model No.	Width(A)	Height(B)	Depth(C)	Mount(D)	Mount(E)	Bakelite Plate
LIU	500	300	200	300	300	360 × 180

# FBC-1000 & FBC-1000N

Explosion-proof Indicator Panel  
FBC-1000 & FBC-1000N for Hazardous Location

## Protection Grade

Ex d IIIB+H2 T6 For Zone 1.2



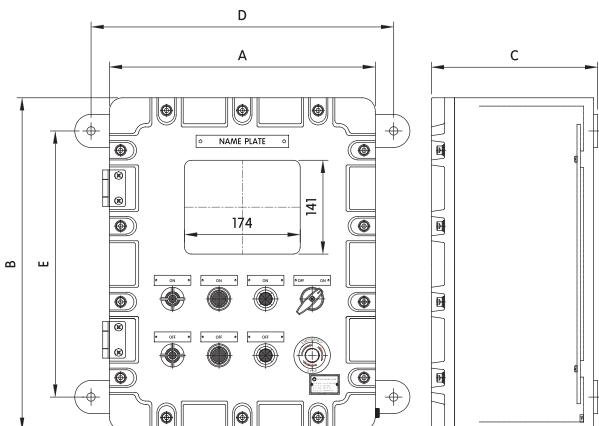
## Specification

- Main Body :** Cast Aluminium Alloy
- Cover :** Cast Aluminium Alloy
- Indicate Glass :** Heat Resistant Hard Glass
- Bolt & Washer :** Stainless Steel
- Unit :** PB,S/S,EM,PL(Red,Green,Yellow),BZ Indicator

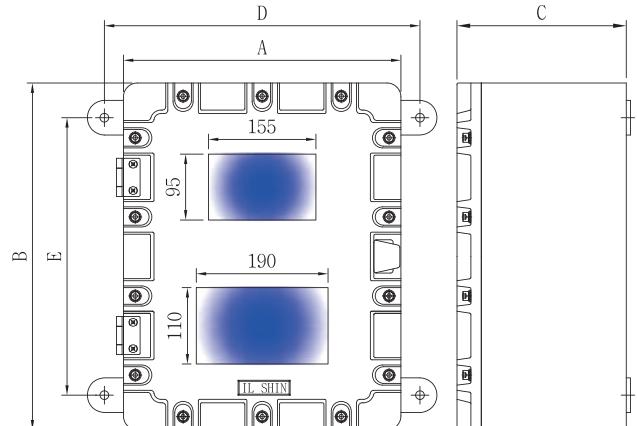
## Standard Color

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

## Drawing



FBC-1000



FBC-1000N

## Dimension(mm)

Model No.	Width(A)	Height(B)	Depth(C)	Mount(D)	Mount(E)
FBC-1000	400	500	250	455	400
FBC-1000N	400	500	250	455	400
FMB-5452	540	500	455		

# CSLP

## Explosion-proof Power Distribution Panel CSLP Series for Hazardous Location

### Protection Grade

Ex d IIIC T6 for Zone 1·2



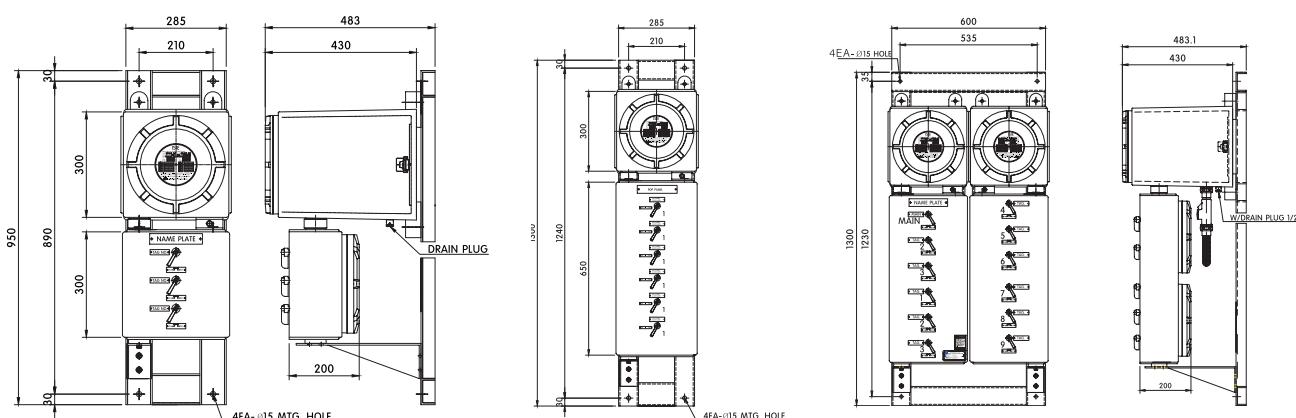
### Specification

- **Body :** Cast Aluminium Alloy
- **Cover :** Cast Aluminium Alloy
- **Terminal Box :** Cast Aluminium Alloy
- **Stanchion :** Steel
- Rotate the bottom of the maintenance work.
- Cover to rotate the structure to the way the threads.

### Standard Color

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

### Drawing



### Dimension(mm)

Model No.	Width(A)	Height(B)	Depth(C)	Mount(D)	Mount(E)
CSLP 3030	300	300 + 300	430	200	890
CSLP 3065	300	300 + 671	430	200	1230

# CSTB

## Flame-proof Control Panel CSTB Series for Hazardous Location

### Protection Grade

Ex d IIC T6 for Zone 1·2



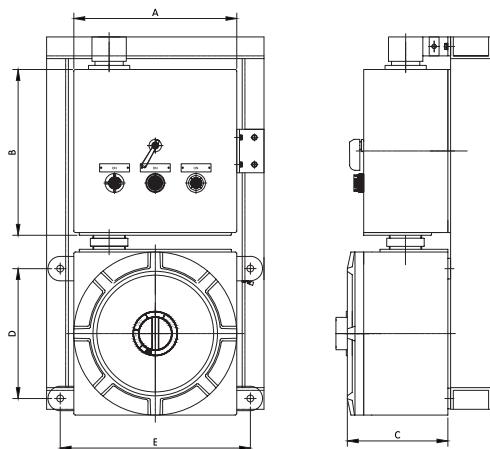
### Specification

- **Body :** Cast Aluminium Alloy
- **Cover :** Cast Aluminium Alloy
- **Bolt & Nut :** Stainless Steel
- Rotate the bottom of the maintenance work.
- Cover to rotate the structure to the way the threads.

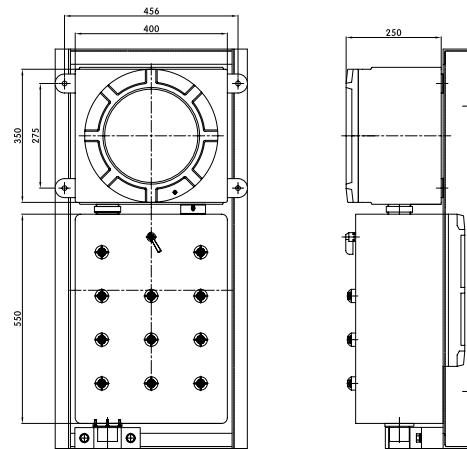
### Standard Color

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

### Drawing



CSTB-3030



CSTB-4055(신규)

### Dimension(mm)

Model No.	Width(A)	Height(B)	Depth(C)	Mount(D)	Mount(E)
CSTB-3030	300	300	185	360	456
CSTB-3540	300	350	288	458	275
CSTB-4055	400	550	285	455	450

# IS-LCP-6070\*

Explosion-proof Control Panel  
FCS Series for Hazardous Location

## Protection Grade

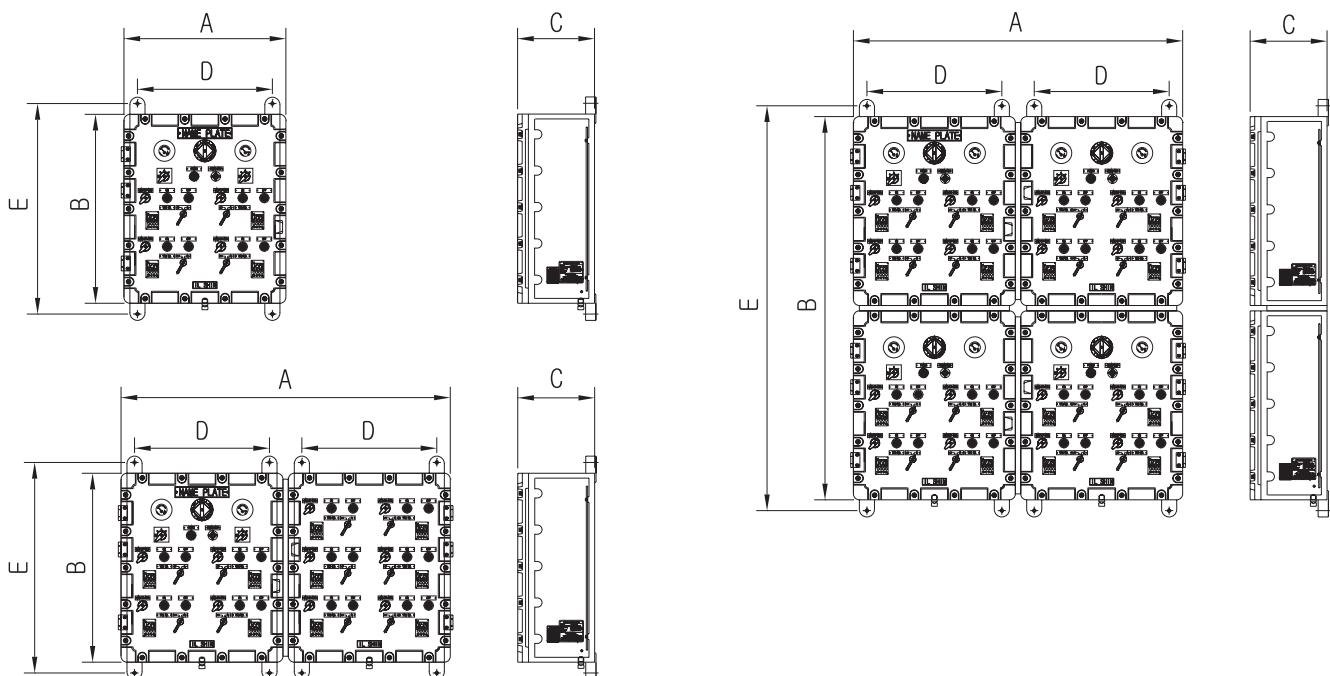
Ex d IIB + H2 T6 IP66 for Zone 1·2



## Specification

- **Main Body :** Cast Aluminium Alloy
- **Terminal Box :** Cast Aluminium Alloy
- **Bolt & Washer :** Stainless Steel
- **Unit :** Push Button, Selector Switch,  
Emergency Switch, Pilot Lamp (Color : Red, Green, Yellow),  
Buzzer, Meter (Ampere, Volt, RPM),  
Indicator, Frequency

## Drawing



## Ordering Number

Model No.	Width(A)	Height(B)	Depth(C)	Mount(D)	Mount(E)	Bakelite Plate
IS-LCP-6070	600	700	285	500	780	490×590

# EPCP

Explosion-proof PDP panel Series  
EPCP Series for Hazardous Location

## Protection Grade

Ex de IIIB+H2 T6 IP66 for Zone 1·2



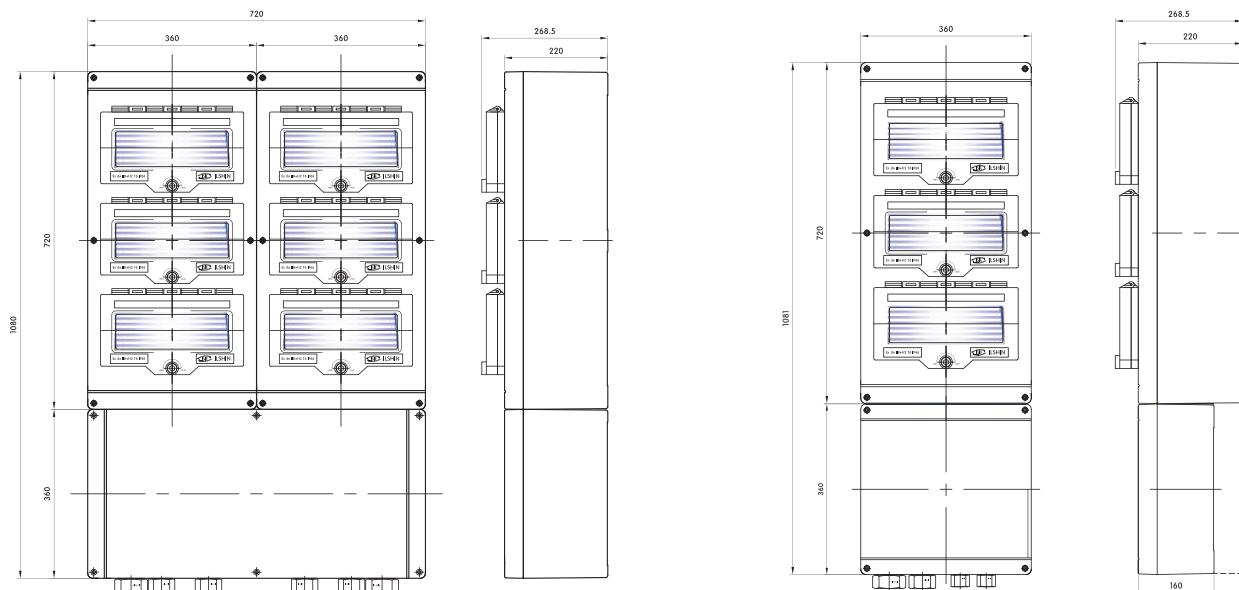
## Specification

- Main Body :** Engineering Plastic
- Rated Voltage :** AC 600V Max
- Rated Current :** 50A, 100A, 200A, 225A
- Branch circuit :** 8CKT, 16CKT, 20CKT & more

## Standard Color

- If you want other color, contact us please.

## Drawing



# WPCP

Weather-proof PDP panel Series  
WPCP Series for General Location

**Protection Grade**  
IP66



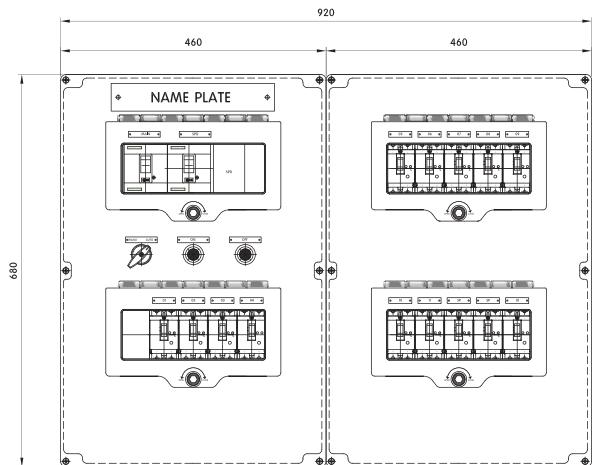
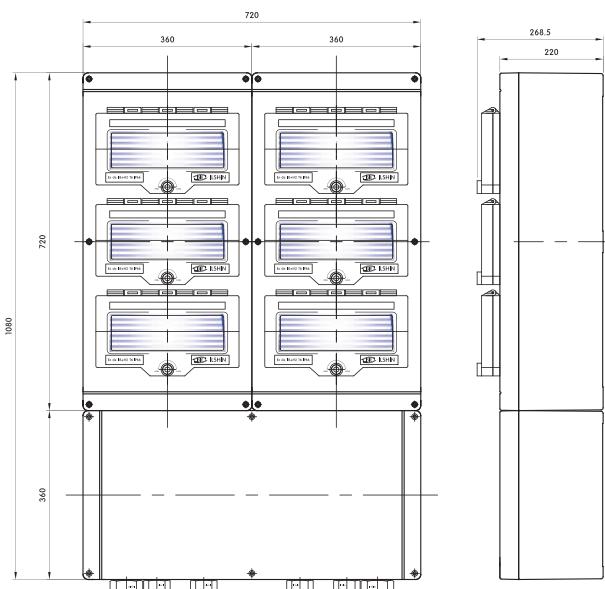
## Specification

- **Main Body :** Engineering Plastic
- **Rated Voltage :** AC 600V Max
- **Rated Current :** 50A , 100A , 200A, 225A
- **Branch circuit :** 8CKT, 16CKT, 20CKT & more

## Standard Color

- If you want other color, contact us please.

## Drawing



# Component Series

## Explosion-proof Unit Series

### Protection Grade

Ex d IIC for Zone 1·2



### Selector Switch

- **Model :** ISCAM
- **Rated Voltage :** AC 220V BELOW
- **Rated Current :** 6A BELOW

### ISCAM

IS	CAM-	( )	
IL SHIN	SELECTOR SWITCH (CAM TYPE)	(2103)	2단 1a 1b
		(2104)	2단 2a
		(3210)	3단 3a
		3103-AR	RETURN TO CENTER



### Push Button Switch

- **Model :** ISPB
- **Rated Voltage :** AC 220V BELOW
- **Rated Current :** 6A BELOW

### ISPB-11R

IS	PB-	( )( )	
IL SHIN	PUSH BUTTON	1a 1b	(1)(1) R-RED
		2a 2b	(2)(2) G-GREEN
		2a	(2)(0) Y-YELLOW
		2b	(0)(2) W-WHITE
			B-BLACK



### Emergency Switch

- **Model :** ISEM
- **Rated Voltage :** AC 220V BELOW
- **Rated Current :** 6A BELOW

### ISEM-PT-11

ISEM	PT-	( )( )	
IL SHIN EMERGENCY SWITCH	PUSH LOCK TURN RESET	1a 1b	(1)(1)
		2a 2b	(2)(2)
		2a	(2)(0)
		2b	



### Volume

- **Model :** ISVOL
- **Rated Voltage :** AC 220V BELOW
- **Rated Wattage :** 2W BELOW

### ISVOL-1-1

ISVOL-	( )	( )
IL SHIN VOLUME SWITCH	1kΩ(1) 10kΩ(10)	1TURN(1) 10TURN(10)

# Component Series

## Explosion-proof Unit Series



### Protection Grade

Ex d IIC for Zone 1·2



### Pilot Lamp

- Model : ISPL
- Rated Voltage : AC 220V BELOW/ DC24V
- Rated Wattage : 1W BELOW

### ISPL-D 24W

IS	PL-	( )	( )	( )
IL SHIN	PILOT LAMP	DC-(D)	24-DC24V	R-RED
		AC-(A)	11-110V	G-GREEN
			22-220V	Y-YELLOW
				W-WHITE



### Push Button Lamp Switch

- Model : ISPBL
- Rated Voltage : AC 220V BELOW/ DC24V
- Rated Current : 6A BELOW
- Rated Wattage : 1W BELOW

### ISPBL-D 24R

IS	PBL-	( )	( )	( )
IL SHIN	PUSH BUTTON ILLUMINATED	DC-(D)	24-DC24V	R-RED
		AC-(A)	11-110V	G-GREEN
			22-220V	Y-YELLOW



### Buzzer

- Model : ISBZ
- Rated Voltage : AC 220V BELOW/ DC24V
- Rated Current : 8A BELOW
- Color : SILVER
- 90db/1M

### ISBZ-A 22

IS	BZ-	( )	( )
IL SHIN	BUZZER	DC-(D)	24-DC24V
		AC-(A)	11-110V
			22-220V



# Component Series

## Explosion-proof Unit Series

### Protection Grade

Ex de IIIC Gb

Ex de ib mb IIIC Gb



### Ex Emergency Switch

- Model : ISCom-EM(a,b)
- Rated Voltage :
- Rated Current :

### Type Designation(\*-Option : Protection Cover)

- a-Contact Type(0~7) : 1a1b / 2a / 2b / 2a2b / 4a / 4b / 1a3b / 3a1b
- b-Module Type(6~9) : Panel / Rail / Lead Cable / Module Type A

### Operating Handle Type

- Push Locked (Turn to Release) / (Pull to Release)
- Push to next Auto Release)
- Push Locked (Use Key to Release)



### Ex Push Button Switch

- Model : ISCom-PL(a,b,c)
- Rated Voltage :
- Rated Current :

### Type Designation

- a - Rating : 1 - 24 to 36Vdc  
2 - 220 to 380Vac  
3 - 110Vac/dc  
4 - 220Vac/dc  
5 - 12 to 240Vac 12 to 60Vdc (Standard)
- b-Lamp Color : Red / Green / Yellow / Blue / White / Black
- c-Module Type(6~8) : Panel / Rail / Lead Cable
- a-Contact Type(0~7) : 1a1b / 2a / 2b / 2a2b / 4a / 4b / 1a3b / 3a1b



### Ex Push Button

- Model : ISCom-PB(a,b,c)
- Rated Voltage :
- Rated Current :

### Type Designation

- a-Contact Type(0~7) : 1a1b / 2a / 2b / 2a2b / 4a / 4b / 1a3b / 3a1b
- b-Button Type(1~9) : Push Button / Double Button / Mushroom Head Twist-to-Release / Mushroom Head Push Button / Mushroom Head Pull -to-Release / Mushroom Head key release / key Locking Release Push Button / key Rotary Selector Head / Rectangle
- c-Module Type(6~8) : Panel / Rail / Lead Cable
- x-Lamp Color : Red / Green / Yellow / Blue / White / Black



### Ex Illuminated Push Button

- Model : ISCom-IPB(a,b,c)
- Rated Voltage :
- Rated Wattage :

### Type Designation(\*-Option : Protection Cover)

- b-Lamp Color : Red / Green / Yellow / Blue / White / Black
- a-Contact Type(3~4) : 1b / 1a
- c-Module Type(6~8) : Panel / Rail / Lead Cable
- x-Rading Voltage : A-12 to 250Vac, 12 to 70Vac, B-24Vac/dc C-110Vac/dc, D-220Vac/dc



# Component Series

## Explosion-proof Unit Series

### Protection Grade

Ex de II C Gb

Ex de ib mb II C Gb



### Ex Buzzer

- **Model :** ISCom-BZ(a,b,C)
- **Rated Voltage :**
- **Rated Current :**

### Type Designation(\*-Option : Protection Cover)

- **a - Rating Voltage :** 1 - 110Vac 50/60Hz  
2 - 220Vac 50/60Hz  
3 - 24Vdc
- **b-Order Made(7,8) :** LED Flash and Buzzer - 단속음(Red Cover)  
LED Flash and Buzzer - 연속음(Red Cover)
- **c-Module Type(6,8) :** Panel / Lead Cable



### Ex Rotary Selector Button

#### Switch

- **Model :** ISCom-RS(a,b,c)
- **Rated Voltage :**
- **Rated Current :**

### Type Designation

- **a - Handle Type(K,S) :** K(Φ39) / S (Φ60)
- **b-Contact Type(0~7) :** 1a1b / 2a / 2b / 2a2b / 4a / 4b / 1a3b / 3a1b
- **c-Module Type(6~8) :** Panel / Rail / Lead Cable
- **X-Handle Label**
- **Standard :** O - I / I - II / O - I - II / I - O - II / O - . - O
- **Order Made :** On - Off / Start - Stop / Open - Close Up - Stop - Down Etc



### Ex PotentionMeter

- **Model :** ISCom-PM(a,b,c)
- **Rated Voltage :**
- **Rated Current :**

### Type Designation

- **a-Resistance(1,2,5,10) :** 1KΩ / 2KΩ / 2KΩ / 10 KΩ
- **b-Power(1) :** 1Watt
- **Module Type(6~8) :** Panel / Rail / Lead Cable
- **x-Lamp Color :** Red / Green / Yellow / Blue / White / Black

#### **X-Standard-1Turn**

(\*)**Order Made 10Turn**

# ISTB Series

## Increased Safety Terminal Block

### Protection Grade

Ex e II



#### \* ISTB-04, 27A max : Acceptable wires\_mm<sup>2</sup>

- Liner / Stranded : 0.5 ~ 4.0
- The use of twisted / crimping terminals : 0.5~4.0 / 0.5~4.0
- Screw the proper torque : 0.5~1.0 Nm, M3

#### \* The same applies the standard two conductor cross-sectional area :

- Liner / Stranded\_mm<sup>2</sup> : 0.5~2.5
- The use of twisted / crimping terminais\_mm<sup>2</sup> : 0.5~2.5 / 0.5~6.0



#### \* ISTB-6L, 35A max : Acceptable wires\_mm<sup>2</sup>

- Terminal lug use (Ring type)
- The use of twisted / crimping terminals : 0.5~6.0 / 0.5~6.0
- Screw the proper torque : 4.0~5.0 Nm, M4

#### \* The same applies the standard two conductor cross- sectional area :

- Liner / Stranded\_mm<sup>2</sup> : 0.5~4.0
- The use of twisted / crimping terminals\_mm<sup>2</sup> : 0.5~4.0 / 0.5~4.0



#### DATA SHEET

- Material : PA-66
- Insulation material : I nflamability class in acc. with UL94. V-0
- Internal parts : Clamp\_Steel & Zinc electronic plating.  
Connection Bar\_Brass & Tin plating.
- Service Temp' -20°C ~ +100°C

#### Ordering Number



Model		
Part Name	ISTB-04(PIN TYPE)	ISTB-6L(LUG TYPE)
Terminal Block	27A Below ISTB-04 TB	35A Below ISTB-6L TB
Stopper	ISTB-04 ST	ISTB-6L ST
End Plate	ISTB-04 EP	ISTB-6L EP
Din Rail	ISTB-04 DR	ISTB-6L DR

# FXGC-A-210

Explosion-proof Static elimination  
FXGC Series for Hazardous Location

## Protection Grade

Ex d ib IIIB+H2 T6 IP65 Zone 1·2



## Product Specification

- Installation Height :** Not higher than 1,000m above sea level
- Installation Location :** Indoor or Outdoor
- Item Name :** Ground Safety System
- Model Name :** FXGC-A-210
- Explosion-Proof Structure :** Ex d ib IIIB+H2 T6 IP65
- Product Size :** (W)220mm x (H)350mm x (D) 200mm
- Weight :** 18.2Kg

• **Container Material :** Aluminum Alloy

• **Application Standard :** Ministry of Employment and Labor Notification No. 2010-36 (2010.12.24)

• **Installation Criteria :** KS C IEC 60079-14

• **Rating :** AC 110/220V

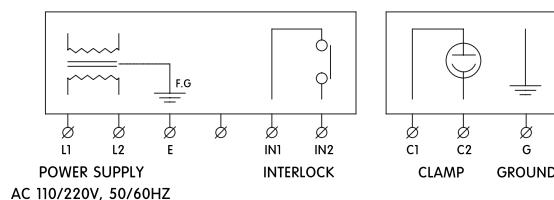
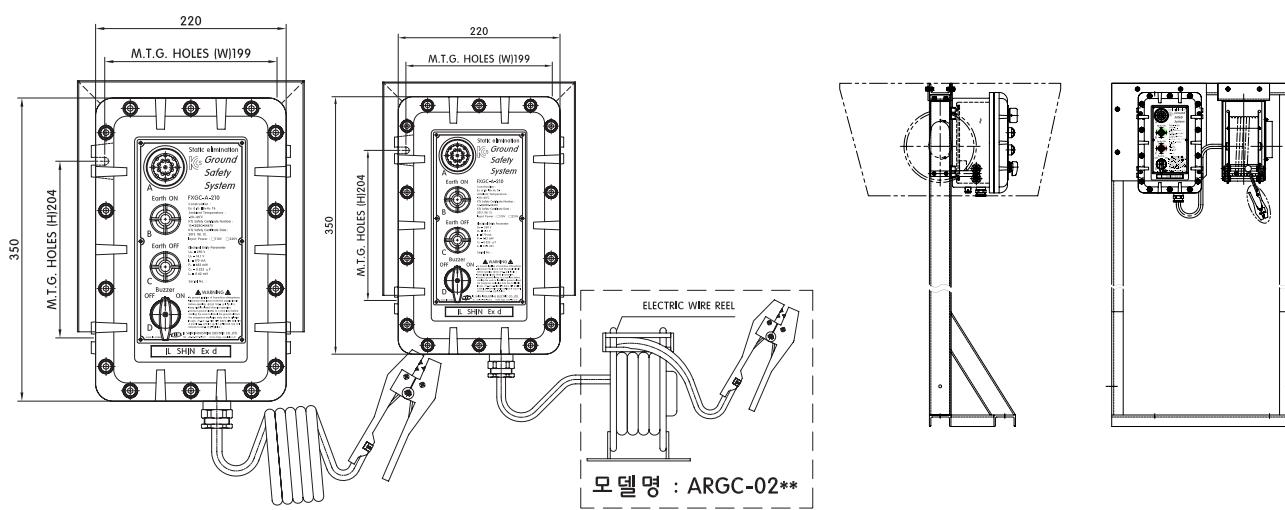
• **Grounding Type :** "O"-LUG(6), Overall wiring

UM=250V, Uo=16.1V

Io=170mA, Po=682mW

Co=0.223pF, Lo=0.62mH

## Drawing



## 위험 지역( Hazardous Area)

### Hazardous Area

ex) FXGC-A-210 use and Installation ( KS C IEC 60079-14)

Construction : Ex d ib IIB+H2 T6

Ambient Temperature : -20~40°C

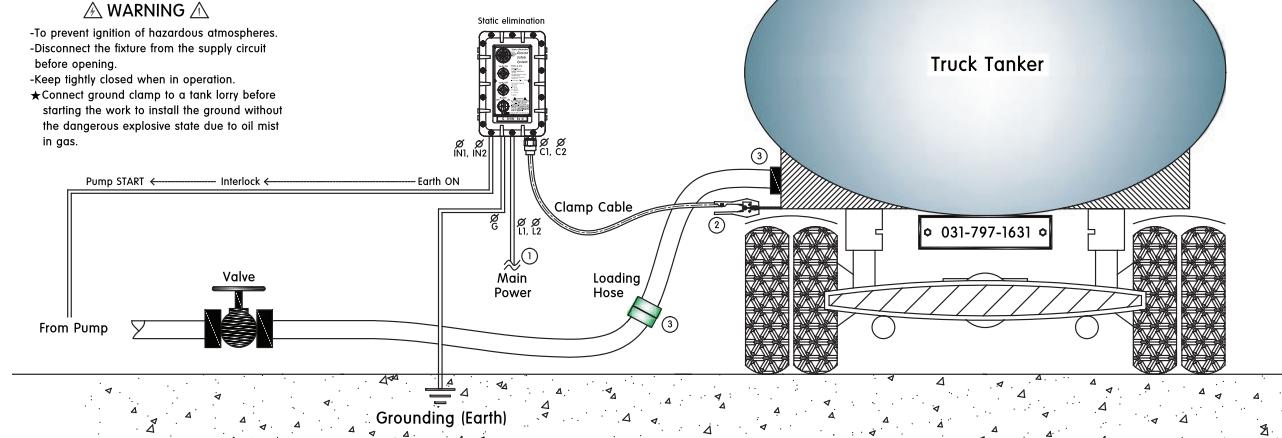
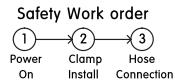
#### ⚠ WARNING ⚠

-To prevent ignition of hazardous atmospheres.

-Disconnect the fixture from the supply circuit before opening.

-Keep tightly closed when in operation.

★ Connect ground clamp to a tank lorry before starting the work to install the ground without the dangerous explosive state due to oil mist in gas.



### 제품사용목적(Specification)

FXGC-A-210은 위험한 지역 내에서 석유류나 가스류를 운반차량에 옮겨 싣거나 차량에서 지상용기에 옮길 때 발생하는 정전기 축적되는 일을 확실하게 억제하여 정전기로 의한 스파크 발생을 원칙적으로 방지하도록 설계되어 있는 GROUND SAFETY SYSTEM(접지안전시스템)이다.

유류나 가스를 이동 시킬 때 일어나는 정전기에 대한 설명은 다음과 같다.

정전기 발생은 유류나 가스 이동 시 분자들간의 마찰에 의하여 일어나고 이때 하전된 분자들은 쉽게 지상으로 방전되지 못하고 계속 충적되는데 이는 유류나 가스가 전기적으로 부도체이기 때문이다.

그리하여 하전된 유류나 가스가 운반차량이나 지상용기에 옮겨질 때 용기자체도 정전기로 하전 되게 된다. 만일 이때 용기가 적절히 접지 되어있지 않으면 용기에 도체로 전기가 흐르는 경우가 발생하고 이때 필연적으로 스파크가 발생한다 만약 이때 주위에 위험 분위기가 조성되어 있다면 폭발의 위험이 생긴다. 이와같은 사태는 사전에 어떠한 소리, 불빛, 냄새, 느낌 없이 일어난다. 이를 미연에 방지하기 위하여 유류나 가스 이동 시는 항상 접지 상태를 감시하는 기구가 필요하고 이를 위하여 GROUND SAFETY SYSTEM(접지안전시스템)을 사용한다.

### 제품구조( Structure)

GROUND SAFETY SYSTEM은 본질안전으로 설계된 접지탐지장치와 접지지시램프, 펌프 또는 밸브 작동을 통제하는 인터록 접점으로 구성되어 있으며 이들 기기들은 ENGINEERING PLASTIC BOX에 EPOXY-MOLDING 되고 MOLDING BOX와 TERMINAL 접점은 내압 방폭 상자 안에 배치되어 있으므로 방폭 안전을 도모하도록 되어 있다.

### 금지사항 (Prohibitions)

- 통전 중 개방을 금지합니다
- 부속품 교환시 전원을 차단하고 안전을 유지한 후 교환 하십시오.
- 전원 인가 전에 반드시 점검 및 조정사항을 확인 하십시오.
- 본제품은 자격이 있는 전문 전기 유자격에 의해 시공 및 점검, 검사를 하십시오.
- 가스의 유증기로 인해 폭발성 위험 분위기가 조성되지 않은 상태에서 접지가 설치되도록 작업 전에 GROUND CLAMP를 탱크로리에 연결 하십시오.

# FTSC

## Explosion-proof Flame-proof Tumbler Switch FTSC Series for Hazardous Location

### Protection Grade

Ex d II C T6 IP65 for Zone 1·2  
Ex tD A21 IP65 T80°C



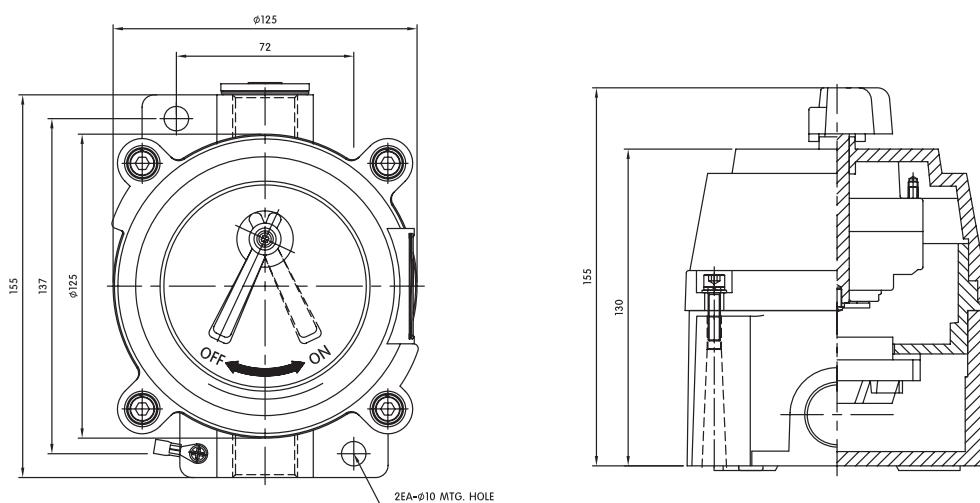
### Specification

- **Main Body :** Die-Cast Aluminium Alloy
- **Rated Voltage :** Less than AC250V
- **Rated Current :** 20A

### Standard Color

- Munsell no. 7.5BG 6/1.5  
If you want other color, contact us please.

### Drawing



# IS-EPCS-FL

Ex Engineering Plastic Control Station  
Tumbler Switch Series for Hazardous Location

## Protection Grade

Ex d e IIC T6 IP66 for zone 1, 2  
Ex tb IIIC T80°C IP66 for zone 21, 22

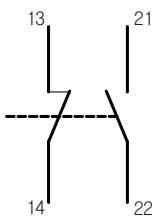


## Specification

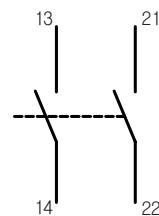
- Main Body : Engineering plastic (GRP)
- Bolt & washer : Stainless Steel
- Cable Entry(Socket) : Standard : Brass
- Thread : PF(16C~28C), NPT(1/2"~1"), Metric(M16~M32)
- Rating : 690V 0|하, 13A 0|하
- Tamb :-40°C ~ +60°

## Terminal assignment

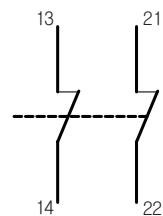
< 1 NO and 1 NC >



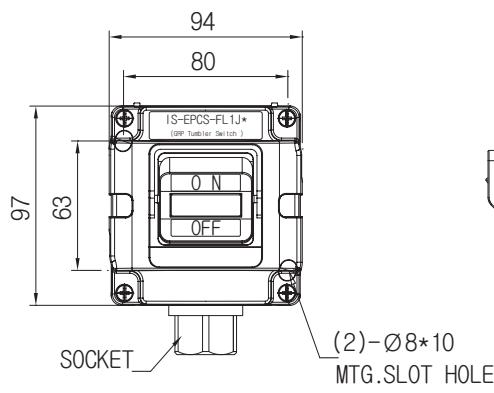
< 2 NO >



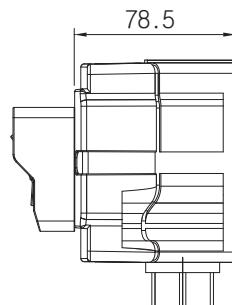
< 2 NC >



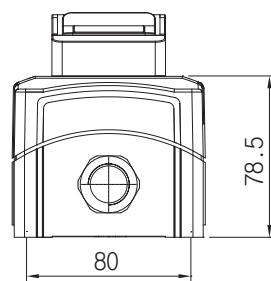
## Drawing



FRONT



SIDE



BOTTOM

# FRP

## Explosion-proof Receptacle and Plug FRP Series for Hazardous Location

### Protection Grade

Ex d IIIB+H2 T6 IP65 for Zone 1·2

Ex de IIIB+H2 T6

Ex tD A21 IP65 T80°C



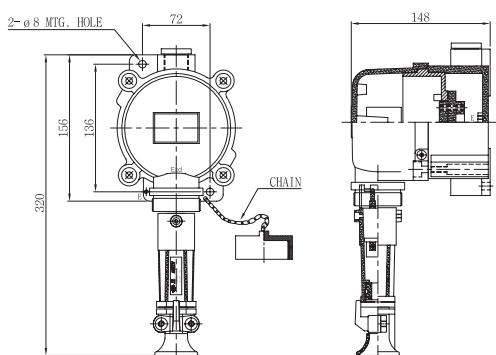
### Specification

- Main Body :** Cast Aluminium Alloy
- Plug Casing :** Cast Aluminium Alloy
- Terminal Box :** Cast Aluminium Alloy
- Bolt & Nut :** Stainless Steel

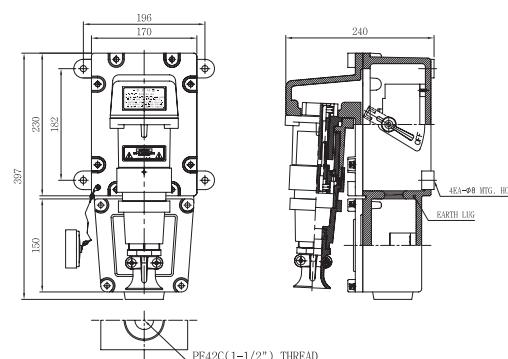
### Rated Volt, Ampere and Weight

Model No.	Rated Voltage	Rated Current	Weight	Remark
FRP-2520*	2P+1E	20A		d, tD
FRP-4630	3P+1E	30A/60A		de
FRP-48100	3P+1E	60A/100A		de

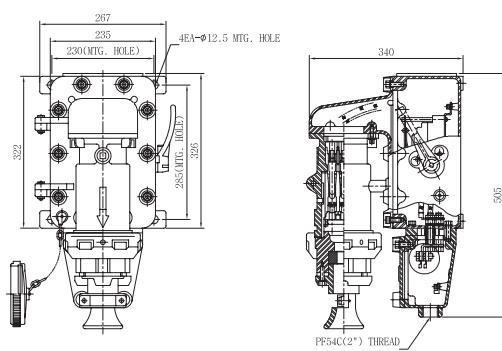
### Drawing



FRP-2520



FRP-4630



FRP-48100

### Standard Color

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.



# d



## JUNCTION BOXES & OTHER

Explosion-proof Junction Box FJB	98
Explosion-proof Junction Box TB	99
Increased Safety Junction Box IJBC	100
Weather-proof Junction Box EPWPJB	101
Explosion-proof Connection Box MSH 3.0 & ISH-200	102

# FJB

## Explosion-proof Junction Box FJB Series for Hazardous Location

### Protection Grade

Ex d IIIB+H2 T6 IP65 for Zone 1·2



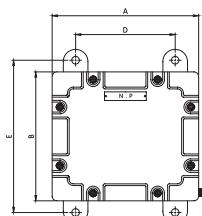
### Specification

- Body :** Cast Aluminium Alloy
- Cover :** Cast Aluminium Alloy
- Bolt & Nut :** Stainless Steel

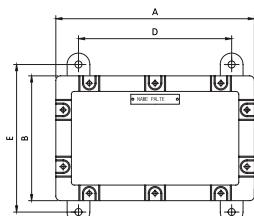
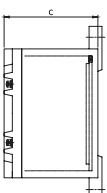
### Standard Color

- Munsell no. 7.5 BG 6/1.5
- If you want other color, contact us please.

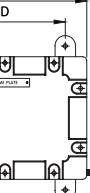
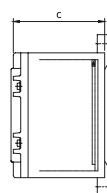
### Drawing



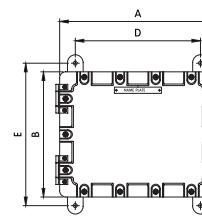
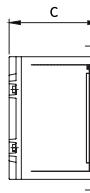
FJB-040



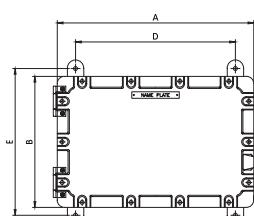
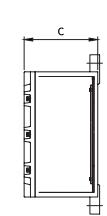
FJB-060



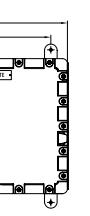
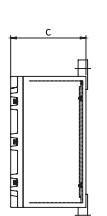
FJB-080



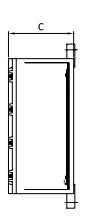
FJB-100



FJB-110



FJB-120



### Dimension(mm)

Model No.	Width(A)	Height(B)	Depth(C)	Mount(D)	Mount(E)	Bakelite Plate
FJB-020	220	180	129	160	210	160 × 125
FJB-030	200	200	1260	237	132	140 × 140
FJB-040	250	220	160	170	260	175 × 170
FJB-060	350	220	163	270	260	285 × 165
FJB-080	400	300	220	295	352	330 × 230
FJB-100	500	400	230	400	455	410 × 310
FJB-110	600	400	230	495	450	510 × 320
FJB-120	700	600	285	545	667	590 × 490
FJB-150P	980	1180	352	780	1180	800 × 1000
PEX-110	600	400	230	495	450	PEX-CCTV PANEL

# TB

## Explosion-proof Junction Box TB Series for Hazardous Location

### Protection Grade

Ex d IIC T6 IP65 for Zone 1·2



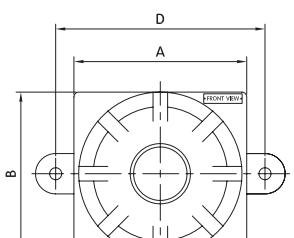
### Specification

- Body :** Cast Aluminium Alloy
- Cover :** Cast Aluminium Alloy
- Bolt & Nut :** Stainless Steel
- Cover to rotate the structure to the way the threads

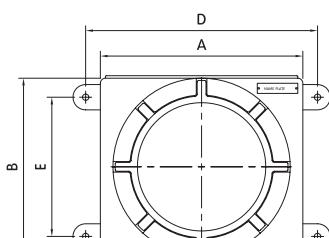
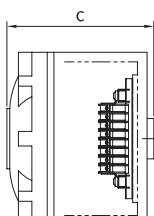
### Standard Color

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

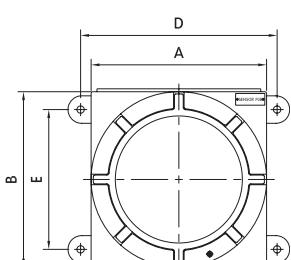
### Drawing



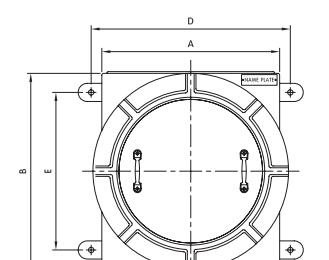
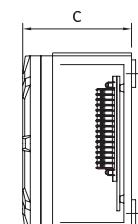
TB-52



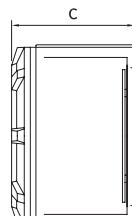
TB-60



TB-55



TB-65



### Dimension(mm)

Model No.	Width(A)	Height(B)	Depth(C)	Mount(D)	Mount(E)	Bakelite Plate
TB-52	180	170	153	218	-	ø 130
TB-55	300	300	185	355	243	220 × 220
TB-60	400	350	250	458	275	300 × 265
TB-65	500	550	260	558	445	420 × 420

# IJBC

## Increased Safety Junction Box IJBC Series for Hazardous Location

### Protection Grade

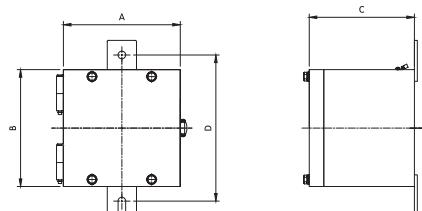
Ex e IIC T6 IP66 for Zone 1·2



### Specification

- Body & Cover :** Stainless Steel
- Packing :** EPDM Rubber
- Cover Bolt & Washer :** Stainless Steel

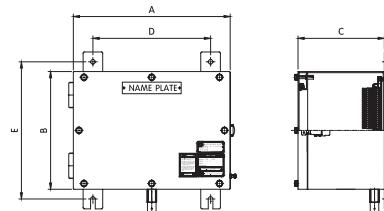
### Drawing



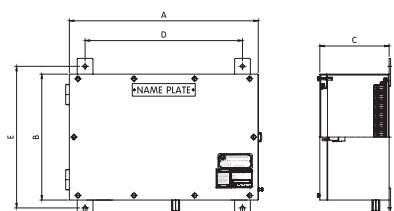
IJBC-20

### Features

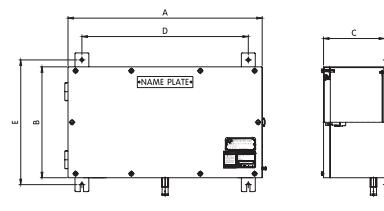
- Stainless steel
- Easy installation and maintenance.
- Good resistant to corrosive environment.
- Ingress Protection Code:IP-66
- IEC Standard Code: IEC60079-7



IJBC-60



IJBC-80



IJBC-120

### Dimension(mm)

Model No.	Width(A)	Height(B)	Depth(C)	Mount(D)	Mount(E)	Stainless Steel Plate	Certificate
IJBC-20	200	200	180	250	-	110 x 140	
IJBC-40	400	300	220	300	350	310 x 240	
IJBC-60	500	400	220	400	450	410 x 340	
IJBC-80	600	400	220	500	450	510 x 340	
IJBC-120	700	400	220	600	450	610 x 240	
IJBC-120w	600	600	500	500	650	510 x 540	
IJBC-3030	300	300	220	200	350	210 x 240	
IJBC-4040	400	400	220	300	450	310 x 340	tD
IJBC-5050	500	500	220	400	550	410 x 440	tD
IJBC-6060	600	600	220	500	650	510 x 540	

# EPWPJB

## Weather Proof Junction Box EPWPJB Series

### Protection Grade

IP65



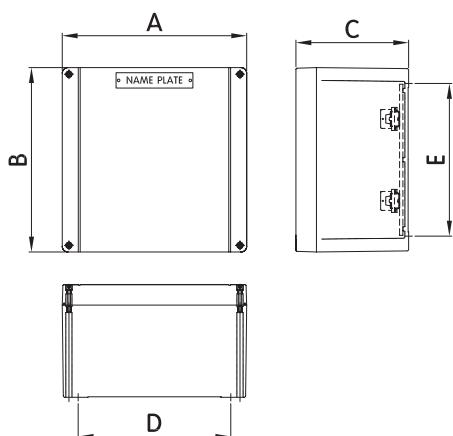
### Specification

- Body & Cover :** Engineering Plastic
- Packing :** Silicone Rubber
- Cover Bolt & Washer :** Stainless Steel

### Features

- Engineering Plastic
- Easy installation and maintenance.
- Good resistant to corrosive environment.
- Ingress Protection Code: IP-65
- IEC Standard Code: IEC60079-7

### Drawing



EPEXJB-3636

### Dimension(mm)

Model No.	Width(A)	Height(B)	Depth(C)	Mount(D)	Mount(E)
EPWPJB-3636	360	360	220	298	298
EPWPJB-4230	420	300	190	362	290

# MSH 3.0 & ISH-200

Explosion-proof Space Heater MSH 3.0 & ISH-200  
for Hazardous Location

## Protection Grade

Ex d IIC T3 for Zone 1·2



MSH3.0



ISH-200

## Specification

- Main Body :** Cast Aluminium Alloy
- Bolt & Washer :** Stainless Steel

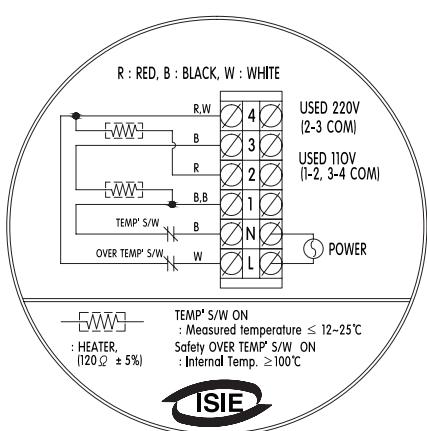
## Standard Color

- Terminal Box :** Silver
- Heat sink :** Black

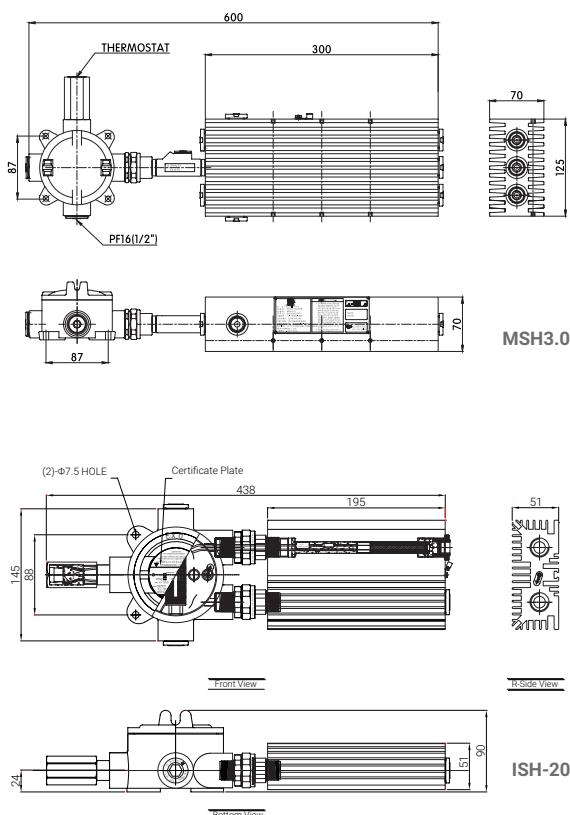
## Technical Data

- Rated Voltage :** AC 110V/220V
- Rated Frequency :** 50Hz/60Hz
- Entry Size :** 1/2"(16C), 3/4"(22C)
- Cartridge Heater :** 100W x 2

## Diagram



## Drawing



## Dimension(mm)

Model No.	Width(A)	Height(B)	Depth(C)	Mount(D)	Mount(E)
MSH 3.0	300	125	70	87	87
ISH - 200	195	120	51	87	-





# e



## FIRE PROTECTION EQUIPMENTS

Explosion-proof Bell Signal FXBS	106
Explosion-proof Alarm Signal FXAL	107
Explosion-proof Electric Siren FES	108
Explosion-proof Speaker IS-FTD*	109
Explosion-proof Exit Lighting Fixture FETLE	110
Explosion-proof Exit Lighting Fixture ExPBL	111
Explosion-proof Exit Lighting Fixture ExPSL	112

# FXBS

## Explosion-proof Bell Signal FXBS for Hazardous Location

### Protection Grade

Ex d IIIB+H2 T6 for Zone 1·2



### Standard Material

- **Main Body** : Cast Aluminium Alloy
- **Gong** : Aluminium Press
- **Bolt & Nut** : Stainless Steel
- **Horn** : Aluminium Sheet

### Weight

- 4kg

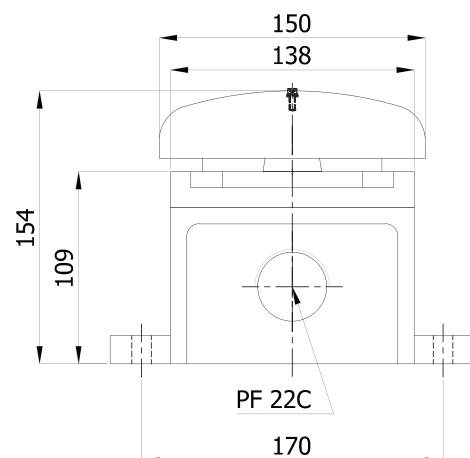
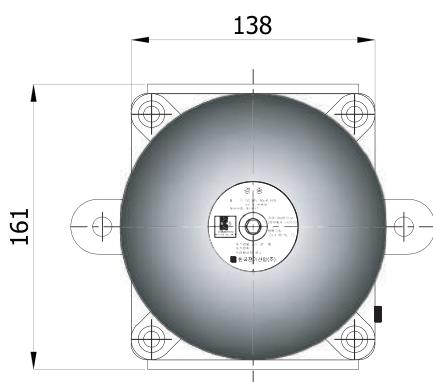
### Standard Color

- Munsell no. 7.5R 4/14(Red)  
If you want other color, contact us please.

### Technical Data

- **Rated Voltage** : AC 240V MAX
- **Sound Level of Bell** : 90dB/1m

### Drawing



# FXAL

## Explosion-proof Alarm Signal FXAL for Hazardous Location

### Protection Grade

Ex d IIIB+H2 T6 IP65 for Zone 1·2



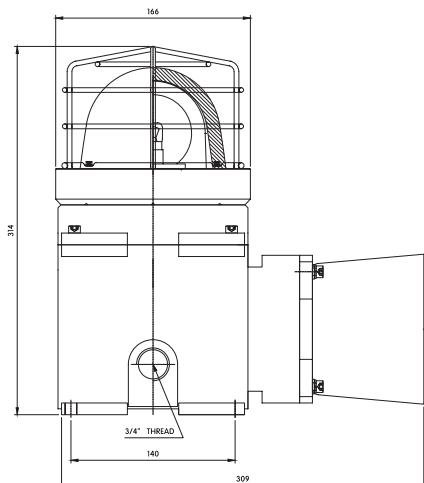
### Standard Material

- **Main Body** : Cast Aluminium Alloy
- **Globe** : Heat Resistant Hard Glass
- **Guard** : Stainless Steel
- **Horn** : Aluminium Sheet

### Weight

- 10kg

### Diagram

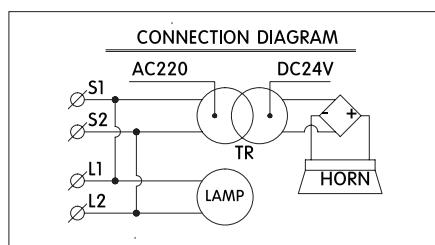
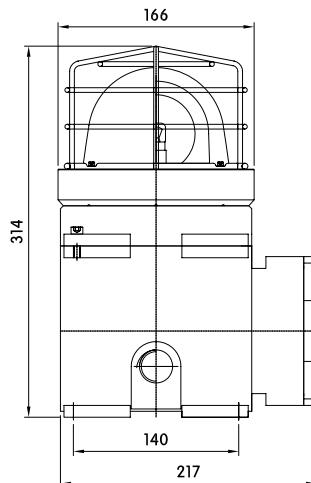


### Standard Color

- Munsell no. 7.5BG 6/1.5 or 7.5R 4/14(Red)  
If you want other color, contact us please.

### Technical Data

- **Rated Voltage** : AC 110V~240V, DC 24V
- **Lamp** : LED 2W
- **Sound Level** : 90dB/1m
- **Lamp Type** : LED, Flash type Rotary
- **Sound** : 경종, 경보, 구급, 화재, 멜로디

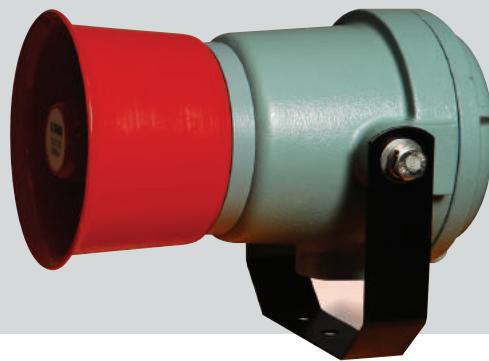


# FES

## Explosion-proof Electric Siren FES for Hazardous Location

### Protection Grade

Ex d IIIC T6 for Zone 1·2



### Standard Material

- **Main Body** : Cast Aluminium Alloy
- **Horn** : Aluminium Sheet
- **Speaker** : Cast Aluminium Alloy
- **Bolt & Nut** : Stainless Steel
- **Support** : Stainless Steel

### Standard Color

- Munsell no. 7.5BG 6/1.5 or 7.5R 4/14(Red)
- If you want other color, contact us please.

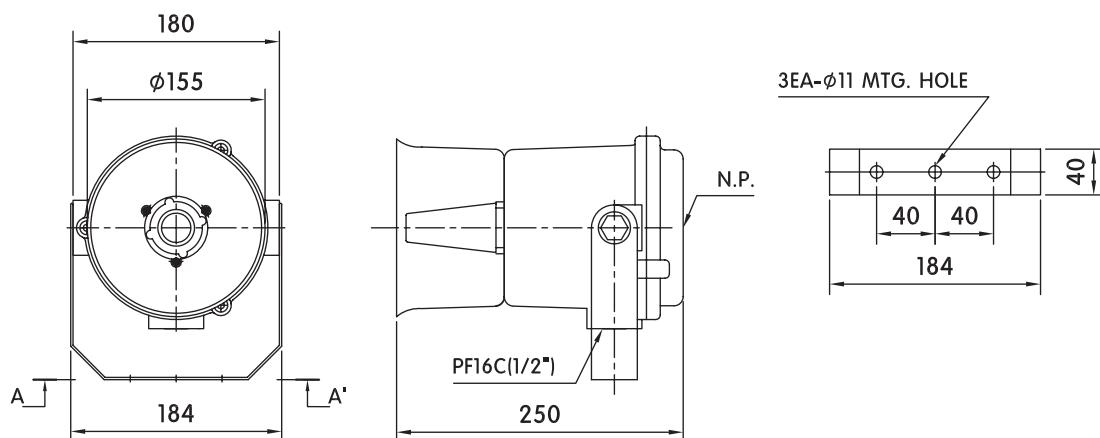
### Weight

- 5kg

### Technical Data

- **Rated Voltage** : DC 24V
- **Sound Level** : 90dB /1m

### Drawing



# IS-FTD-\*

## Explosion-proof Speaker IS-FTD-\* for Hazardous Location

### Protection Grade

Ex d IIC T6 for Zone 1·2

Ex tD A21 IP66 T80°C Zone 21·22



(IS-FTD-T\*)

(IS-FTD-\*)

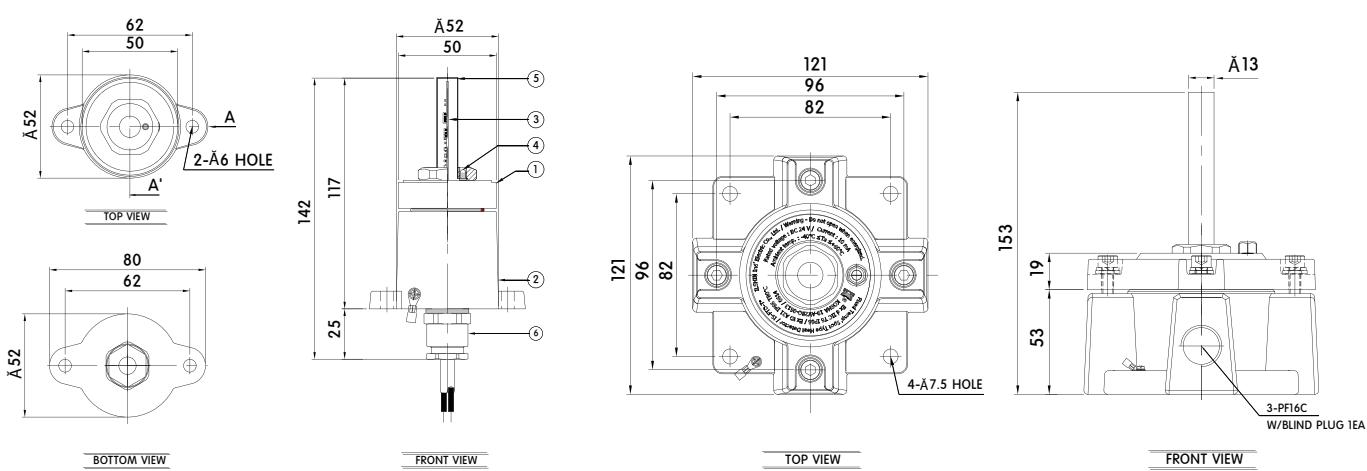
### Standard Material

- Main Body :** Cast Aluminium Alloy
- Cone :** AL Sheet
- Bolt :** Stainless Steel
- Bracket :** Steel
- Gasket :** Silicone Rubber

### Weight

- 1.2kg

### Diagram



(IS-FTD-\*)

(IS-FTD-T\*)

형식	모델	정격	공칭작동온도	종별	온도감지기능
IS-FTD-*	IS-FTD-60/T60	24V DC ±20% 10mA	60	특종	IC Chip 프로그램 Setting
	IS-FTD-70/T70		70		
	IS-FTD-90/T90		90		
	IS-FTD-110/T110		110		
	IS-FTD-120/T120		120		
	IS-FTD-130/T130		130		

# FETLE

## Explosion-proof Exit Lighting Fixture FETLE Series for Hazardous Location

### Protection Grade

Ex d IIIB+H2 T6 for Zone 1·2  
Ex tD A21 IP65 T80°C Zone 21·22



FETLE

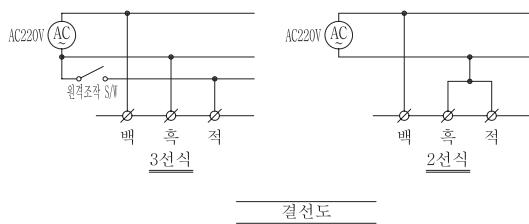


FETLE - M

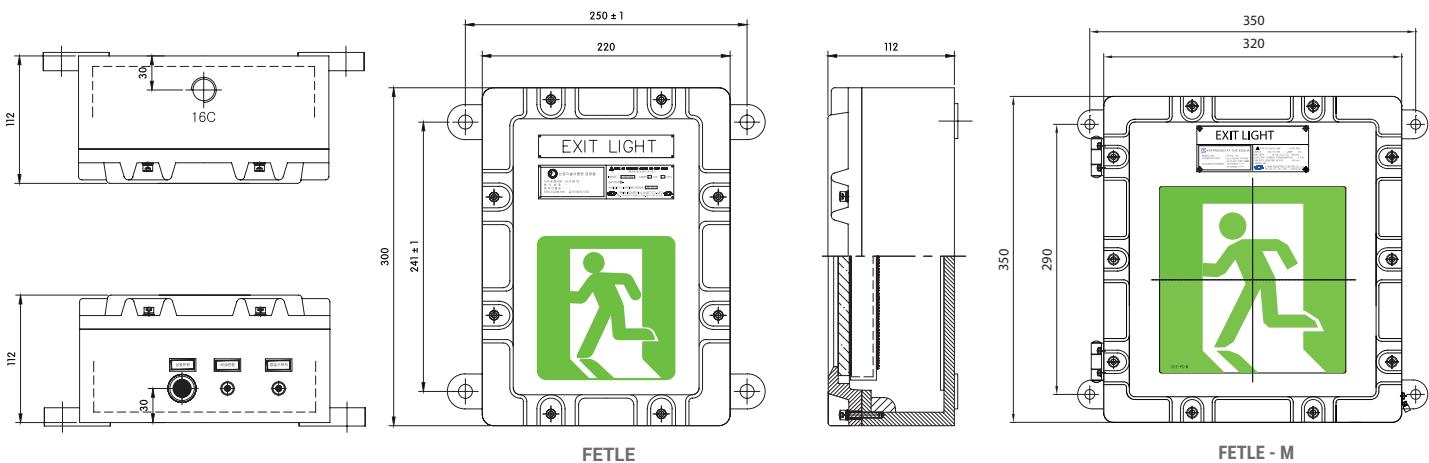
### Standard Material

- Main Body** : Cast Aluminium Alloy
- Cover** : Cast Aluminium Alloy
- Front Glass** : Heat Resistant Hard Glass

### Diagram



### Drawing



### Standard Color

- Munsell no. 7.5BG 6/1.5
- If you want other color, contact us please.

### Technical Data

- Rated Voltage** : AC 250V Below
- Lamp** : LED
- Rated Frequency** : 50Hz/60Hz
- Effective Lighting Time** : 60minutes (Battery Charging Operation)
- 소비전력** : 소형 4.5W  
중형 6.5W

### Weight

- 소형 9.4kg
- 중형 15.1kg

# ExPBL\*

## Explosion-proof Fire Alarm Manual Station ExPBL Series for Hazardous Location

### Protection Grade

Ex d IIIB+H2 T6 for Zone 1·2  
Ex tD A21 IP66 T80°C Zone 21·22



ExPBL W200



ExPBL 200

### Standard Material

- Main Body** : Cast Aluminium Alloy
- Cover** : Cast Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- Guard** : Stainless Steel
- Bell** : Die-Cast Aluminium

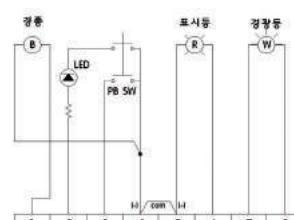
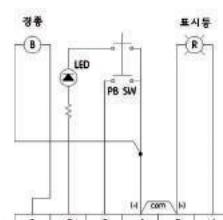
### Technical Data

- Rated Voltage** : DC 24V
- Warning Light** : LED
- Sound Level** : 90dB/1m
- Bell** : DC24V, MAX. 50mA
- Hub** : 3/4 , 1 or user scope

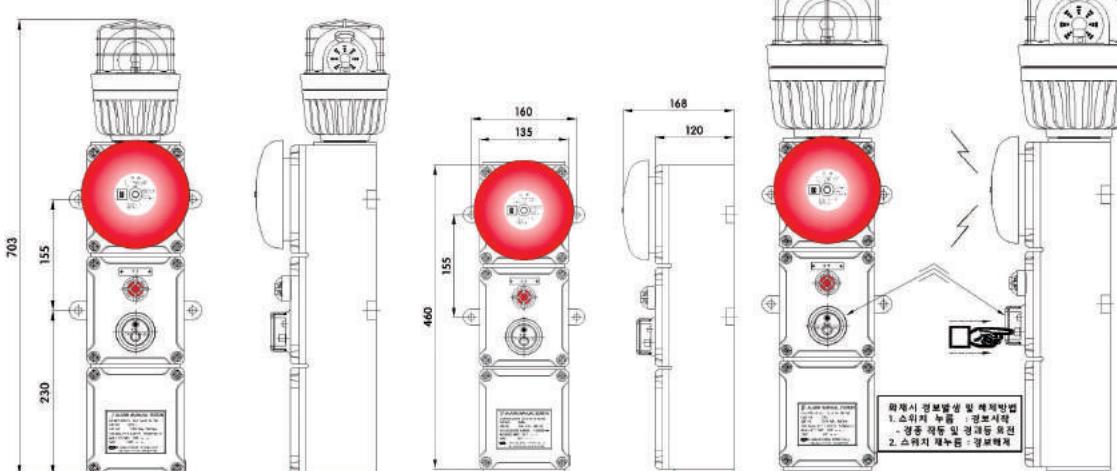
### Standard Color

- Color: 7.5R 4/14(Red)
- If you want other color, contact us please.

### Diagram

CONNECTION DIAGRAM [DC 24V]  
Type. 1CONNECTION DIAGRAM [DC 24V]  
Type. 2

### Drawing



# ExPSL\*

## Explosion-proof Fire Alarm Manual Station ExPSL Series for Hazardous Location

### Protection Grade

Ex d IIIB+H2 T6 for Zone 1·2  
Ex tD A21 IP66 T80°C Zone 21·22



ExPSL W200

ExPSL 200

### Standard Material

- Main Body** : Cast Aluminium Alloy
- Cover** : Cast Aluminium Alloy
- Glass** : Heat Resistant Hard Glass
- Guard** : Stainless Steel
- Horn** : Aluminium Sheet

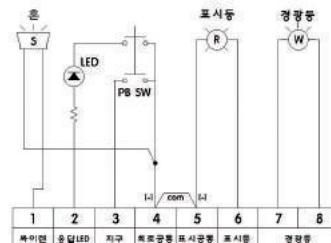
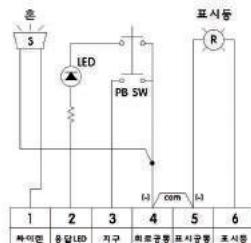
### Technical Data

- Rated Voltage** : DC 24V
- Warning Light** : LED
- Sound Level of Siren** : 90dB/1m
- Siren** : DC24V, MAX. 50mA
- Sound** : 경종, 경보, 구급, 화재
- Hub** : 3/4", 1" or user scope

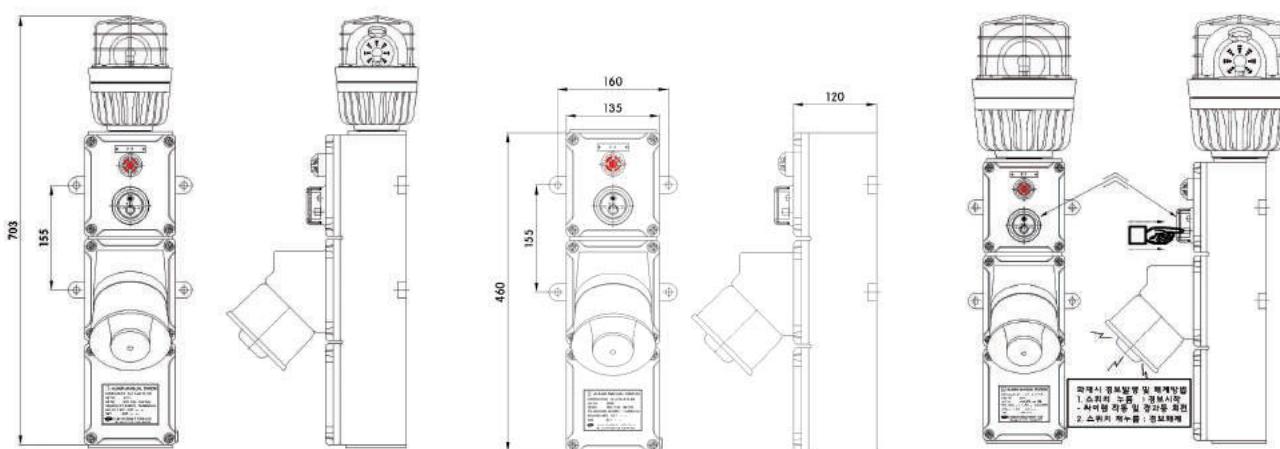
### Standard Color

- Color : 7.5R 4/14(Red)
- If you want other color, contact us please.

### Diagram

CONNECTION DIAGRAM (DC 24V)  
Type. 1CONNECTION DIAGRAM (DC 24V)  
Type. 2

### Drawing







# g



## CONDUIT FITTINGS

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# Elbow and Tee



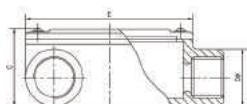
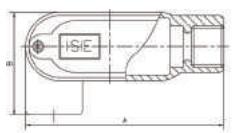
## Specification

- **Material :** Cast Iron, Cast Aluminium
- **Thread :** PF, Order Made

## Standard Finish

- Hot dip galvanized or Stove enamelled

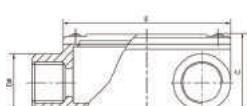
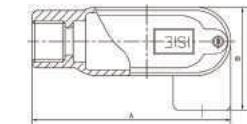
### • ELL Elbow Left



**Selection Table**

Conduit Size	Dimension (mm)					Weight
	A	B	C	D	E	
1/2"(16C)	123	57	45	31	102	0.42
3/4"(22C)	131	64	48	38	112	0.66
1"(28C)	160	8	59	45	132	1.08
1-1/4"(36C)	169	95	73	57	143	1.41
1-1/2"(42C)	192	102	80	63	161	1.71
2"(54C)	217	111	95	75	190	2.87
2-1/2"(70C)	247	127	114	94	218	5.13
3"(82C)	278	137	128	105	250	5.93
4"(104C)	305	165	154	136	274	10.26

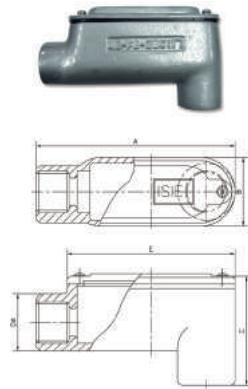
### • ELR Elbow Right



**Selection Table**

Conduit Size	Dimension (mm)					Weight
	A	B	C	D	E	
1/2"(16C)	123	57	45	31	102	0.42
3/4"(22C)	131	64	48	38	112	0.66
1"(28C)	160	81	59	45	132	1.08
1-1/4"(36C)	169	95	73	57	143	1.41
1-1/2"(42C)	191	102	80	63	161	1.71
2"(54C)	217	111	95	76	190	2.87
2-1/2"(70C)	247	127	114	94	218	5.13
3"(82C)	278	137	128	106	250	5.93
4"(104C)	305	165	154	136	274	10.26

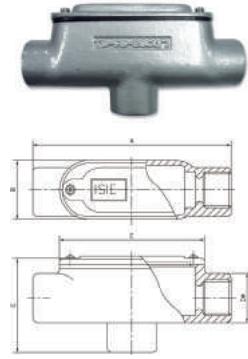
• ELB Elbow Back



**Selection Table**

Conduit Size	Dimension (mm)					Weight
	A	B	C	D	E	
1/2"(16C)	123	38	64	31	102	0.42
3/4"(22C)	131	43	72	38	112	0.66
1"(28C)	160	56	82	45	132	1.08
1-1/4"(36C)	169	65	101	57	143	1.41
1-1/2"(42C)	191	71	110	63	161	1.71
2"(54C)	217	80	124	76	190	2.81
2-1/2"(70C)	247	97	146	94	218	5.13
3"(82C)	278	110	155	106	250	5.93
4"(104C)	305	135	177	136	274	10.26

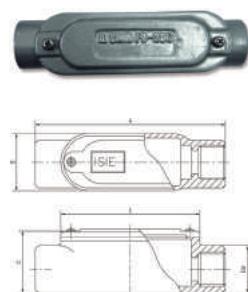
• ETB Tee Back



**Selection Table**

Conduit Size	Dimension (mm)					Weight
	A	B	C	D	E	
1/2"(16C)	142	38	77	31	102	0.55
3/4"(22C)	154	43	83	38	112	0.77
1"(28C)	183	56	96	45	132	1.26
1-1/4"(36C)	195	65	108	57	143	1.57
1-1/2"(42C)	218	71	117	63	161	1.98
2"(54C)	245	80	141	76	190	3.18
2-1/2"(70C)	275	97	180	94	218	6.17
3"(82C)	305	110	191	106	250	7.05
4"(104C)	333	135	223	136	274	10.46

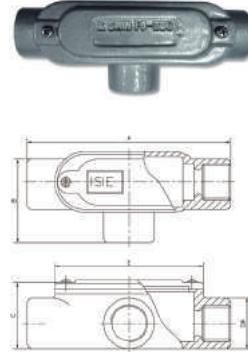
• ELC Straight



**Selection Table**

Conduit Size	Dimension (mm)					Weight
	A	B	C	D	E	
1/2"(16C)	142	38	44	31	102	0.38
(22C)3/4"	154	43	49	38	112	0.57
(28C)1"	183	56	62	45	132	0.97
(36C)1-1/4"	195	65	74	57	143	1.26
(42C)1-1/2"	218	71	82	63	161	1.54
(54C)2"	245	80	98	76	190	2.66
70C(2-1/2")	275	97	114	94	218	4.97
82C(3")	305	110	128	106	250	5.78
104C(4")	333	135	153	136	274	10.04

• ET Tee



**Selection Table**

Conduit Size	Dimension (mm)					Weight
	A	B	C	D	E	
1/2"(16C)	142	61	44	31	102	0.55
3/4"(22C)	154	64	49	38	112	0.77
1"(28C)	138	80	62	45	132	1.26
1-1/4"(36C)	195	93	74	57	143	1.57
1-1/2"(42C)	218	99	82	63	161	1.98
2"(54C)	245	112	98	76	190	3.18
2-1/2"(70C)	275	125	114	94	218	6.17
3"(82C)	305	138	128	106	250	7.05
4"(104C)	333	168	153	136	274	10.46

# IS-EL\*\*

내압 Elbow 45도,90도

**Protection Grade**

Ex d IIIC IP66



**Specification**

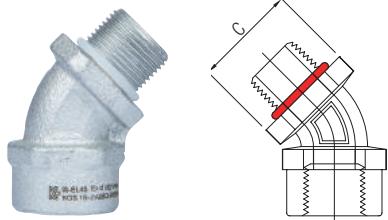
- Main Body : Cast Iron(주철)
- 사용주위온도 : -20°C~+100°C

- IS-EL 45, IS-EL 90

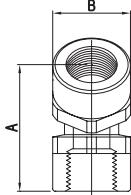
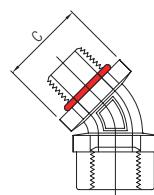
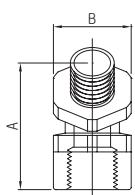
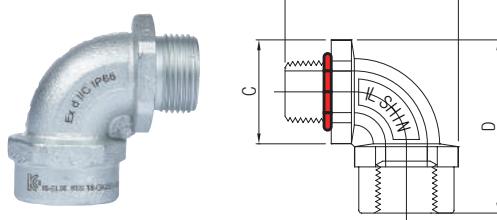
**Selection Table**

Conduit Size	Dimension (mm)					Weight
	A	B	C	D	E	
1/2"(16C)	142	38	77	31	102	0.55
3/4"(22C)	154	43	83	38	112	0.77
1"(28C)	183	56	96	45	132	1.26
1-1/4"(36C)	195	65	108	57	143	1.57

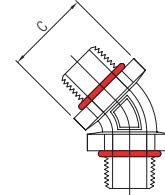
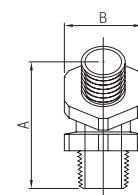
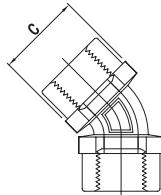
IS-EL 45



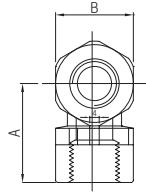
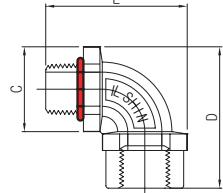
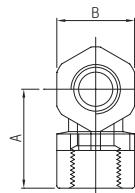
IS-EL 90



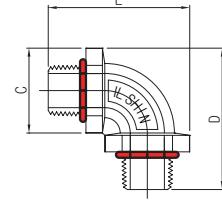
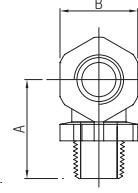
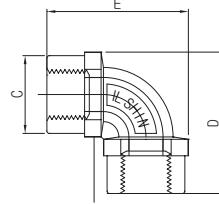
IS-EL 45 (MxF)



IS-EL 45 (MxM)



IS-EL 90 (MxF)



IS-EL 90 (MxM)

# RJB

## Explosion-proof Round Junction Box RJB Series for Hazardous Location

### Protection Grade

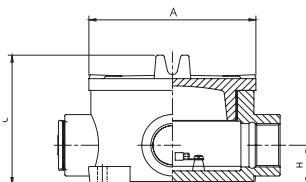
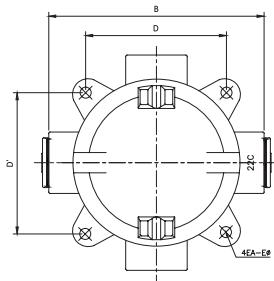
Ex d II C T6 IP65 for zone 1·2  
Ex tD A21 IP65 T80°C zone 21·22



### Specification

- Main Body :** Cast Iron
- Internal Terminal :** 20A 4P  
AC 460V, 20A 이하

### • RJB-IRON



### Selection Table

Conduit Size	Dimension (mm)					
	A	B	C	D-D'	EØ	H
1/2"(16C)	96	135	76	85	7.2	16
3/4"(22C)	96	135	79	85	7.2	21
1"(28C)	96	145	86	85	7.2	25

**IS-RJB-M\*****IS-RJB-L\***

**Explosion-proof Round Junction Box  
RJB Series for Hazardous Location**

**Protection Grade**

Ex d II C T6 IP65 for zone 1·2  
Ex tD A21 IP65 T80°C zone 21·22

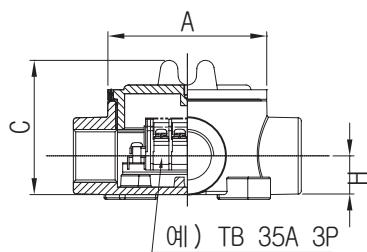
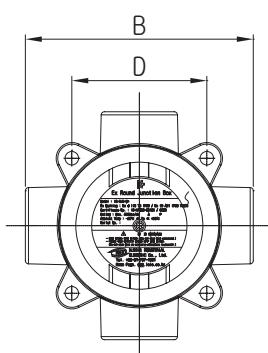
**Specification**

- **Main Body :** Die-Casting Aluminium Alloy
- **Internal Terminal :** 35A 5P Max  
AC/DC 600V 35A 이하

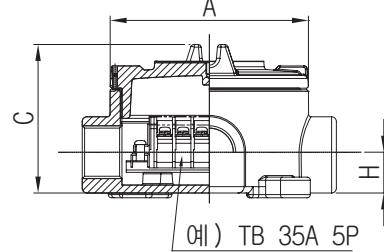
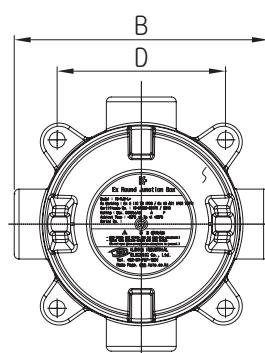
**Weight**

- M - 0.9 kg
- L - 1.4 kg

## • IS-RJB-M\*



## • IS-RJB-L\*

**Selection Table**

Model NO.	Dimension (mm)					
	Conduit Size	A	B	C	D	H
IS-RJB-M*	1/2"(16C)	100	143.5	84.5	85	19.3
	3/4"(22C)	100	143.5	84.5	85	19.3
	1"(28C)	100	143.5	84.5	85	19.3
IS-RJB-L*	3/4"(22C)	125	160	93.5	106	25.7
	1"(28C)	125	160	93.5	106	25.7
	1-1/4"(36C)	125	160	93.5	106	25.7

# Angle Junction Box

## Explosion-proof Angle Junction Box Series for Hazardous Location

### Protection Grade

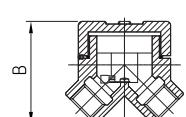
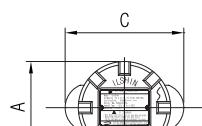
Ex d IIC T6 IP66 for zone 1·2  
Ex tD A21 IP66 T80°C zone 21·22



### Specification

- Material : Cast Iron
- Thread : PE, Order Made
- 정격 Max : AC/DC 300V, Max,15A
- 사용주위온도 : -20°C ~ +60°C

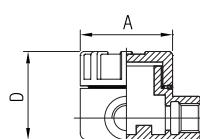
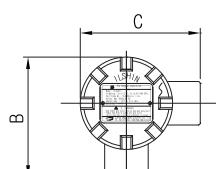
#### • IS-AJB-B\*



#### Selection Table

Conduit Size	Dimension (mm)			Weight (kg)
	A	B	C	
B* 1/2"(16C)	70	77	90	0.86
B* 3/4"(22C)	70	80	98	0.9
B* 1"(28C)	70	86	108	1.06
B* 1-1/4"(36C)	88	100	126	1.8
B* 1-1/2"(42C)	88	106	136	1.9
B* 2"(54C)	104	115	158	2.76

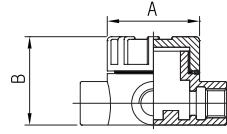
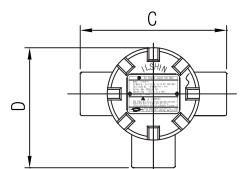
#### • IS-AJB-L\*



#### Selection Table

Conduit Size	Dimension (mm)			Weight(kg)
	A	B	C	
L* 1/2"(16C)	70	67	91	0.9
L* 3/4"(22C)	70	70	91	0.96
L* 1"(28C)	70	79	97	1.16
L* 1-1/4"(36C)	87	90	111	1.8
L* 1-1/2"(42C)	87	96	111	1.86
L* 2"(54C)	105	112	130	2.86

#### • IS-AJB-T\*



#### Selection Table

Conduit Size	Dimension (mm)			Weight(kg)
	A	B	C	
T* 1/2"(16C)	70	65	91	0.96
T* 3/4"(22C)	70	70	91	1.06
T* 1"(28C)	70	78	96	1.3
T* 1-1/4"(36C)	88	91	110	2
T* 1-1/2"(42C)	88	95	110	2.14
T* 2"(54C)	106	112	131	3.2

# SRJB

## Explosion-proof Special RJB Series for Hazardous Location

### Protection Grade

Ex d IIC T6 IP65 for zone 1·2



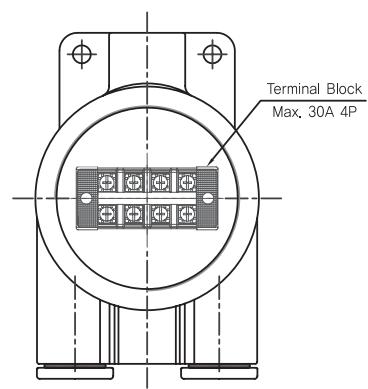
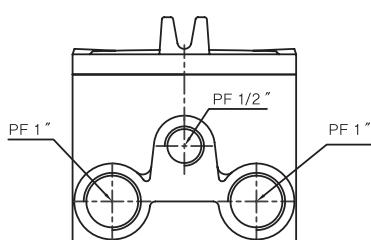
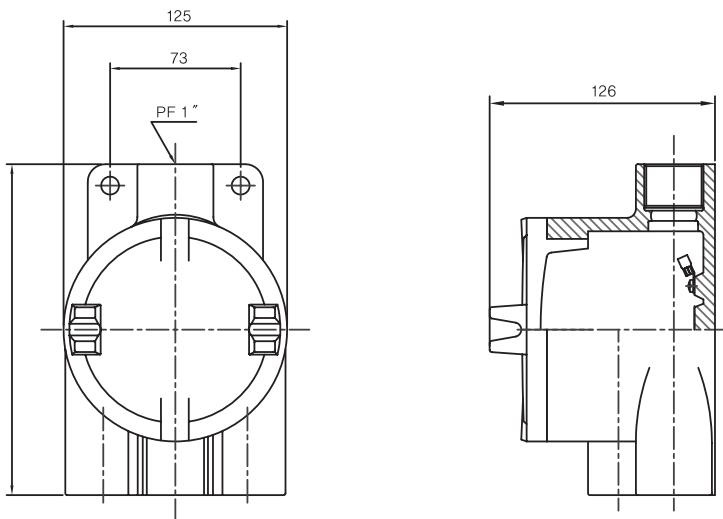
### Specification

- **Main Body :** Cast Aluminium
- **Internal Terminal :** 30A 4P Max  
AC 460V 이하 30A 이하
- **Fitting Option :** Cable Gland

### Standard Color

- **Box :** 7.5BG 6/1.5

### Drawing



# FUX

## Explosion-proof Union Coupling FUX Series for Hazardous Location

### Protection Grade

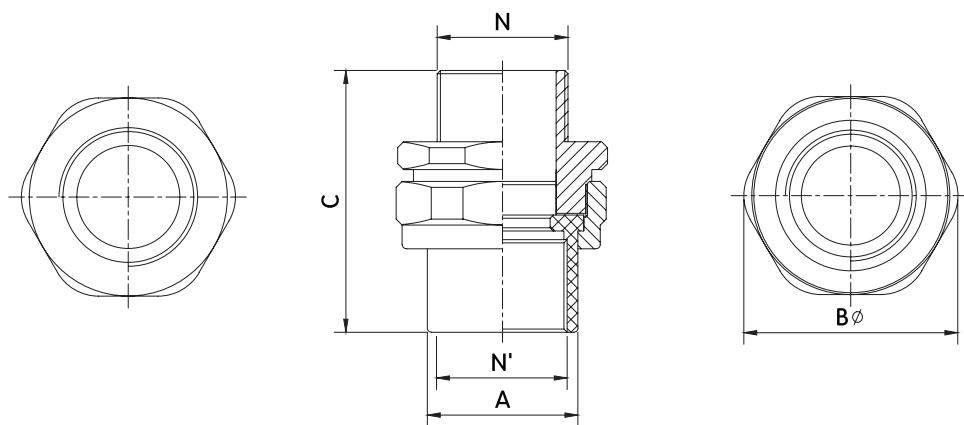
Ex d IIIC IP66 for Zone 1·2



### Specification

- Coupling :** Steel, Brass, Stainless Steel, Option
- Finish :** Zinc Electro Plated and Others
- Thread :** NPT, PF, Metric

### Drawing



### Selection Table

Conduit Size	Dimension (mm)			Weight
	A	B	C	
1/2"(16C)	24.5	37.5	48	0.18
3/4"(22C)	30	44	53.5	0.23
1"(28C)	37	48.5	59.5	0.39

# ISMU

## Explosion-proof Male Union Coupling for Hazardous Location

### Protection Grade

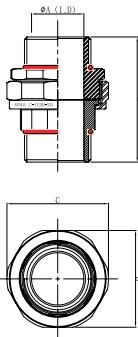
Ex d II C / Ex e II C / Ex tD A20 IP66



THREAD : PF, NPT, METRIC 가능

### Material

- Stainless Steel or Steel & Brass



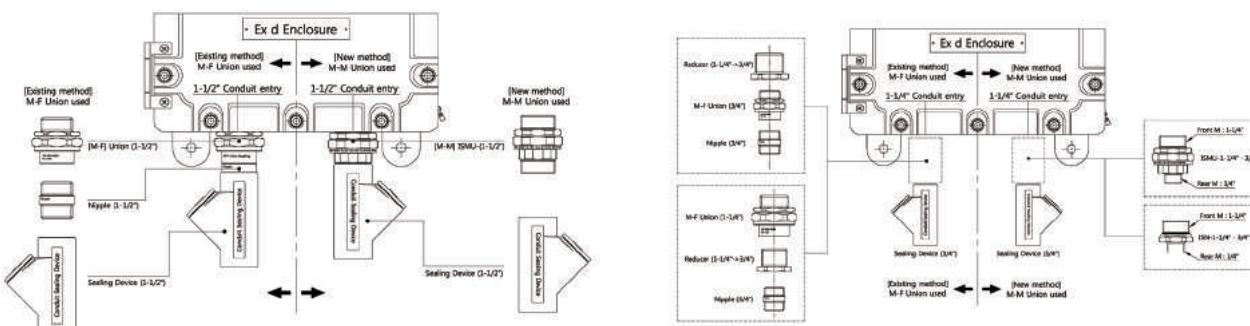
ISMU

### Selection Table

Conduit Size	Dimension (mm)			
	ØA	L	B	C
1/2"(16C)	14.5	66.5	35	38
3/4"(22C)	19.5	66.5	41	44
1"(28C)	25	77	50	53
1-1/4"(36C)	31	79	61	64
1-1/2"(42C)	38	81.3	66	70
2"(54C)	49	84.3	78	81
2-1/2"(70C)	60	89.1	95	99
3"(82C)	75	89.6	110	113
4"(104C)	95	89.6	135	139

- Korea patent registration - 한국특허등록 / Design patent - 디자인특허등록
- Material : Standard - Brass (Ni-Plated) / Customized : Stainless steel 304/316 and Steel
- Thread Type : Standard - PF(G) / Customized : NPT and Metric
- Standard Type : Thread type and size is same as Front male and real male (eg. Front male : PF(G) 1-1/2" & Real male : PF(G) 1-1/2")
- Customized Type : Thread type and size is not same as Front male and real male (eg. Front male : M32x1.5p & Rear male : PF(G) 3/4")
- 제품용도
  1. 본 제품의 주 사용 용도로는 방폭전기기기와 실링피팅의 연결을 위한 중간접속용 방폭 제품으로 사용되며, 방폭전기기기와 실링피팅 연결시 실링피팅의 캄파운드 주입구의 방향을 주입이 용이한 위치로 하여 미체결 나사 접합면 없이 완전 접속되어 방폭전기기기의 외함 보호등급과 방폭성능을 유지하는 용도로 사용된다.
  2. 본 제품은 1.항과 같이 기존적인 유니온 커플링의 기능 외에 소켓, 리듀서와 같은 아답터의 기능을 추가적으로 수행할 수 있다.  
따라서 방폭전기기기와 실링피팅 간에 나사산의 종류 또는 규격에 따른 크기가 서로 상이할 경우 본 제품 하나만으로 나사산의 종류와 크기를 변환하여 사용자 목적에 맞게 사용할 수 있다. (eg. M20 - PF(G)1 / M63 - PF(G) 1-1/4")

※방폭규격 요구 사항 : 하나의 인입부에는 아답터를 하나만 사용 / 밀봉장치는 방폭전기기기 인입부 외면에서 50mm 이내에 설치한다.



# FUXI

## Explosion-proof Insulation Union Coupling FUXI Series for Hazardous Location

### Protection Grade

Ex d II C for Zone 1·2

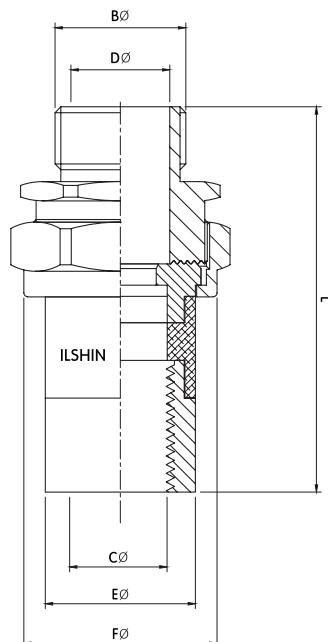
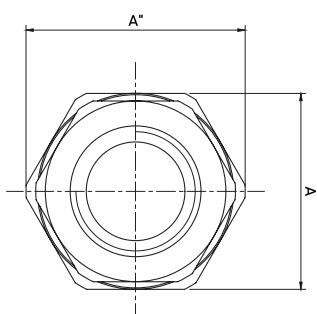


### Specification

Insulation Union Coupling

- **Coupling :** Brass
- **Finish :** Nickel Plated
- **Thread :** NPT, PF

### Drawing



### Selection Table

Conduit Size	Dimension (mm)							
	BØ(M)	CØ(F)	A	A"	DØ	EØ	FØ	L
1/2"	1/2"	1/2"	41.0	45.0	14.9	32.0	38.5	90.0
3/4"	3/4"	3/4"	48.0	53.0	20.0	39.0	46.0	90.0
1"	1"	1"	57.0	61.0	25.5	46.0	55.0	90.0
1-1/4"	1-1/4"	1-1/4"	66.0	69.0	35.0	53.5	66.0	102.0
1-1/2"	1-1/2"	1-1/2"	72.0	76.0	40.0	60.0	72.0	102.0
2"	2"	2"	87.0	90.0	40.0	73.0	87.0	102.0

# GVF & GHF & GDF

Explosion-proof Sealing Fitting  
GVF & GHF & GDF Series for Hazardous Location

**Protection Grade**

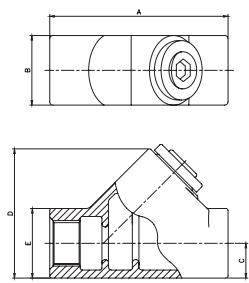
Ex d IIIC for Zone 1·2



**Specification**

- Main Body : Cast Iron
- Plug : Aluminium

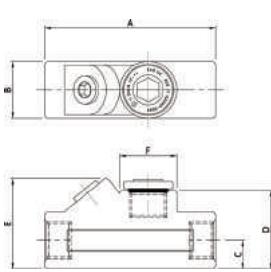
• GVF



**Selection Table**

Model No.	Conduit Size	Dimension (mm)					Weight
		A	B	C	D	E	
GVF-16	1/2"	82	32	16	60	32	0.36
GVF-22	3/4"	82	32	16	60	32	0.52
GVF-28	1"	105	45	22.5	81.5	45	0.72
GVF-36	1-1/4"	126	56	28	102	56	1.20
GVF-42	1-1/2"	143	62	31	115	62	1.55
GVF-54	2"	161	76	38	135.5	76	2.30
GVF-70	2-1/2"	185	93	46.5	153	93	3.81
GVF-82	3"	205	108	54	185	108	5.20
GVF-104	4"	231	135	67.5	207	135	7.80

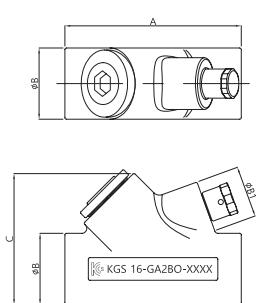
• GHF



**Selection Table**

Model No.	Conduit Size	Dimension (mm)					Weight
		A	B	C	D	E	
GHF-16	1/2"	96	32	16	44	32	0.42
GHF-22	3/4"	97	38	19	50	36	0.47
GHF-28	1"	119	45	22.5	60	45	0.75
GHF-36	1-1/4"	133	56	28	70	56	1.20
GHF-42	1-1/2"	146	62	31	78	62	1.43
GHF-54	2"	165	77	38.5	93	77	2.10
GHF-70	2-1/2"	191	89	44.5	106.5	86	3.80
GHF-82	3"	216	108	54	122.5	104	5.10
GHF-104	4"	248	133	66.5	149	130	6.95

• GDF



**Selection Table**

Model No.	Conduit Size	Dimension (mm)				Weight
		A	ØB	ØB1	C	
GDF-16	1/2"	82	32	32	64	0.42
GDF-22	3/4"	94	38	32	70	0.47
GDF-28	1"	109	44	32	81	0.75
GDF-36	1-1/4"	126	55	32.5	97	1.20
GDF-42	1-1/2"	142	61	32.5	115	1.43
GDF-54	2"	160	78	32.5	136	2.10
GDF-70	2-1/2"	185	96.0	32.5	164	3.80
GDF-82	3"	205	111.0	32.5	180	5.10
GDF-104	4"	234	136.5	32.5	242	6.95

# CGSS, ACG

Explosion-proof Cable Gland  
CGSS, ACG for Hazardous Location

## Protection Grade

CGSS : Ex d II C for Zone 1·2

ACG : Ex d II C for Zone 1·2

CGSS-N : Ex d II C for Zone 1·2



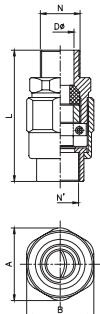
## Specification

- Material : Stainless Steel, Brass
- Thread : PF, NPT

## Standard Finish

- Natural of brass or stainless steel
- Ni Plated

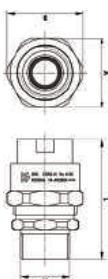
### • CGSS



## Selection Table

Conduit Size	Dimension (mm)					Weight
	N(N')	A	B	L	DØ	
1/2"(16C)	1/2"	37	33.5	76	15	0.242
3/4"(22C)	3/4"	41	38	80	20	0.297
1"(28C)	1"	54	47	92	25	0.465
1-1/4"(36C)	1-1/4"	58.5	55	98.5	33	0.635
1-1/2"(42C)	1-1/2"	67	63.5	110	39	0.867
2"(54C)	2"	80	75	113	51	1.200

### • CGSS-N

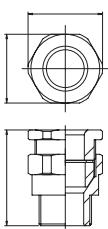


## Selection Table

Conduit Size	Dimension (mm)				Weight
	N(N')	A	B	L	
3/4"(22C)	3/4"	41	38	65.2	0.228

- Compact Type : 3/4" Only

### • ACG



## Selection Table

Conduit Size	Dimension (mm)			Weight
	A	B	L	
1/2"(16C)	47	30	14	0.090
3/4"(22C)	47	30	18	0.138
1"(28C)	47	44	28	0.198

# ISCG-E1F

## Ex Armoured Cable Gland for Hazardous Location

### Protection Grade

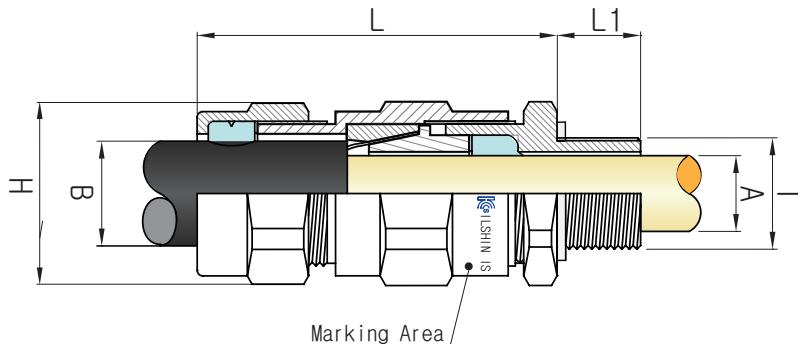
Ex d II C Zone 1, 2

Ex tD A21, IP66/67 Zone 21, 22



### Specification

- Material : Stainless Steel, Brass
- Thread : PF, NPT, M
- 사용온도 : -60°C ~ +120°C



**ISCG-E1F - a b c**

제품크기 = <b>a</b>	16a, 16b, 20a, 20b ...63b
나사산 종류 및 크기 = <b>b</b>	G(PF) : 3/8" ~ 2-1/2" NPT : 3/8" ~ 2-1/2" M : 16 ~ 75
제품 재질 = <b>c</b>	: Brass(Ni-plated) <b>S4</b> : Stainless steel 304 <b>S4</b> : Stainless steel 304 <b>B</b> : Brass(Not Plated)

### Selection Table

ISCG-E1F	Entry Thread Size (T)		Cable Range		Thread Length (L1)			Armour Range		<b>H</b>	<b>L</b>
	Metric	NPT, G (PF)	Inner(A)	Outer (B)	Metric	NPT	G (PF)	W	X		
E1F-16a	M16 / M20	3/8" / 1/2"	5 ~ 11	7 ~ 12	15	13 / 15	13 / 17	0.9 ~ 1.25	~ 0.8	25	65
E1F-16b	M16 / M20	3/8" / 1/2"	5 ~ 11	11 ~ 15	15	13 / 15	13 / 17	0.9 ~ 1.25	~ 0.8	25	65
E1F-20a	M20 / M25	1/2" / 3/4"	8 ~ 15	13 ~ 18	15	15 / 16	17 / 17	0.9 ~ 1.25	~ 0.8	31	67
E1F-20b	M20 / M25	1/2" / 3/4"	8 ~ 15	17 ~ 20	15	15 / 16	17 / 17	0.9 ~ 1.25	~ 0.8	31	67
E1F-25a	M25 / M32	3/4" / 1"	13 ~ 20	18 ~ 23	15	16 / 18	17 / 22	1.25 ~ 1.6	~ 0.8	36	71
E1F-25b	M25 / M32	3/4" / 1"	13 ~ 20	22 ~ 26	15	16 / 18	17 / 22	1.25 ~ 1.6	~ 0.8	36	71
E1F-32a	M32 / M40	1" / 1-1/4"	18 ~ 26	23 ~ 29	15	18 / 19	22 / 22	1.6 ~ 2.0	~ 1.2	45	77
E1F-32b	M32 / M40	1" / 1-1/4"	18 ~ 26	28 ~ 32	15	18 / 19	22 / 22	1.6 ~ 2.0	~ 1.2	45	77
E1F-40a	M40 / M50	1-1/4" / 1-1/2"	24 ~ 32	32 ~ 37	15	19 / 20	22 / 22	1.6 ~ 2.0	~ 1.2	55	80
E1F-40b	M40 / M50	1-1/4" / 1-1/2"	24 ~ 32	36 ~ 41	15	19 / 20	22 / 22	1.6 ~ 2.0	~ 1.2	55	80
E1F-50a	M50 / M63	1-1/2" / 2"	31 ~ 40	39 ~ 45	15	19 / 20	22 / 23	1.8 ~ 2.5	~ 1.2	68	88
E1F-50b	M50 / M63	1-1/2" / 2"	31 ~ 40	45 ~ 50	15	19 / 20	22 / 23	1.8 ~ 2.5	~ 1.2	68	88
E1F-63a	M63 / M75	2" / 2-1/2"	39 ~ 54.5	49 ~ 55	15	20 / 27	22 / 23	1.8 ~ 2.5	~ 1.2	82	92
E1F-63b	M63 / M75	2-1/2"	39 ~ 54.5	54 ~ 60	15	27	23	1.8 ~ 2.5	~ 1.2	82	92

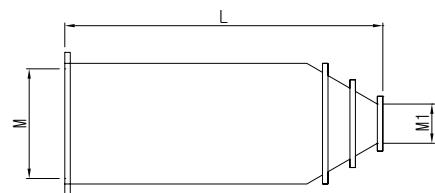
# ACCESSORIES

Accessories for  
Ex Armoured Cable Gland



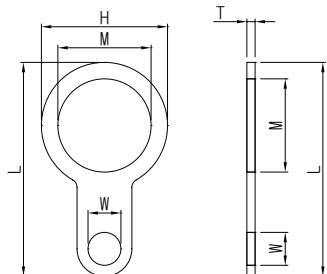
## Shrouds

- Material : EPDM



## Earth Tag

- Material : Brass + Ni. Plated or stainless Steel



## Selection Table

TYPE/SIZE	SH-A			SH-W		
	M	M1	L	M	M1	L
SH-16	22	9	58	27	10	82
SH-20	27	12	60	33	15	95
SH-25	32	17	60	38	16	96
SH-32	39	22	62	48	20	105
SH-40	48	28	62	58	27	108
SH-50	58	36	65	73	30	126
SH-63	73	46	70	88	39	135
SH-75	85	59	72	106	42	145
SH-90	100	68	75	118	55	155
SH-100	112	80	80	128	80	158

## Selection Table

TYPE/SIZE	SH-A		H	M	T	L	W
	PF/NPT	Metric					
ET-16	3/8"	M16	23	17	1.5	49	6
ET-20	1/2"	M20	30	21.5	1.5	56	7
ET-25	3/4"	M25	35	27	1.5	62	8
ET-32	1"	M32	44	33.5	1.5	74	12
ET-40	1-1/4"	M40	52	42	1.5	81	14
ET-50	1-1/2"	M50	63	50.5	1.5	101	14
ET-63	2"	M63	78	64	1.5	118	14
ET-75	2-1/2"	M75	92	76	1.5	131	14
ET-90	3"	M90	109	91	1.5	162	15
ET-100	3-1/2"	M100	120	101	1.5	177	15
ET-115	4"	M115	134	116	1.5	190	15

# ISCG-PCG

Explosion-proof Cable Gland  
PCG, DCG for Hazardous Location



## Protection Grade

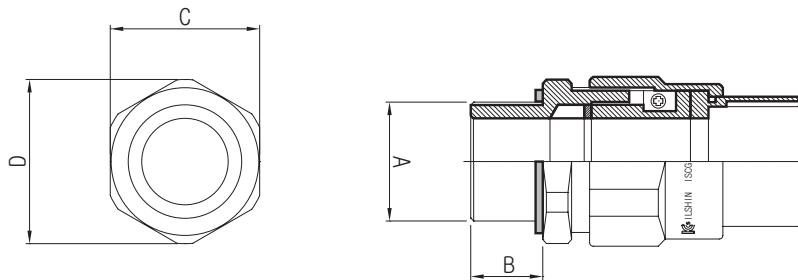
Ex d II C, IP66  
Ex e II C, Ex tD A21, IP66

## Specification

- Material : Stainless Steel, Brass
- Thread : PF, NPT, Metric
- 사용온도Tamb : -30~+100°C

## Standard Finish

- Natural or brass or stainless steel
- Ni Plated



## Selection Table

CONDUIT SIZE	A		B			C	D	Cable dia.
	NPT/PF	Metric	PF	NPT	Metric			
ISCG-PCG-16	1/2"	M 20	17	16	15	30	32.5	6~14
ISCG-PCG-22	3/4"	M 25	17	17	15	36	39	14~18
ISCG-PCG-28	1"	M 32	22	19	15	42	46	18~22
ISCG-PCG-36	1-1/4"	M 40	23	19	15	54	59	23~29
ISCG-PCG-42	1-1/2"	M 50	25	20	15	58	62	30~35
ISCG-PCG-54	2"	M 63	26	20	15	70	75	36~46
ISCG-PCG-70	2-1/2"	M 75	27	29	15	88	95	47~56
ISCG-PCG-82	3"	M 90	28	30	17	101	108	57~75
ISCG-PCG-104	4"	M 110	30	31	17	127	135	76~88

# ISCG-DCG

## Explosion-proof Cable Gland PCG, DCG for Hazardous Location

### Protection Grade

Ex d II C, IP66  
Ex e II C, Ex tD A21, IP66

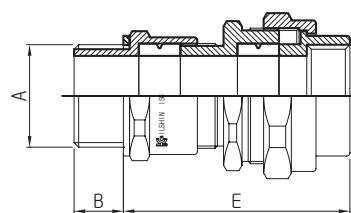
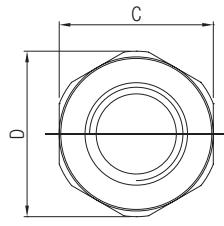


### Specification

- Material : Stainless Steel, Brass
- Thread : PF, NPT, Metric
- 사용온도Tamb : -30~+100°C

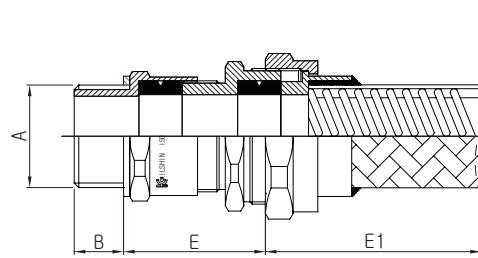
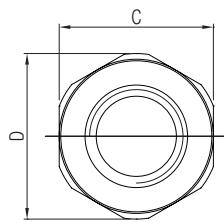
### Standard Finish

- Natural or brass or stainless steel
- Ni Plated



**Selection Table**

CONDUIT SIZE	A		B	C	D	E	Cable dia.
	NPT/PF	Metric					
ISCG-DCG-16	1/2"	M 20	15	34	37.5	59	6~13
ISCG-DCG-22	3/4"	M 25	16	42	44.5	65.5	13~18
ISCG-DCG-28	1"	M 32	18	50	53.7	70.5	18~22
ISCG-DCG-36	1-1/4"	M 40	19	58	61.5	74.5	22~29
ISCG-DCG-42	1-1/2"	M 50	19	64	68	79	29~35
ISCG-DCG-54	2"	M 63	20	78	83	83	35~46



**Selection Table**

CONDUIT SIZE	A		B	C	D	E	E1	Cable dia.
	NPT/PF	Metric						
ISCG-DCG-16	1/2"	M 20	15	34	37.5	37		6~13
ISCG-DCG-22	3/4"	M 25	16	42	44.5	39.5	300	13~18
ISCG-DCG-28	1"	M 32	18	50	53.7	43.5	~	18~22
ISCG-DCG-36	1-1/4"	M 40	19	58	61.5	46.5	OVER	22~29
ISCG-DCG-42	1-1/2"	M 50	19	64	68	49		29~35
ISCG-DCG-54	2"	M 63	20	78	83	53		35~46

# FFCX

## Explosion-proof Flexible Coupling FFCX Series for Hazardous Location

### Protection Grade

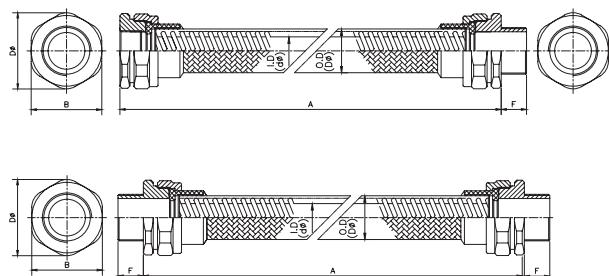
Ex d II C for Zone 1·2



### Specification

- **Flexible Tube :** Stainless Steel
- **End Fitting :** Brass(Stainless Steel)
- **Thread :** NPT, PF
- **M-M :** Male and Male(Standard)
- **M-F :** Male and Female
- **F-F :** Female and Female
- Male and Male union are fitted as standard

### Drawing



### Selection Table

Conduit Size	Min. Bending Radiud	Dimension (mm)					Weight
		B	DØ	F	I.D(dØ)	O.D(dØ)	
1/2"(16C)	80	35	38	14	12	21	0.414
3/4"(22C)	100	41	44	14	20	28	0.643
1"(28C)	140	50	53	16	25	36	0.918
1-1/4"(36C)	180	60	63	20	32	43	1.364
1-1/2"(42C)	210	67	70	24	38	51	1.860
2"(54C)	270	77	79	24	50	67	2.586
2-1/2"(70C)	350	98	101	32	62	81	4.211
3"(82C)	416	109	114	32	79	112	5.525
4"(104C)	520	139	142	34	105	138	7.332

# ISCSD-\*\*

## II Shin Cable Sealing Device ISCSD Series for Hazardous location

### Protection Grade

Ex d IIC IP66 for Zone 1·2

ISCSD-F : ISCSD Only Flexible

ISCSD-G : ISCSD Only Gland



### Specification

- **ISCSD-\*\* (Flame-Proof Type)**

- SIZE : 16C(1/2")~104C(4")

- Material : Brass(Ni-Plated)

- Thread : PF, NPT, METRIC

- **Flexible (General Type)**

- SIZE : 16C(1/2")~104C(4")

- Flexible Tube : Stainless steel

- End Fitting : Stainless steel or Brass(Ni-Plated)

- Thread : PF, NPT, METRIC

- Enhanced Flexibility & Drain Type

### Standard Finish

- Natural of Stainless Steel

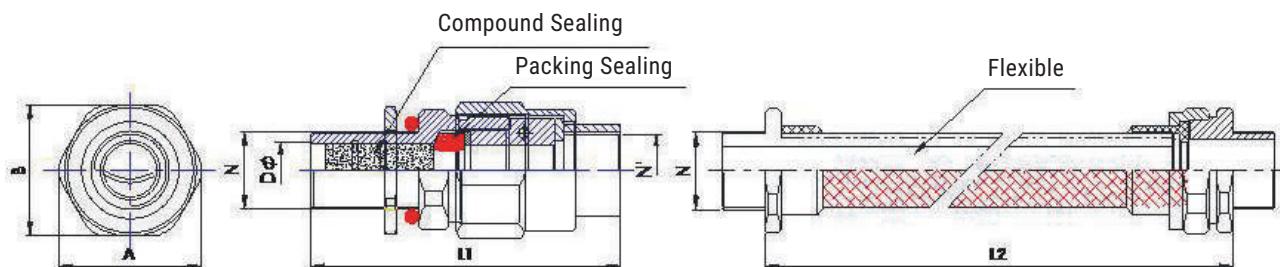
- Ni Plated

### Note

- Explosion Proof Item STEEL CONDUIT and can be conveniently used for the connection.

- Use of FLEXIBLE TUBE can be natural drainage structure during condensation.

- IIShin Cable Sealing Device is an accredited explosion proof products.



### Selection Table

Model No.	Conduit Size	Dimension (mm)							Cable Out Diameter	Weight
		N	N'	A	B	L1	DØ	L2		
ISCSD-16	16C(1/2")	1/2"	1/2"	37	34	80.5	15		Φ11~13	0.619
ISCSD-22	22C(3/4")	3/4"	3/4"	41	38	83	20		Φ15~17	0.825
ISCSD-28	28C(1")	1"	1"	50	47	93.5	25		Φ20~22	1.252
ISCSD-36	36C(1-1/4")	1-1/4"	1-1/4"	58	55	101	33	500	Φ18~22 / Φ22~26	1.839
ISCSD-36	42C(1-1/2")	1-1/2"	1-1/2"	67	63	114	39	~	Φ23~27 / Φ27~31	2.595
ISCSD-54	54C(2")	2"	2"	80	75	117.5	51	OVER	Φ27~32 / Φ32~38	3.414
ISCSD-70	70C(2-1/2")	2-1/2"	2-1/2"	98	93	130	62		Φ41~46	5.713
ISCSD-82	82C(3")	3"	3"	114	108.5	133	77		Φ52~58	6.994
ISCSD-104	104C(4")	4"	4"	146	138	139	100		Φ64~70	11.497

# EPCG PACKING 내,외경 치수 및 CABLE SEALING RANGE

규격	패킹명	패킹외경	패킹내경	패킹길이	CABLE SEALING RANGE		비고
					Min.	Max.	
#16	CGSS 16 - 06	20	6	15	3	5	16-06(5m/m~3m/m)
	CGSS 16 - 08	20	8	15	5	7	16-08(7m/m~5m/m)
	CGSS 16 - 010	20	10	15	6	9	16-10(9m/m~7m/m)
	CGSS 16 - 12	20	12	15	8	11	16-12(11m/m~8m/m)
	CGSS 16 - 13	20	13	15	11	12	16-13(12m/m~11m/m)
#22	CGSS 22 - 10	22.5	10	16	6	9	22-10(9m/m~6m/m)
	CGSS 22 - 10	22.5	12.5	16	9.5	11.5	22-12.5(11.5m/m~9.5m/m)
	CGSS 22 - 15	22.5	15	16	12	14	22-15(14m/m~12m/m)
	CGSS 22 - 17	22.5	17	16	15	16	22-17(16mm~15m/m)
#28	CGSS 28 - 17	32	17	20	13	16	28-17(16m/m~13m/m)
	CGSS 28 - 20	32	20	20	16	19	28-20(19m/m~16m/m)
#36	CGSS 28 - 22	32	22	20	19	21	28-22(21m/m~19m/m)
	CGSS 36 - 22	39	22	21	18	21	36-22(21m/m~18m/m)
	CGSS 36 - 26	39	26	21	22	25	36-26(25m/m~22m/m)
#42	CGSS 42 - 27	47	27	22.5	23	26	42-27(26m/m~23m/m)
	CGSS 42 - 31	47	31	22.5	27	30	42-31(30m/m~27m/m)
#54	CGSS 54 - 32	59	32	24.5	27	31	54-32(31m/m~27m/m)
	CGSS 54 - 38	59	38	24.5	32	37	54-38(37m/m~32m/m)
#70	CGSS 70 - 41	72	41	28	36	40	70-41(40m/m~36m/m)
	CGSS 70 - 46	72	46	28	41	45	70-46(45m/m~41m/m)
	CGSS 70 - 52	72	52	28	46	51	70-52(51m/m~46m/m)
#82	CGSS 82 - 52	84	52	28	47	51	82-52(51m/m~47m/m)
	CGSS 82 - 58	84	58	28	52	57	82-58(57m/m~52m/m)
	CGSS 82 - 64	84	64	28	58	63	82-64(63m/m~58m/m)
#104	CGSS 104 - 64	104	64	30	58	63	104-64(63m/m~58m/m)
	CGSS 104 - 70	104	70	30	64	69	104-70(69m/m~64m/m)
	CGSS 104 - 76	104	76	30	70	75	104-76(75m/m~70m/m)

**NOTE.**

일신산업전기(주)

- 복합형케이블 그랜드(ISCS) 패킹 재질: Silicon
- 케이블 그랜드(CGSS) 패킹 재질: Silicon

# Adapters & Accessories

Explosion-proof Fitting Accessories  
for Hazardous Location

## Protection Grade

Ex d II C / Ex e II C / Ex tD A20 IP66



THREAD : PF, NPT, METRIC 가능

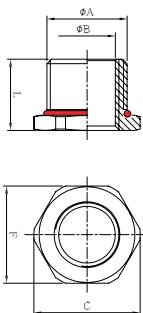
**Reducer : EX-R (Protection Grade)** Ex d II C / Ex e II C / Ex tD A20 IP66

### Material

- Stainless Steel or Steel & Brass



EX-R



### Selection Table

Conduit Size	Dimension (mm)				
	ØA	L	ØD	C	F
22C × 16C	22C	21	16C	32	35
28C × 22C	28C	25	22C	38	41
36C × 28C	36C	26	28C	48	52
42C × 36C	42C	26	36C	55	60
54C × 42C	54C	26	42C	65	71
70C × 54C	70C	28	54C	85	92
82C × 70C	82C	28	70C	98	106
104C × 82C	104C	28	82C	123	132

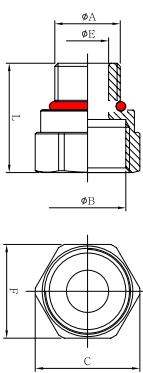
**Socket : EX-D Series (Protection Grade)** Ex d II C / Ex e II C / Ex tD A20 IP66

### Material

- Stainless Steel or Steel & Brass



EX-D



### Selection Table

Conduit Size	Dimension (mm)					
	ØA	ØE	L	ØB	F	C
16C × 22C	16C	13.5	42.0	22C	32	35
22C × 28C	22C	20.0	47.0	28C	38	41
28C × 36C	28C	26.5	52.0	36C	48	52
36C × 42C	36C	32.0	52.0	42C	55	60
42C × 54C	42C	38.0	52.0	54C	65	71
54C × 70C	54C	49.0	52.0	70C	85	92
70C × 82C	70C	60.0	52.0	82C	98	106
82C × 104C	82C	75.0	53.0	104C	123	132
104C × 104C	104C	95.0	53.5	104C	123	132

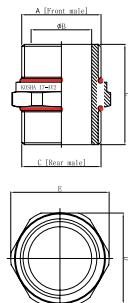
## Nipple : ISN (Protection Grade) Ex d II C / Ex e II C / Ex tD A20 IP66

### Material

- Stainless Steel or Steel & Brass



ISN



### Selection Table

Conduit Size	Dimension (mm)				
	A&C	ØB	D	E	L
1/2"(16C)	1/2"(16C)	13.5	27	29	41
3/4"(22C)	3/4"(22C)	19.5	32	35	41
1"(28C)	1"(28C)	25	38	41	52
1-1/4"(36C)	1-1/4"(36C)	32	48	52	53
1-1/2"(42C)	1-1/2"(42C)	38	55	60	55
2"(54C)	2"(54C)	49	65	71	58
2-1/2"(70C)	2-1/2"(70C)	60	85	92	60
3"(82C)	3"(82C)	75	98	106	62
4"(104C)	4"(104C)	95	123	132	65

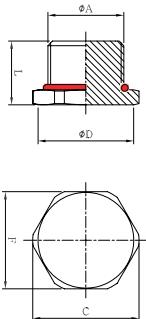
## Stopping Plug : ISP (Protection Grade) Ex d II C / Ex e II C / Ex tD A20 IP66

### Material

- Stainless Steel or Steel or Brass



ISP



### Selection Table

Conduit Size	Dimension (mm)				
	ØA	L	ØD	C	F
1/2"(16C)	16C	21.0	26.5	29	27
3/4"(22C)	22C	21.0	31.5	35	32
1"(28C)	28C	25.0	37.5	41	38
1-1/4"(36C)	36C	26.0	47.5	52	48
1-1/2"(42C)	42C	26.0	54.5	60	55
2"(54C)	54C	26.0	64.5	71	65
2-1/2"(70C)	70C	28.0	84.5	92	85
3"(82C)	82C	28.0	97.5	106	98
4"(104C)	104C	28.5	122.5	132	123

## Flame-proof Breather & Drain plug ISBD/FDB Series for Hazardous Location (Protection Grade) Ex d II C

### Standard Finish

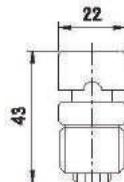
- Material : Natural of Stainless Steel
- Thread : Male 1/2"(16C)
- Function : Breather & Drain



FDB



ISBD



### Application

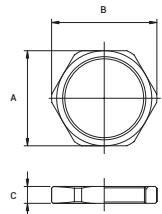
**Drain plug and breather are installed in enclosures or conduit system to:**

- provide ventilation to minimize condensation
- drain accumulated condensate
- at least one breather should be used with such drain or in lower section of conduit system
- universal breather or drain functions as breath when mounted at the top of an enclosure, or as a drain when mounted in the bottom of an enclosure
- drains and breathers are installed in hubs drilled and tapped openings

## Locknut : XL Series (Protection Grade) Ex d II C

### Material

- Stainless Steel or Steel or Brass



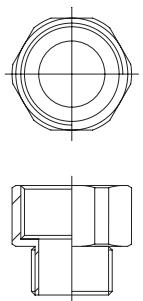
### Selection Table

Conduit Size	Dimension (mm)		
	A	B	C
1/2"(16C)	29	27	3
3/4"(22C)	36	33	3
1"(28C)	44	41	5
1-1/4"(36C)	55	60	5
1/2"(42C)	63	67	8
2"(54C)	76	69	8
2-1/2"(70C)	94	84	8
3"(82C)	106	97	8
4"(104C)	135	125	10

## Socket : EXD Series (Protection Grade) Ex d II C

### Material

- Stainless Steel or Steel & Brass



EXD

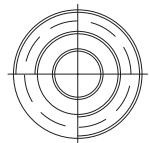
### Selection Table

Ordering No.	Male Thread Size	Female Thread Size
EXD-1622	1/2"(16C)	3/4"(22C)
EXD-1628	1/2"(16C)	1"(28C)
EXD-2228	3/4"(22C)	
EXD-1636	1/2"(16C)	
EXD-2236	3/4"(22C)	1 1/4"(36C)
EXD-2836	1"(28C)	
EXD-1642	1/2"(16C)	
EXD-2242	3/4"(22C)	1 1/2"(42C)
EXD-2842	1"(28C)	
EXD-3642	1 1/4"(36C)	
EXD-1654	1 1/2"(16C)	
EXD-2254	3/4"(22C)	
EXD-2854	1"(28C)	2"(54C)
EXD-3654	1 1/4"(36C)	
EXD-4254	1 1/2"(42C)	
EXD-2870	1"(28C)	
EXD-3670	1 1/4"(36C)	2 1/2"(70C)
EXD-4270	1 1/2"(42C)	
EXD-5470	2"(54C)	
EXD-2882	1"(28C)	
EXD-3682	1 1/4"(36C)	
EXD-4282	1 1/2"(42C)	3"(82C)
EXD-5482	2"(54C)	
EXD-7082	2 1/2"(70C)	
EXD-5404	2"(54C)	
EXD-7004	2 1/2"(70C)	4"(104C)
EXD-8204	3"(82C)	

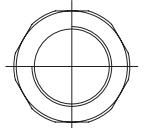
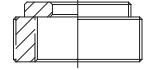
## Reducer : EXR or EXR(R) Series (Protection Grade) Ex d II C

### Material

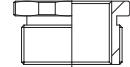
- Stainless Steel or Steel & Brass



EXR(R)



EXR



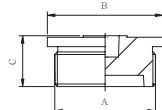
### Selection Table

Ordering No.	Male Thread Size	Female Thread Size
EXR-2216	3/4"(22C)	1/2"(16C)
EXR-2816	1"(28C)	1/2"(16C)
EXR-2822		3/4"(22C)
EXR-3616		1/2"(16C)
EXR-3622	1 1/4"(36C)	3/4"(22C)
EXR-3628		1"(28C)
EXR-4216		1/2"(16C)
EXR-4222	1 1/2"(42C)	3/4"(22C)
EXR-4228		1"(28C)
EXR-4236		1 1/4"(36C)
EXR-5416		1/2"(16C)
EXR-5422		3/4"(22C)
EXR-5428	2"(54C)	1"(28C)
EXR-5436		1 1/4"(36C)
EXR-5442		1 1/2"(42C)

## Plug : XP Series (Protection Grade) Ex d II C

### Material

- Stainless Steel or Aluminium



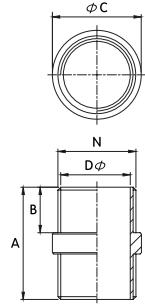
### Selection Table

Conduit Size	Dimension (mm)		
	A	B	C
1/2"(16C)	1/2"	27.5	19
3/4" (22C)	3/4"	31.5	19
1"(28C)	1"	40.5	22
1 1/4"(36C)	1 1/4"	48.5	23
1 1/2"(42C)	1 1/2"	55	23
2"(54C)	2"	70	23

## Nipple : XN Series (Protection Grade) Ex d II C

### Material

- Stainless Steel or Steel



### Selection Table

Conduit Size	Dimension (mm)				
	N(N')	A	B	ØB	DØ
16C(1/2")	1/2"	42	14	21.5	16.4
22C(3/4")	3/4"	46.1	16.6	27.3	22
28C(1")	1"	52	18.1	34.2	28
36C(1-1/4")	1-1/4"	54.1	19.1	42.6	36
42C(1-1/2")	1-1/2"	58.5	22	48.7	42.3
54C(2")	2"	60.7	23.2	60.7	52.9
70C(2-1/2")	2-1/2"	65	25	76.2	67.3
82C(3")	3"	77.4	29.7	88.8	78.2
104C(4")	4"	91.3	39.5	114.5	103.4

## SEALING COMPOUND(SELPOD-A)

### Specification

Supplied with the solution and asbestos packing. This sealing compound makes a seal of sufficient strength and can be used for both vertical type and any angle type sealing fittings.

The solution has a effect of adjusting the setting time and may save the site time on installation.

### Attention in Use

- As SELPOD powder is changed in quality by moisture in the air, keep the container tightly closed.
- Hardened sealing compound has rather high insulation resistance in the dry condition. However, it shall not be used as a insulation material. Never make a seal in the space where made.
- Do not add the solution or water after the compound starts hardening. Special attention to be paid that SELPOD will not be hardened by such a treatment.

## SELPOD-A Set(POWDER-LIQUID HYBRID)

**Selection Table**



Fitting	Requirement(g)		
	Vertical	Horizontal	Horizontal
1/2"(16C)	50	90	120
3/4"(22C)	70	110	140
1"(28C)	120	130	210
1 1/4"(36C)	210	220	260
1 1/2"(42C)	250	270	300
2"(54C)	400	440	430
2-1/2"(70C)	700	800	500
3"(82C)	1000	1050	600
4"(104C)	1800	2000	1000

## SELPOD-A2 Set(SOLID DOUGH MIXED)

**Selection Table**



ISCSD Size	Requirement(g)		Total(g)
	A (주제)	B (경화제)	
1/2"(16C)	5 g	5 g	10 g
3/4"(22C)	7.5 g	7.5 g	15 g
1"(28C)	15 g	15 g	30 g
1-1/4"(36C)	27 g	27 g	54 g
1-1/2"(42C)	45 g	45 g	90 g
2"(54C)	75 g	75 g	150 g



I L S H I N , E X P L O S I O N P R O O F C O M P O N E N T S

# 4

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## Supplement

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01\_ ILSHIN Industrial Electric

02\_ Technical Information

03\_ Global Leading Products

04\_ Supplement

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## 방폭요약

### I . 위험장소 구분

- IEC 규격

ZONE 0 ZONE 1 ZONE 2

- 한국 규격

0종 장소 1종 장소 2종 장소

- 미국 규격 : NEC/NFPA No.70

NEC500 CLASS I DIVISION 1 DIVISION 2

NEC505 CLASS I ZONE 0 ZONE 1 ZONE 2

ZONE 2 = DIVISION 2 ZONE 1 ≠ DIVISION 1

#### 1. 위험장소 구분에 영향을 주는 요소

위험 발생원

위험가스 누출

위험가스 누출 비율

누출 발생원의 형태

누출 속도

가스의 농도

가연성 액체의 휘발성

액체의 온도

폭발 하한값

가스의 공기에 대한 비중

#### 2. 환기

자연적인 환기

0.5m/sec 속도로 연속적으로 부는 바람(최소 0.3m/sec)

시간당 100회의 공기 치환

※ 일반적인 바람 2m/sec

※ 공간의 육면체에서 50%면에서 자유스러운 건물 통풍

인공적인 환기

#### 3. 미국 API 500에 따른 위험장소 구분

위험장소 구분에 대하여 쉽게 정리되어 있어서 적용하기가 편리함

### II . 위험가스의 분류

#### 1. IEC 기준

GROUP I : 탄광의 갱도내의 폭발성 가스

GROUP II : GROUP I 이외의 산업용 폭발성 가스

GROUP II는 가스의 위험성 정도에 따라 GROUP IIA, GROUP IIB와 GROUP IIC로 나눈다.

## 2. NEC 기준

CLASS I 기준내에 GROUP D, GROUP C, GROUP B, GROUP A

## 3. 상호관계

GROUP D GRUOP IIA

GROUP C GROUP IIB

GROUP A & B GROUP IIC

## III. 가스 방폭 구조의 종류

### 1. 전기 점화원을 위험가스에서 분리함으로 폭발을 방지하는 구조

충진방폭 Ex q II T3 : 휴즈

몰드방폭 Ex m II T6 : 전자부품. 적은 용량의 변압기(Ma, Mb 최근 분리)

유입방폭 Ex o II T6 : 중급 변압기

압력방폭 Ex p II T6 : 정밀기기/IEC 60079-2

: 압력유지 50Pa

X=Y+Z/NEC

PX=PY+PZ/IEC

ROOM OR BUILDING PROTECTION BY PRESSURIZATION/IEC 60079-13

: 양압유지 25Pa

ANALYZER HOUSING PROTECTION BY PRESSURIZATION/IEC 60079-16

: PURGE 유지, 양압 25Pa 또는 해당 가스의 폭발하한값의 25% 이하 유지

※ 문(DOOR) 개방시 공기 방출속도는 초당 0.3m 이상이어야 한다.

높이 2.0m, 폭 0.9m 문에서 방출공기량은 분당 33m<sup>3</sup>이다.

### 2. 구조를 특별히 하여 정상상태에서는 온도를 한계 내에 제한하고 스파크가 밖으로 나오지 않게 하는 구조

안전증 방폭 Ex e II T3 : JUNCTION BOX, MOTOR(농형)

비점화 방폭 Ex nA II T2 : 형광등기구. NON-SPARKING APPARATUS

Ex nR II T3 : 방전등기구. RESTRICTED BREATHING ENCLOSURE

Ex nC II T3 : OTHER PROTECTED SPARKING APPARATUS

Ex nL II T3 : ENERGY LIMITED APPARATUS

Ex nZ II T3(Ex nP II T3) : SIMPLIFIED PRESSURIZED ENCLOSURE

### 3. 에너지를 제한함으로 폭발을 방지하는 구조

본질 안전 방폭 Ex ia IIC T4 : INSTRUMENT

Ex ib IIB T4

[Ex ia] IIC T4 : 본질 안전 관련기기(BARRIER)

### 4. 방폭기기의 용기가 폭발에 견디도록 한 구조

내압방폭 Ex d IIB T4 : SWITCH

### 5. 예방방폭/확대피해방지 방폭

### 6. 특별방폭 : Ex s II T3

#### IV. ATEX(ATMOSPHERES EXPLOSIVES) DIRECTIVE에 따른 방폭기기 표시방법

CATEGORY 1            ZONE 0

CATEGORY 2            ZONE 1

CATEGORY 3            ZONE 2

Ex II 2 G

Ex II 3 D

#### V. 방폭표시 기호

Ex-Exd IIB T4, Exe II T3

EEx-EExd IIB T4, EExe II T3

AEx-AExd II T4, AEExe II T3

[Exib] IIC T4

[Exia] IIC T4

ATEX- Ex II 2G

Ex II 3D

#### VI. ZONE에 따른 기기 선정

ZONE 0

Ex ia, Ex Me

ZONE 1

Ex ia, Ex ib

Ex e

Ex o

Ex q

Ex px

Ex ma, Ex mb

Ex d

ZONE 2

Ex nA, Ex ne

Ex ic

Ex mc

Ex Pz

## VII. 방폭전기설비의 전기적 보호

### 1. 자동차단장치

- ① 과부하, 단락 또는 지락 등의 사고시 다음 각 호의 1의 경우를 제외하고는 자동차단장치를 설치하여야 한다.
  - (1) 보안회로의 경우
  - (2) 자동차단이 폭발 위험보다 더 큰 위험을 발생시킬 우려가 있는 경우
- ② 3상전동기가 단상운전으로 인하여 과전류가 흐를 우려가 있는 경우에는 과전류차단기를 각 상마다 사용하거나 결상계전기를 사용하는 등 이에 적합한 보호장치를 설치하여야 한다.
- ③ 자동차단장치는 사고가 제거되지 않은 상태에서는 자동복귀되지 않는 구조이어야 한다.  
다만, 2종장소에 설치된 설비의 과부하방지장치에는 이를 적용하지 아니한다.

### 2. 전원공급계통의 접지방식

- 폭발위험장소에 설치된 전기설비에 전력을 공급하는 계통의 접지방식은 보안회로를 제외하고는 다음 각 호에 따른다.
  - (1) 중성점 직접접지방식의 경우 중성선과 기기접지선을 공용으로 사용하여서는 아니된다.
  - (2) 중성점 직접접지방식 이외의 방식으로 중성점과 기기의 접지극을 별도로 할 경우 0종장소에는 순시작동 자동차단장치를 설치하여야 하고, 기타 폭발위험장소에는 가능한 한 지락경보장치를 설치하여야 한다.

### 3. 전위의 동일화

- ① 도전부 사이의 전위차에 의한 스파크의 발생가능성을 방지하기 위하여 0종, 1종장소 및 분진폭발위험장소의 모든 도전부는 본딩 등에 의하여 그 전위의 동일화를 기하여야 한다.
- ② 2종장소에서 사용하는 모든 도전성 금속체 등에는 접지를 하고 사용하여야 한다.

## VIII. 방폭전기설비의 점검 및 조정

### 1. 적용범위

- 전기설비의 설치 및 시공 후에 행하는 점검 및 조정에 대하여 적용한다.

### 2. 전기설비의 점검

- 방폭전기설비는 다음 각 호의 사항 중 해당사항의 적정유무를 확인하여야 한다.
  - (1) 단자전압, 상회전, 극수 등
  - (2) 퓨즈링크, 광원 등의 교환부품의 종류와 정격
  - (3) 윤활부의 기름 주입 또는 윤활유 충전상태
  - (4) 전기설비 입구에서의 냉각매체 온도, 압력 및 유량과 배관 등에서의 누출유무
  - (5) 제어, 조작, 표시, 경보 등의 전체 제어시스템 작동 이상유무
  - (6) 부속 기기류의 작동 및 표시
  - (7) 진동의 유무 및 그 정도

### 3. 배선인입부 점검

- ① 전기 설비 등에 전선관 나사결합에 의한 인입시에는 다음 각 호의 사항을 확인하여야 한다.
  - (1) 후강전선관을 전기설비 등의 용기에 적정하게 조여 부착하여야 하며, 전기설비 등이 내압방폭구조인 경우에는 그 위에 전선관의 나사부에 KS B 0233(전선관 나사)에서 규정한 볼트·너트가 사용되고 있을 것
  - (2) 전기설비와 전선관 등의 방폭성능의 유지 및 확보에 필요한 부분의 실링이 유효하게 설치되어 있을 것.
  - (3) 전선관, 전선관용 부속품 및 전기설비 등의 나사 결합부에는 빗물 등이 유입되지 않도록 적절한 조치가 되어 있을 것.

- ② 패킹을 이용한 케이블 인입의 경우에는 다음 각 호의 사항을 확인하여야 한다.
  - (1) 패킹이 적절하게 조여져 부착되어 있을 것
  - (2) 클램프가 부착된 경우에는 그 조임상태가 적정할 것
  - (3) 외장이 없는 케이블은 전선관 등으로 외상에 대한 적합한 보호가 되어 있을 것

- ③ 실링 컴파운드를 충전한 케이블의 인입의 경우에는 다음 각 호의 사항을 확인하여야 한다.
  - (1) 컴파운드가 충분한 깊이로 충전되고 밀착상태와 경화상태가 양호할 것
  - (2) 클램프의 조임상태가 적정할 것
  - (3) 외장이 없는 케이블은 전선관 등을 외상에 대한 적합한 보호가 되어 있을 것

#### 4. 배선과 전기설비 등과의 접속부 점검

- 배선과 방폭전기설비 등과의 접속부는 다음 각 호의 사항을 확인하여야 한다.
  - (1) 단자기호, 상회전, 회로 극성 접속이 올바르게 되어 있을 것
  - (2) 접속부에서의 조임상태가 확실하고 이완 방지조치가 되어 있을 것
  - (3) 단자대 등이 없는 접속부는 확실한 절연처리가 되어 있을 것

#### 5. 용기덮개 등의 점검

- 용기의 덮개 등은 다음 각 호의 사항을 확인하여야 한다.
  - (1) 뚜껑 등의 접합부 또는 나사산에는 손상 또는 이물질의 부착이 없고, 비경화성 유지류가 도포되어 있을 것
  - (2) 방진 또는 방수용으로 패킹이 이용되고 있는 경우에는 패킹이 바르게 설치되어 있을 것
  - (3) 조임나사류의 결손이 없고 적정하게 조일 것

#### 6. 본안회로의 배선

- 본안회로의 배선은 다음 각 호의 내용을 점검하여야 한다.
  - (1) 본안회로 배선의 식별이 명확하게 되어 있을 것
  - (2) 비본안회로와 혼촉방지조치가 되어 있을 것
  - (3) 비본안회로에 의한 정전유도 방지대책이 강구되어 있을 것
  - (4) 본안회로와 본안 관련기기의 조합에 있어서 본안회로의 배선에 허용될 수 있는 인덕턴스 및 정전용량의 크기가 제한값 이내일 것

#### 7. 보호장치의 점검 및 조정

- 방폭전기설비의 방폭성능을 유지하기 위한 보호장치는 다음 각 호의 내용을 점검 및 조정하여야 한다.
  - (1) 방폭구조 및 사용조건에 따른 작동상태
  - (2) 과전류, 단락, 지락사고 등에 대한 설정값 및 작동상태
  - (3) 냉각식 전기설비의 경우 냉각매체에 관한 보호장치 작동상태
  - (4) 전체 제어시스템의 작동상태

## 분진 방폭

### 1. 분진방폭 종류와 기호

- |           |                  |
|-----------|------------------|
| 분진 내압방폭   | : tD(특수방진, 보통방진) |
| 분진 압력방폭   | : pD             |
| 분진 본질안전방폭 | : iaD, ibD       |
| 분진 몰드방폭   | : mD             |

### 2. 표시기호

- Ex tD A21 IP6X T225°C T500320°C(A형 특수방진방폭)  
Ex tD A22 IP5X T120°C(A형 보통방진방폭)  
Ex tD B22 T170°C(B형 방진방폭)  
Ex mD 20 T120°C  
Ex iD 20 T120°C  
Ex pD 21 IP6X T120°C

### 3. 위험장소구분

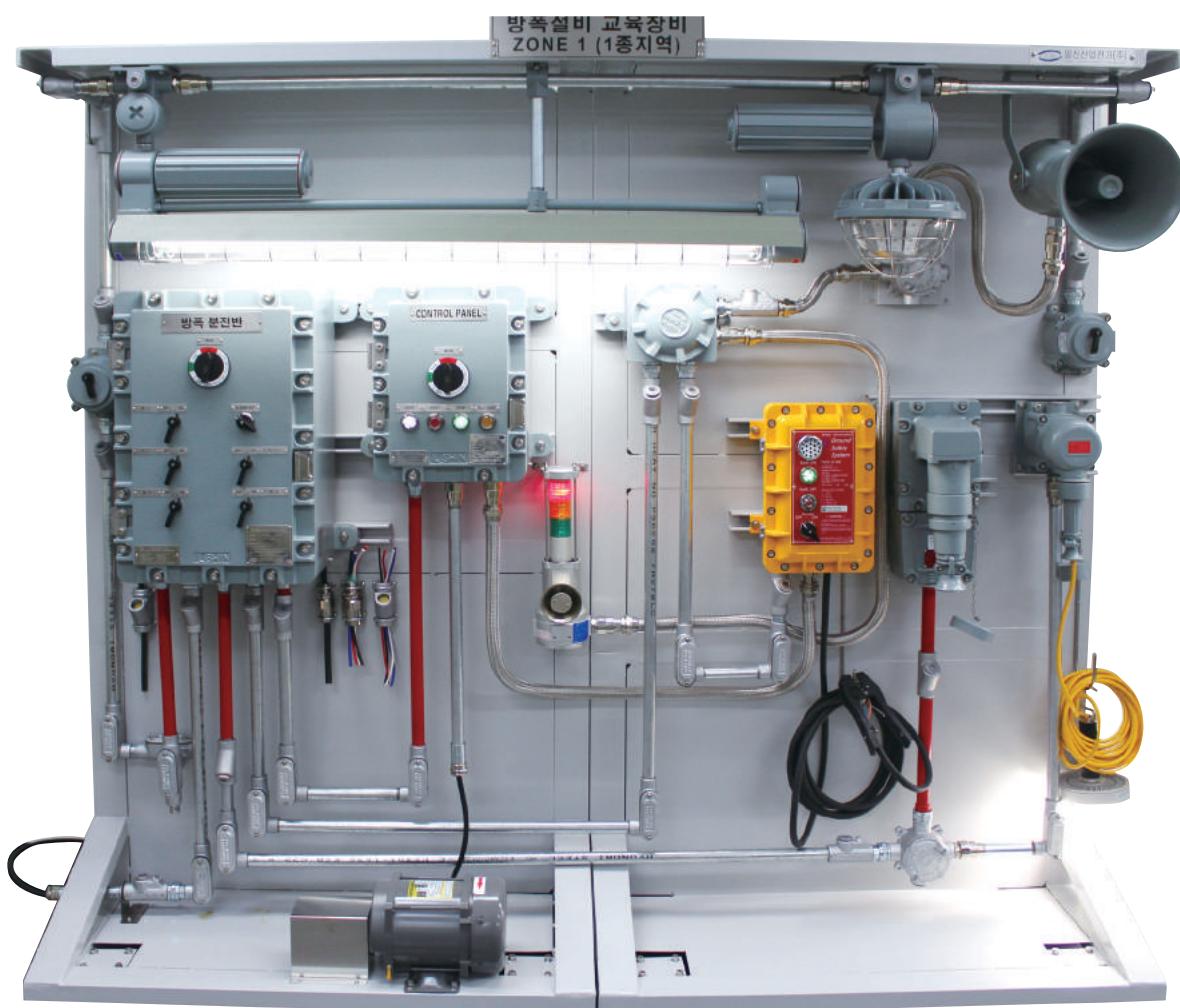
1. A형, B형  
ZONE 20  
ZONE 21  
ZONE 22

**교육용 기자재 공급**

**한국산업안전공단(KOSHA)**

**한국가스공사(KGS)**

**한화토탈**

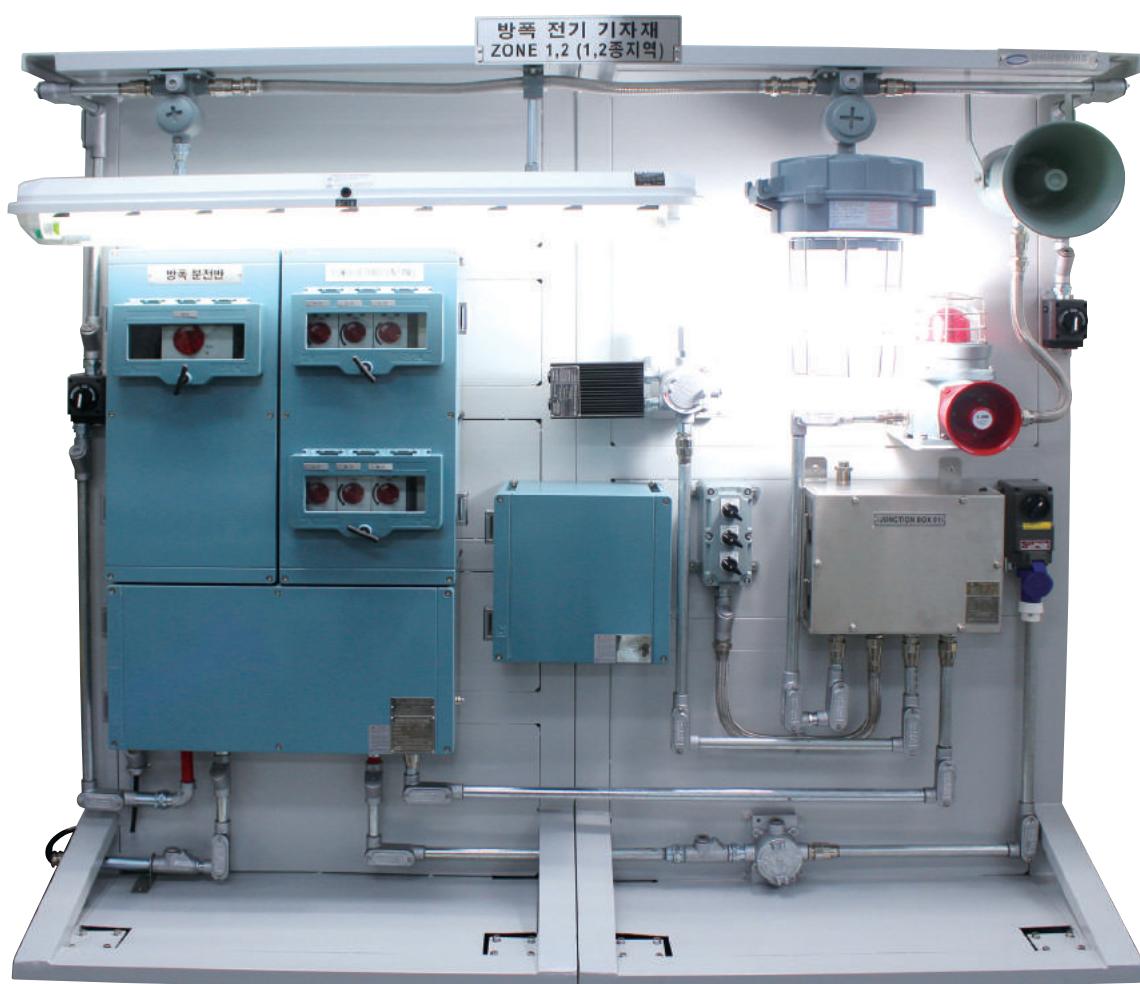


**교육용 기자재 공급**

**한국산업안전공단(KOSHA)**

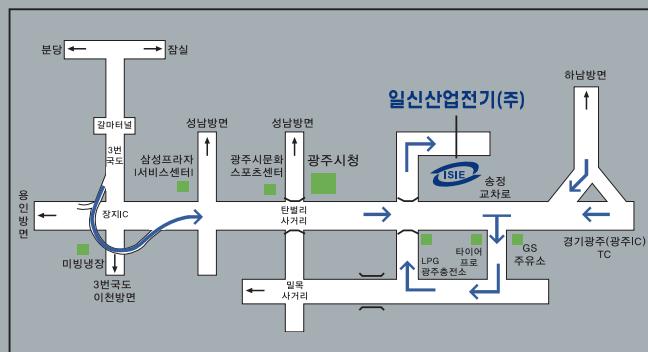
**한국가스공사(KGS)**

**한화토탈**



# Memo

## Memo



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