

Lighting: Fluorescent Lighting

FD Series: Cylindrical Fluorescent Lighting Fixtures, Standard and Emergency Battery Back-Up – Flameproof



2 x 58 W



2 x 36 W



2 x 18 W

Compliance Data:

ATEX – IECEx:



Zone 1 & 2 – 21 & 22	ATEX	II 2 GD	IECEx	CE
Ex d IIB – Ex d IIC Ex d IIB+H2	T6 to T4	Ex tD A21	T78°C to T130°C	IP66/68 (10 meters)

Power and Voltage:

18 W / 36 W / 58 W	Multiple Voltages	Lamp Type
1, 2, 3 Lamp Versions	220 V-60 Hz / 230 V-60 Hz / 230 V-50 Hz / 240 V-50 Hz 110 to 254 Vac/Vdc +/- 10% 50/60 Hz	Fluorescent: T8 (G13) – T5 (G5) Compact Fluorescent: TC-L (2G11)

Operating Temperature:

-20°C to +55°C

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Applications:

- Can be installed in hazardous areas designated as Zone 1, 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 and general manufacturing facilities.

Features:

- Impact resistant borosilicate glass sealed tube.
- Easy access to lamps through gray painted Zamak threaded entry cap.
- Supplied with O-ring for improved ingress protection.
- Corrosion-resistant gray painted Zamak.
- 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 & 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.



2 x 58 W



2 x 36 W



2 x 18 W

Standard Material of Fixtures:

- Gray painted Zamak end caps and cover.
- Borosilicate glass tube.
- Nitrile (NBR) O-ring gasket.
- White powder coated galvanized steel internal reflector.

Standard Material of Mounting Accessories:

- Several accessories in different material such as zinc plated steel, galvanized steel or 316 stainless steel.

Options:

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

Catalog Number Logic:

FD	X	X	XX	X	X	X
Series: Zone 1 & 2 - 21 & 22 ATEX / IEC certified	Number of Lamps: 1 = Single 2 = Double 3 = Three Lamps		Wattage: 18 = 18 Watt 36 = 36 Watt 58 = 58 Watt		Voltage (50/60 Hz): Standard versions: AA = 220 Vac 60 Hz AC = 230 Vac 60 Hz XC = 230 Vac 50 Hz X3 = 240 Vac 50 Hz BU = 110 to 254 Vac/Vdc 50/60 Hz Emergency versions: BU = 110 to 254 Vac/Vdc 50/60 Hz	
Lamp Type: B = Bi-pin (G13) Fluorescent C = Compact Fluorescent (2G11) F = Bi-pin (G5) Fluorescent	Cable Entry: M = Metric M20 N = NPT 3/4"		Options: (Options must be listed alphabetically) E = 3h Emergency (combined) – Battery 6 V 4 Ah			

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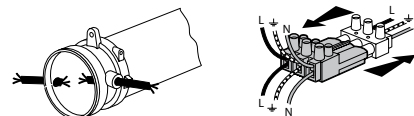
Ordering Information – Standard Versions:

Two M20 threaded entries, supplied with one M20 aluminum blanking plug.
Connection via 1 x 3 double deck terminals.
Capacity (flexible/solid): 0.75 mm² to 2.5 mm².

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

230 V - 50 Hz – Magnetic Ballast – Starter Ignition

Compensated power supply – power factor > 0.9



No. of Lamps	Power (W)	Gas Group	Model	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
1	18	IIC	0.6	9	58	FDB118XCM	–	1
2	18	IIC	0.6	9.7	58	FDB218XCM	–	1
1	36	IIB+H2	1.2	14.7	99	FDB136XCM	–	1
2	36	IIB+H2	1.2	15.3	99	FDB236XCM	–	1
1	58	IIB	1.5	17	119	FDB158XCM	–	1
2	58	IIB	1.5	18.2	119	FDB258XCM	–	1

240 V - 50 Hz – Magnetic Ballast – Starter Ignition

Compensated power supply – power factor > 0.9

1	18	IIC	0.6	9	58	FDB118X3M	094826	1
2	18	IIC	0.6	9.7	58	FDB218X3M	094829	1
1	36	IIB+H2	1.2	14.7	99	FDB136X3M	094827	1
2	36	IIB+H2	1.2	15.3	99	FDB236X3M	094830	1
1	58	IIB	1.5	17	119	FDB158X3M	094828	1
2	58	IIB	1.5	18.2	119	FDB258X3M	094831	1

220 V - 60 Hz – Magnetic Ballast – Starter Ignition

Compensated power supply – power factor > 0.9

2	18	IIC	0.6	9.7	58	FDB218AAM	094809	1
2	36	IIB+H2	1.2	15.3	99	FDB236AAM	094810	1
2	58	IIB	1.5	18.2	119	FDB258AAM	094811	1

230 V - 60 Hz – Magnetic Ballast – Starter Ignition

Compensated power supply – power factor > 0.9

2	18	IIC	0.6	9.7	58	FDB218ACM	094818	1
2	36	IIB+H2	1.2	15.3	99	FDB236ACM	094819	1
2	58	IIB	1.5	18.2	119	FDB258ACM	094820	1

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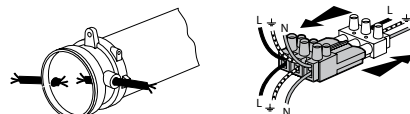
LIGHTING

Ordering Information – Standard Versions – Continued:

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

110 to 254 Vac/Vdc 50/60 Hz – Electronic Ballast

Power factor > 0.95



No. of Lamps	Power (W)	Gas Group	Model	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
2	18	IIC	0.6	9.7	58	FDB218BUM	091807 or 094807	1
2	36	IIB	1.2	15.3	99	FDB236BUM	091808 or 094808	1
3	36	IIB	1.2	16.3	99	FDB336BUM	–	1
1	58	IIB	1.5	17	119	FDB158BUM	091812 or 094812	1
2	58	IIB	1.5	18.2	119	FDB258BUM	091813 or 094813	1
3	58	IIB	1.5	19.2	119	FDB358BUM	–	1

For 2G11 Compact Fluorescent Lamps – TC-L

230 V - 50 Hz – Magnetic Ballast – Starter Ignition

Compensated power supply – power factor > 0.9 – Lamps supplied

1	18	IIC	0.3	9	58	FDC118XCM	–	1
2	18	IIC	0.3	9.7	58	FDC218XCM	–	1
1	36	IIB+H2	0.6	14.7	99	FDC136XCM	–	1
2	36	IIB+H2	0.6	15.3	99	FDC236XCM	–	1

Emergency Versions:

Two M20 threaded entries, supplied with one M20 aluminum blanking plug.

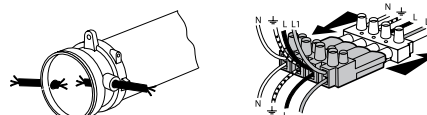
Connection via 1 x 4 double deck terminals.

Capacity (flexible/solid): 0.75 mm² to 2.5 mm².

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

110 to 254 Vac/Vdc 50/60 Hz – Electronic Ballast

3 hour duration - battery pack 6 V 4 Ah - Power factor >0.95 - Self test every month.



No. of Lamps	Power (W)	Gas Group	Model	Line Output	Weight (kg)	Volume (dm ³)	Catalog Number	Old Catalog Number	Pack
2	18	IIC	0.6	29%	11.6	58	FDB218BUME	091815 or 094815	1
2	36	IIB	1.2	16%	17.2	99	FDB236BUME	091816 or 094816	1
2	58	IIB	1.5	11%	20.2	119	FDB258BUME	091817 or 094817	1

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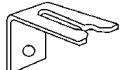
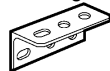
Zone 1 & 2 – 21 & 22

II 2 GD

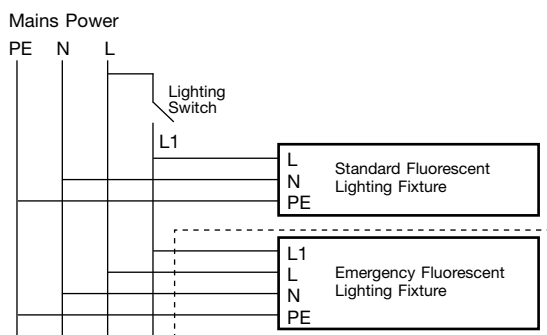
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Accessories:

	Description	Catalog Number	Old Catalog Number	Pack
	External Reflector – White Painted Galvanized Steel			
	Model 0.3	FDER1G	094868	1
	Model 0.6	FDER2G	094869	1
	Model 1.2	FDER3G	094870	1
	Model 1.5	FDER4G	094871	1
	Protective Guard – Zinc Plated Steel			
	Model 0.3	FDPG1Z	094872	1
	Model 0.6	FDPG2Z	094873	1
	Model 1.2	FDPG3Z	094874	1
	Model 1.5	FDPG4Z	094875	1
	Fixing Brackets for Ease of Surface Installation – Set of Two			
	Zinc plated steel	FDFBZ	094897	1
	316 stainless steel	FDFBS	094889	1
	Surface Mounting Brackets – Set of Two			
	Zinc plated steel	FDSBZ	094898	1
	316 stainless steel	FDSBS	094890	1
	Half Clamp Brackets for Pole Mounting – Set of Two			
	dia. 42 to 49 mm pole (1-1/4" to 1-1/2" tube)			
	Zinc plated steel	FDHC49Z	094899	1
	316 stainless steel	FDHC49S	094892	1
	dia. 60 mm pole (2" tube)			
	Zinc plated steel	FDHC60Z	094891	1
	316 stainless steel	FDHC60S	094893	1
Fall Prevention Kit				
	1.20 M stainless steel chain	FDSCS	093819	1

Wiring Diagram:



Emergency Function Diagram:

Mains	Lighting Switch OFF	Lighting Switch ON
Switched ON		
Switched OFF		

LED status:

Color	Indication	Function
Green	Blinking 1:1	Mains good, battery quick charging
	ON	Mains good, battery trickle charging
Red	Blinking 1:1	No battery connected or something is defective
	Flashing 1:10	Mains faulty, battery empty or lamp defective
	ON	Mains faulty, output ON
	OFF	No mains, battery completely empty
Yellow	Blinking 1:1	Mains good, performing self test
	ON	Result of self test was not good

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Compliances:

Hazardous Area	Gas	Dust
Certified Type	FLd	
Zones	1–2	21–22
Conforming to ATEX 94/9/CE	CE 0081 Ex II 2 G	CE 0081 Ex II 2 D
Symbol of Protection ATEX	Ex d IIB / Ex d IIB+H2 Ex d IIC	Ex tD A21
Symbol of Protection IEC		
T Rating	See table	N.A.
Surface Temperature	N.A.	See table
Ambient Temperature	-20°C to +55°C	
CE Declaration of Conformity	50203	
ATEX Certificate	LCIE 97 ATEX 6012	
IECEx Certificate	IECEx LCI 04.0018	
Other Certifications	GOST	
Index of Protection (solid and liquid)	IP66/68	
Impact Resistance (shock)	IK08	
Internal Volume	> 2 dm ³ (2 liters)	

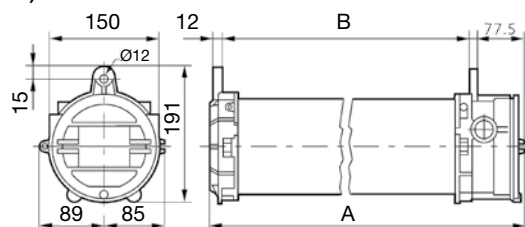
Standards:

Ex standards	EN / IEC 60079-0; 60079-1; 61241-0; 61241-1
Product standards	EN / IEC 60598-1; 60598-2-22
EMC standards	EN / IEC 55015; 61547
Other standards	EN / IEC 60529 (IP); 62262 (IK)

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	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

Dimensions (mm):



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

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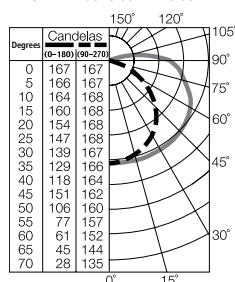
Photometric Data:

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

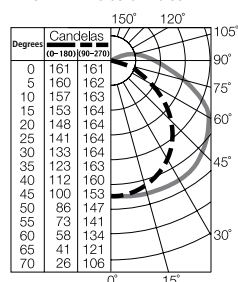
--- Longitudinal
— Transverse

Bi-pin (G13) Fluorescent Lighting Fixtures

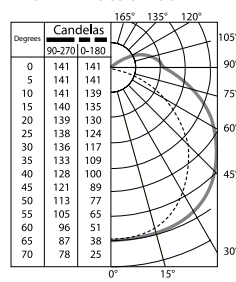
1 x 18 W
Efficiency 75.3%
NF C 71-121/0: 0.69 H + 0.06 T



2 x 18 W
Efficiency 68.1%
NF C 71-121: 0.63 G + 0.06 T

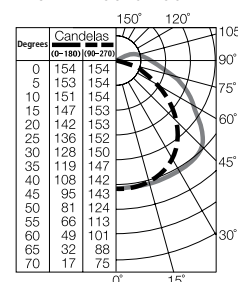


3 x 18 W
Efficiency 57%
NF C 71-121: 0.50 G + 0.07 T

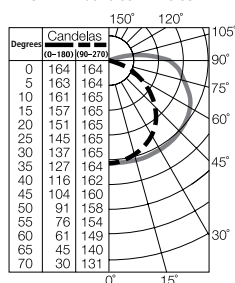


2G11 Compact Fluorescent Lighting Fixtures

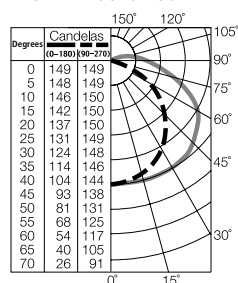
2 x 18 W
Efficiency 56.2%
NF C 71-121: 0.52 G + 0.04 T



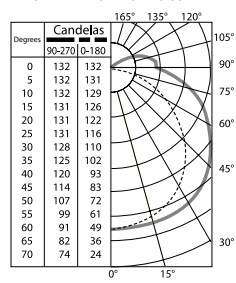
1 x 36 W
Efficiency 74.3%
NF C 71-121/0: 0.69 H + 0.05 T



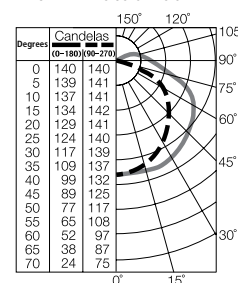
2 x 36 W
Efficiency 61.5%
NF C 71-121: 0.57 G + 0.04 T



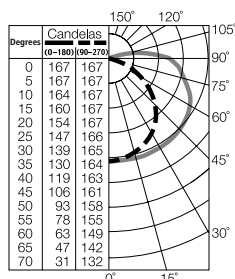
3 x 36 W
Efficiency 53.3%
NF C 71-121: 0.47 G + 0.06 T



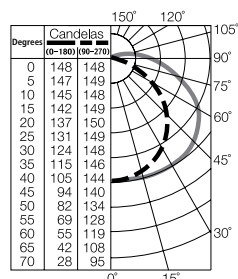
2 x 36 W
Efficiency 53.6%
NF C 71-121: 0.50 G + 0.04 T



1 x 58 W
Efficiency 74.5%
NF C 71-121/0: 0.70 H + 0.05 T



2 x 58 W
Efficiency 61.3%
NF C 71-121: 0.57 H + 0.04 T



3 x 58 W
Efficiency 48.5%
NF C 71-121: 0.44 G + 0.05 T

