

# FD Series Cylindrical Fluorescent Luminaires

## Standard and Emergency Battery Back-Up. Flameproof

Zone 1 and 2 - 21 and 22  
Gas (G) and Dust (D)

### Applications

- Can be installed in hazardous areas designated as Zone 1 and 2 - 21 and 22.
- For use in locations where a high degree of corrosion resistance is required.
- For indoor/outdoor use where protection against dirt, water and moisture is necessary.
- Typical applications include:
  - Oil refineries
  - Petrochemical facilities
  - Pulp and paper, mills
  - Painting, sewage and water treatment facilities
  - Warehouses
  - Underground tunnels
  - General manufacturing facilities

### Features

- Impact resistant borosilicate glass sealed tube.
- Easy access to lamps through gray painted aluminum threaded entry cap.
- Supplied with O-ring for improved ingress protection.
- Corrosion-resistant gray painted aluminum.
- Supplied with energy efficient and self induction ferromagnetic ballast on a removable gear tray.
- Quick and easy installation of fluorescent lighting fixtures with 2G11 and G13 lamp holders.
- Supplied with external and internal ground/earth connection.
- Fixture supplied with one M20 blanking plug.
- Easy connection to wire and disconnect with plug-in terminal blocks.
- Bi-pin (G13) 18 and 36 W magnetic ballast versions operate at 70 °C ambient temperature with T4 rating.
- Magnetic ballast versions 230 V 50 Hz or 240 V 50 Hz or 220 V 60 Hz or 230 V 60 Hz.
- Electronic ballast versions 110 to 254 Vac/Vdc, 50/60 Hz.
- 3 hour emergency version with automatic self test every month
- Plug in battery pack (6 V 4 Ah) is easy to remove for maintenance.

### Standard Materials

- End caps and cover: aluminum
- Glass tube: borosilicate glass
- O-ring gasket: Nitrile (NBR)
- Internal reflector: white powder coated galvanized steel
- Mounting accessories: several accessories in different material such as zinc plated steel, galvanized steel or 316 stainless steel

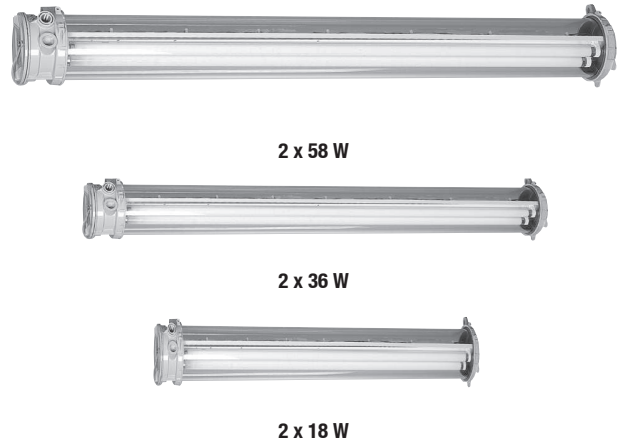
### Options

- 8 W fluorescent (Bi-pin G5) available, see section HBDC series.

### Certifications and Compliances

#### ◆ATEX/IECEX Certification

- **Certification Type: FLd**
  - Gas: Zone 1 and 2:
    - Conforming to ATEX 94/9/CE: Ⓢ II 2 G
    - Type of Protection: Ex d IIB, Ex d IIB+H<sub>2</sub>, Ex d IIC
    - Temperature Class: See *Table on following page*



- Dust: Zone 21 and 22:
  - Conforming to ATEX 94/9/CE: Ⓢ II 2 D
  - Type of Protection: Ex tD A21
  - Surface Temperature: See *Table on following page*
- Ambient Temperature: -20 °C to 55 °C
- CE Declaration of Conformity: 50203
- ATEX Certificate: LCIE 97 ATEX 6012
- IECEx Certificate: IECEx LCI 04.0018
- Index of Protection according EN/IEC 60529: IP66/68
- Impact Resistance (shock): IK08
- Internal Volume: > 2 dm<sup>3</sup> - 2 liters

#### ◆EURASEC Certification

- EURASEC N° TC RU C-FR.Г505.B.00910

#### ◆Others Certification

- INMETRO Certificate: BVC11.0492 <sup>①</sup>

### Related Products

- For labels see *Labels for Emergency Lighting Units, ATX Self-Adhesive Signaling Labels for Emergency Lighting Units.*

<sup>①</sup> Inmetro certification available on special request only. Contact your local sales for more information

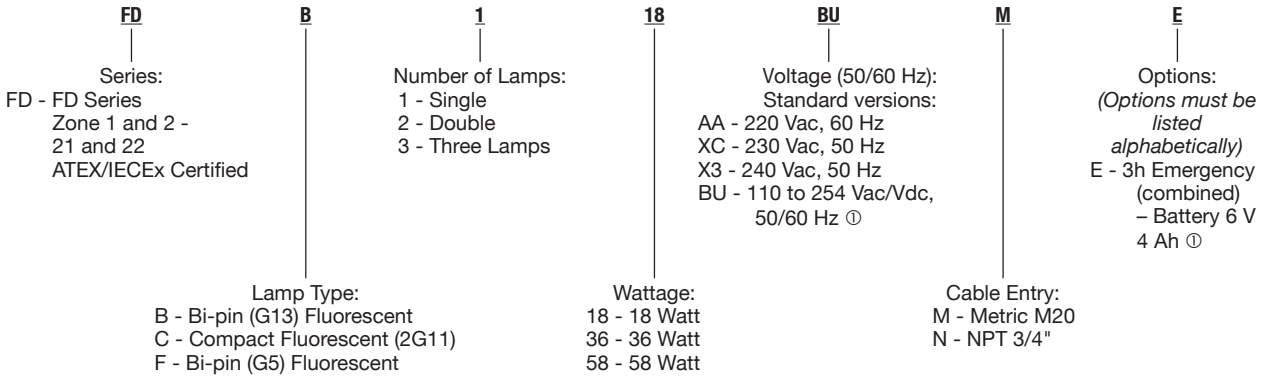
# FD Series Cylindrical Fluorescent Luminaires

## Standard and Emergency Battery Back-Up. Flameproof

Zone 1 and 2 - 21 and 22  
Gas (G) and Dust (D)

Order using catalog numbering guide below or select catalog number from tables on following pages.

### Catalog Numbering Guide – FD Series Cylindrical Fluorescent Luminaires



**T Rating (Gas) and Surface Temperature (Dust) Table**

Model	Lamp Type	Gas – T Rating				Dust – Surface Temperature		
		Without External Reflector			With External Reflector		Without External Reflector	With External Reflector
		Ta = 40 °C	Ta = 55 °C	Ta = 70 °C	Ta = 40 °C	Ta = 55 °C		
0.3	Compact Fluorescent 2G11 18 W max.	T6	T5	N.A.	T5	T4	95 °C	130 °C
0.6	a) Fluorescent G13 Magnetic Ballast 1 x 18 W/2 x 18 W	T6	T5	T4	T6	T5	97 °C	95 °C
	b) Fluorescent G13 Electronic Ballast 1 x 18 W/2 x 18 W/3 x 18 W	T6	T6	N.A.	T6	T5	78 °C	95 °C
	c) Compact Fluorescent 2G11 1 x 36 W 2 x 36 W	T6	T5	N.A.	T6 T5	T4	95 °C	130 °C
1.2	a) Fluorescent G13 Magnetic Ballast 1 x 36 W/2 x 36 W/3 x 36 W	T6	T5	T4	T6	T5	110 °C	95 °C
	b) Fluorescent G13 Electronic Ballast 1 x 36 W/2 x 36 W/3 x 36 W	T6	T6	N.A.	T6	T6	78 °C	80 °C
1.5	a) Fluorescent G13 Magnetic Ballast 1 x 58 W/2 x 58 W	T6	T6	N.A.	T6	T5	80 °C	95 °C
	b) Fluorescent G13 Electronic Ballast 1 x 58 W/2 x 58 W/3 x 58 W	T6	T5	N.A.	T6	T5	84 °C	95 °C

①The 3 hour emergency version is only available on fluorescent, 2 lamp fixtures with BU voltage - 110 to 254 Vac/Vdc, 50/60 Hz.

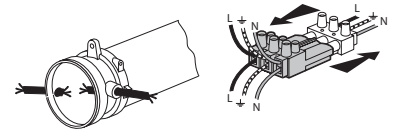
# FD Series Cylindrical Fluorescent Luminaires

## Standard and Emergency Battery Back-Up. Flameproof

Zone 1 and 2 - 21 and 22  
Gas (G) and Dust (D)

### Ordering Information – Standard Versions

Two M20 threaded entries, supplied with one M20 aluminum blanking plug.  
Connection via 1 x 3 double deck terminals.  
Capacity (flexible/solid): 0.75 mm<sup>2</sup> to 2.5 mm<sup>2</sup>.



For Bi-pin (G13) Fluorescent Lamps - T8, 26 mm or T12, 38 mm

Wattage (W)	No. of Lamps	Gas Group	Model	Weight kg	Volume dm <sup>3</sup>	Catalog Number
<b>230 V - 50 Hz – Magnetic Ballast – Starter Ignition</b>						
Compensated power supply – power factor > 0.9						
18W	1	IIC	0.6	9.0	58	FDB118XCM
	2	IIC	0.6	9.7	58	FDB218XCM
36W	1	IIB+H <sub>2</sub>	1.2	14.7	99	FDB136XCM
	2	IIB+H <sub>2</sub>	1.2	15.3	99	FDB236XCM
58W	1	IIB	1.5	17.0	119	FDB158XCM
	2	IIB	1.5	18.2	119	FDB258XCM
<b>240 V - 50 Hz – Magnetic Ballast – Starter Ignition</b>						
Compensated power supply – power factor > 0.9						
18W	1	IIC	0.6	9.0	58	FDB118X3M
	2	IIC	0.6	9.7	58	FDB218X3M
36W	1	IIB+H <sub>2</sub>	1.2	14.7	99	FDB136X3M
	2	IIB+H <sub>2</sub>	1.2	15.3	99	FDB236X3M
58W	1	IIB	1.5	17.0	119	FDB158X3M
	2	IIB	1.5	18.2	119	FDB258X3M
<b>220 V - 60 Hz – Magnetic Ballast – Starter Ignition</b>						
Compensated power supply – power factor > 0.9						
18W	2	IIC	0.6	9.7	58	FDB218AAM
36W	2	IIB+H <sub>2</sub>	1.2	15.3	99	FDB236AAM
58W	2	IIB	1.5	18.2	119	FDB258AAM

Shaded catalog numbers are normally stocked items. All other items are made to order.

# FD Series Cylindrical Fluorescent Luminaires

## Standard and Emergency Battery Back-Up. Flameproof

Zone 1 and 2 - 21 and 22  
Gas (G) and Dust (D)

### Ordering Information – Standard Versions – Continued

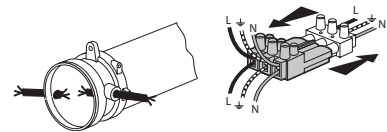
Two M20 threaded entries, supplied with one M20 aluminum blanking plug.  
Connection via 1 x 3 double deck terminals.  
Capacity (flexible/solid): 0.75 mm<sup>2</sup> to 2.5 mm<sup>2</sup>.



Wattage (W)	No. of Lamps	Gas Group	Model	Weight kg	Volume dm <sup>3</sup>	Catalog Number
For Bi-pin (G13) Fluorescent Lamps – T8, 26 mm or T12, 38 mm <b>110 to 254 Vac/Vdc, 50/60 Hz – Electronic Ballast</b> Power factor > 0.95						
18W	2	IIC	0.6	9.7	58	FDB218BUM
36W	2	IIB	1.2	15.3	99	FDB236BUM
	3	IIB	1.2	16.3	99	FDB336BUM
58W	1	IIB	1.5	17.0	119	FDB158BUM
	2	IIB	1.5	18.2	119	FDB258BUM
	3	IIB	1.5	19.2	119	FDB358BUM
For 2G11 Compact Fluorescent Lamps – TC-L <b>230 V - 50 Hz – Magnetic Ballast – Starter Ignition</b> Compensated power supply – power factor > 0.9 – Lamps supplied						
18W	1	IIC	0.3	9.0	58	FDC118XCM
	2	IIC	0.3	9.7	58	FDC218XCM
36W	1	IIB+H <sub>2</sub>	0.6	14.7	99	FDC136XCM
	2	IIB+H <sub>2</sub>	0.6	15.3	99	FDC236XCM

### Emergency Versions

Two M20 threaded entries, supplied with one M20 aluminum blanking plug.  
Connection via 1 x 4 double deck terminals.  
Capacity (flexible/solid): 0.75 mm<sup>2</sup> to 2.5 mm<sup>2</sup>.





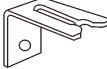
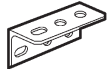

Wattage (W)	No. of Lamps	Gas Group	Model	Line Output	Weight kg	Volume dm <sup>3</sup>	Catalog Number
For Bi-pin (G13) Fluorescent Lamps – T8, 26 mm or T12, 38 mm <b>110 to 254 Vac/Vdc, 50/60 Hz – Electronic Ballast</b> 3 hour duration - battery pack 6 V 4 Ah - Power factor > 0.95 - Self test every month.							
18W	2	IIC	0.6	29%	11.6	58	FDB218BUME
36W	2	IIB	1.2	16%	17.2	99	FDB236BUME
58W	2	IIB	1.5	11%	20.2	119	FDB258BUME

Shaded catalog numbers are normally stocked items. All other items are made to order.

# FD Series Cylindrical Fluorescent Luminaires

## Standard and Emergency Battery Back-Up. Flameproof

Zone 1 and 2 - 21 and 22  
Gas (G) and Dust (D)

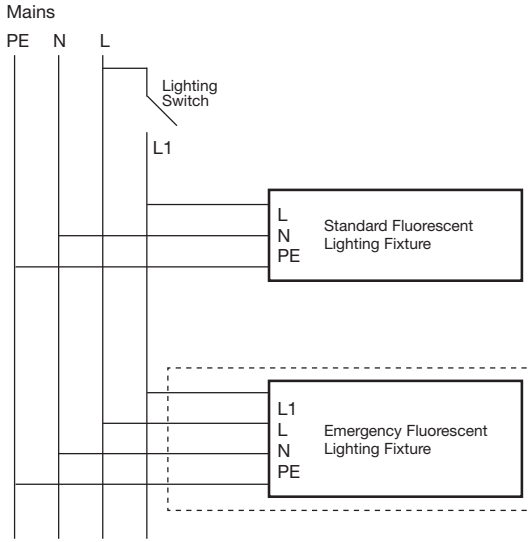
Accessories and Replacement Parts		
Description		Catalog Number
<b>External Reflector – White Painted Galvanized Steel</b>		
	Model 0.3	FDER1G
	Model 0.6	FDER2G
	Model 1.2	FDER3G
	Model 1.5	FDER4G
<b>Protective Guard – Zinc Plated Steel</b>		
	Model 0.3	FDPG1Z
	Model 0.6	FDPG2Z
	Model 1.2	FDPG3Z
	Model 1.5	FDPG4Z
<b>Fixing Brackets for Ease of Surface Installation – Set of Two</b>		
	Zinc plated steel	FDFBZ
	316 stainless steel	FDFBS
<b>Surface Mounting Brackets – Set of Two</b>		
	Zinc plated steel	FDSBZ
	316 stainless steel	FDSBS
<b>Half Clamp Brackets for Pole Mounting – Set of Two</b>		
	Pole diameter 42 to 49 mm	
	Zinc plated steel	FDHC49Z
	316 stainless steel	FDHC49S
	Pole diameter 60 mm	
	Zinc plated steel	FDHC60Z
	316 stainless steel	FDHC60S
<b>Fall Prevention Kit</b>		
	1.20 meter stainless steel chain	FDSCS

# FD Series Cylindrical Fluorescent Luminaires

## Standard and Emergency Battery Back-Up. Flameproof

Zone 1 and 2 - 21 and 22  
Gas (G) and Dust (D)

### Wiring Diagram



### Emergency Function Diagram

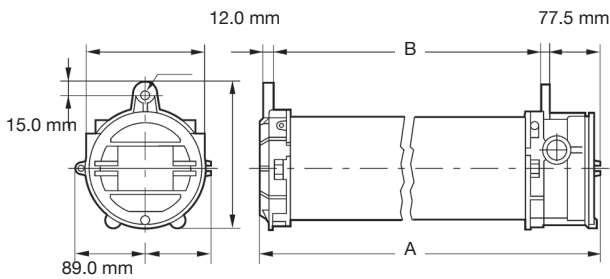
#### Two Lamp Version

Mains	Lighting Switch ON	Lighting Switch OFF
ON		
OFF		

### LED Status

Color	Indication	Function
Green	Blinking 1:1	Mains ok, Batteries are connected, charging
	ON	Mains ok, Batteries are charged
Red	Blinking 1:1	Batteries are not connected or defective
	Flashing 1:1	Batteries are charging and discharging during automatic cycle
	ON	Mains faulty, output ON
	OFF	No mains, Battery empty
Yellow	Blinking 1:1	Mains ok, Performing Self test
	ON	Self test was not ok

### Dimensions in Millimeters



Model	A	B
0.3	430	335
0.6	745	650
1.2	1365	1260
1.5	1655	1560

# FD Series Cylindrical Fluorescent Luminaires

## Standard and Emergency Battery Back-Up. Flameproof

Zone 1 and 2 - 21 and 22  
Gas (G) and Dust (D)

### Photometric Data

Polar curves for a 1000 lm flux, according to NF C 71-120  
Luminaire symbol according to NF C 71-121

--- Longitudinal  
— Transverse

#### Bi-pin (G13) Fluorescent

#### 2G11 Compact Fluorescent

1 x 18 W Efficiency 75.3% NF C 71-121/0: 0.69 H + 0.06 T		2 x 18 W Efficiency 68.1% NF C 71-121: 0.63 G + 0.06 T		3 x 18 W Efficiency 57% NF C 71-121: 0.50 G + 0.07 T		2 x 18 W Efficiency 56.2% NF C 71-121: 0.52 G + 0.04 T					
CANDELA DISTRIBUTION		CANDELA DISTRIBUTION		CANDELA DISTRIBUTION		CANDELA DISTRIBUTION					
0-180	90-270	0-180	90-270	0-180	90-270	0-180	90-270				
0	167	167	0	161	161	0	141	141	0	154	154
5	166	167	5	160	162	5	141	141	5	153	154
10	164	168	10	157	163	10	141	139	10	151	154
15	160	168	15	153	164	15	140	135	15	147	153
20	154	168	20	148	164	20	139	130	20	142	153
25	147	168	25	141	164	25	138	124	25	136	152
30	139	167	30	133	164	30	136	117	30	128	150
35	129	166	35	123	163	35	133	109	35	119	147
40	118	164	40	112	130	40	128	100	40	108	142
45	151	162	45	100	153	45	121	89	45	95	143
50	106	160	50	86	147	50	113	77	50	81	127
55	77	157	55	73	141	55	105	65	55	66	113
60	61	152	60	58	134	60	96	51	60	49	101
65	45	144	65	41	121	65	87	38	65	32	88
70	28	135	70	26	106	70	78	25	70	17	75

1 x 36 W Efficiency 74.3% NF C 71-121/0: 0.69 H + 0.05 T		2 x 36 W Efficiency 61.5% NF C 71-121: 0.57 G + 0.04 T		3 x 36 W Efficiency 53.3% NF C 71-121: 0.47 G + 0.06 T		2 x 36 W Efficiency 53.6% NF C 71-121: 0.50 G + 0.04 T					
CANDELA DISTRIBUTION		CANDELA DISTRIBUTION		CANDELA DISTRIBUTION		CANDELA DISTRIBUTION					
0-180	90-270	0-180	90-270	0-180	90-270	0-180	90-270				
0	164	164	0	149	149	0	132	132	0	140	140
5	163	164	5	148	149	5	132	131	5	139	141
10	161	165	10	146	150	10	132	129	10	137	141
15	157	165	15	142	150	15	131	126	15	134	142
20	151	165	20	137	150	20	131	122	20	129	141
25	145	165	25	131	149	25	131	116	25	124	140
30	137	165	30	124	148	30	128	110	30	117	139
35	127	164	35	114	146	35	125	102	35	109	137
40	116	162	40	104	144	40	120	93	40	99	132
45	104	160	45	93	138	45	114	83	45	89	125
50	91	158	50	81	131	50	107	72	50	77	117
55	76	154	55	68	125	55	99	61	55	65	108
60	61	149	60	54	117	60	91	49	60	52	97
65	45	140	65	40	105	65	82	36	65	38	87
70	30	131	70	26	91	70	74	24	70	24	75

1 x 58 W Efficiency 74.5% NF C 71-121/0: 0.70 H + 0.05 T		2 x 36 W Efficiency 61.5% NF C 71-121: 0.57 G + 0.04 T		3 x 36 W Efficiency 53.3% NF C 71-121: 0.47 G + 0.06 T				
CANDELA DISTRIBUTION		CANDELA DISTRIBUTION		CANDELA DISTRIBUTION				
0-180	90-270	0-180	90-270	0-180	90-270			
0	167	167	0	148	148	0	125	125
5	167	167	5	147	149	5	125	125
10	164	167	10	145	148	10	125	124
15	160	167	15	142	149	15	124	122
20	154	167	20	137	150	20	123	119
25	147	166	25	131	149	25	121	114
30	139	165	30	124	148	30	118	108
35	130	164	35	115	146	35	115	101
40	119	163	40	105	144	40	109	92
45	106	161	45	94	140	45	103	82
50	93	158	50	82	134	50	96	72
55	78	155	55	69	128	55	89	60
60	63	149	60	55	119	60	81	48
65	47	142	65	42	108	65	73	36
70	31	132	70	28	95	70	65	24