

Explosion protected and industrial light fittings

CEAG Products



LED - the safe light for every application
Explosion protected and industrial light fittings in LED technique



Crouse-Hinds
by **EAT•N**

LED high bay light fittings of the series VMV/PVM

(Ex-Zone 2, 21, 22 and industrial applications)

The powerful high bay light fittings with LED technology VMV/PVM

3/5/7/9/11/13/17/21/25 L

The energy-saving VMV/PVM light fittings with LED technology are ideal for all general lighting applications in hazardous areas in Zone 2, hazardous dust areas in Zones 21 and 22 and for harsh industrial applications. With the integrated high-power LED technology, these lights can be used to replace comparable conventional light sources with an equivalent capacity of up to 1000 W.

LED technology for heavy-duty use

Due to the particularly solid construction of the housing and the vibration resistance of the LED module, the VMV/PVM is resistant to impact, shock and vibration. As a result, it represents the ideal lighting concept for use in areas with difficult environmental conditions. Thanks to the non-sensitive LED technology, even extreme temperatures from -40 °C up to +55 °C are not a problem. The robust, powder-coated light metal housing in the degree of protection IP66 and the impact-resistant lens meet the highest corro-

sion protection and mechanical resistance requirements. The advantages of the integrated, advanced LED technology with a high luminous flux and, at the same time, an extremely low energy consumption are a long service life and a high level of efficiency. With a power consumption of 41 W up to 232 W, it is ideal for replacing 70 W to 1000 W light fittings with high pressure lamps. The use of multiple drivers in the fixture design ensures an improved safety and reliability even in most critical situations.

The best lighting technology for many application

The VMV/PVM LED light fittings are available with 3 different custom optics:

- Type V has a symmetric light distribution and is optimized for general area illumination.
- Type III has an asymmetrical light distribution and is, therefore, suitable for near-edge mounting (wall mounting) for surface illumination
- Type I has a narrow light distribution and is ideal for lighting roads and pathways

Features

- High power LED modules
- Multiple drivers
- High efficient heat sink design for optimized thermal management
- Wide temperature range according to type from -40 °C up to +55 °C
- High degree of protection IP66 for harsh environments



Ordering details

VMV LED for Ex-Zone 2, 21 and 22



Ordering details

Type	Lamp / Illuminant	Rated luminous flux of the luminaire	Weight	Cable gland/ thread	Screw plugs	Enclosure type	Order No.
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VMV LED lamp module with LEDs (without top mounting module, please order separately)

VMV LED 3L	41 W Type V	3515 lm	8.1 kg	–	–	1	1 2364 745
VMV LED 5L	67 W Type V	5288 lm	8.1 kg	–	–	1	1 2364 746
VMV LED 7L	94 W Type V	7404 lm	8.1 kg	–	–	1	1 2365 201
VMV LED 9L	114 W Type V	9515 lm	8.1 kg	–	–	1	1 2365 202
VMV LED 11L	118 W Type V	10935 lm	8.1 kg	–	–	1	1 2396 576
VMV LED 13L	130 W Type V	13266 lm	16.3 kg	–	–	2	1 2442 415
VMV LED 17L	168 W Type V	18793 lm	16.3 kg	–	–	2	1 2442 952
VMV LED 21L	196 W Type V	22110 lm	20.0 kg	–	–	3	1 2442 986
VMV LED 25L	232 W Type V	26531 lm	20.0 kg	–	–	3	1 2442 020
VMV LED 3L	41 W Type I	3115 lm	8.1 kg	–	–	1	1 2374 698
VMV LED 5L	67 W Type I	4687 lm	8.1 kg	–	–	1	1 2375 046
VMV LED 7L	94 W Type I	6562 lm	8.1 kg	–	–	1	1 2375 106
VMV LED 9L	114 W Type I	8437 lm	8.1 kg	–	–	1	1 2375 186
VMV LED 11L	118 W Type I	9692 lm	8.1 kg	–	–	1	1 2401 259
VMV LED 13L	130 W Type I	12842 lm	16.3 kg	–	–	2	1 2442 930
VMV LED 17L	168 W Type I	18195 lm	16.3 kg	–	–	2	1 2442 963
VMV LED 21L	196 W Type I	21404 lm	20.0 kg	–	–	3	1 2442 997
VMV LED 25L	232 W Type I	25685 lm	20.0 kg	–	–	3	1 2442 031
VMV LED 3L	41 W Type III	3271 lm	8.1 kg	–	–	1	1 2374 782
VMV LED 5L	67 W Type III	4921 lm	8.1 kg	–	–	1	1 2375 047
VMV LED 7L	94 W Type III	6890 lm	8.1 kg	–	–	1	1 2375 107
VMV LED 9L	114 W Type III	8859 lm	8.1 kg	–	–	1	1 2375 187
VMV LED 11L	118 W Type III	10177 lm	8.1 kg	–	–	1	1 2402 998
VMV LED 13L	130 W Type III	12493 lm	16.3 kg	–	–	2	1 2442 941
VMV LED 17L	168 W Type III	17699 lm	16.3 kg	–	–	2	1 2442 974
VMV LED 21L	196 W Type III	20822 lm	20.0 kg	–	–	3	1 2442 909
VMV LED 25L	232 W Type III	24987 lm	20.0 kg	–	–	3	1 2442 042

VMV LED top mounting module, (without lamp module, please order separately)

JM5 ¹⁾	top mounting module for 1 1/2" pole mounting, 25°	1.6 kg	1 x 3/4" thread	–	–		22 250
PM5	top mounting module for 1 1/2" pole mounting, straight	2.0 kg	1 x 3/4" thread	–	–		00 080
CM20	top mounting module with M20 ceiling mounting	1.3 kg	4 x M20 thread	4 x M20	–		1 1832 237
CM25	top mounting module with M25 ceiling mounting	1.3 kg	4 x M25 thread	4 x M25	–		1 1669 290
TWM20	top mounting module with M20 wall mounting	2.0 kg	4 x M20 thread	4 x M20	–		1 1843 088
TWM25	top mounting module with M25 wall mounting	2.0 kg	4 x M25 thread	4 x M25	–		1 2455 089
S812	mounting bracket (can only be used with top mounting module CM20 or CM25)	1.0 kg	–	–	–		1 2268 927

¹⁾ for VMV 3L-11L only

Scope of delivery without fixing accessories, if not stated otherwise.
Metal cable glands see main catalogue part 2: 2.3.12 ff



Enclosure type 1



Enclosure type 2



Enclosure type 3








Ordering details

PVM LED for Industrial applications



Ordering details

Type	Lamp / Illuminant	Rated luminous flux of the luminaire	Weight	Cable gland/ thread	Screw plug	Enclosure size	Order No.
PVM LED lamp module with LEDs (without top mounting module, please order separately)							
 Enclosure size 1	PVM LED 3L	41 W Type V	3515 lm	8.1 kg	–	–	1 2404 400
	PVM LED 5L	67 W Type V	5288 lm	8.1 kg	–	–	1 2407 746
	PVM LED 7L	94 W Type V	7404 lm	8.1 kg	–	–	1 2407 745
	PVM LED 9L	114 W Type V	9515 lm	8.1 kg	–	–	1 2409 889
	PVM LED 11L	118 W Type V	10935 lm	8.1 kg	–	–	1 2408 233
 Enclosure size 2	PVM LED 13L	130 W Type V	13266 lm	16.3 kg	–	–	1 2429 488
	PVM LED 17L	168 W Type V	18793 lm	16.3 kg	–	–	1 2430 349
	PVM LED 21L	196 W Type V	22110 lm	20.0 kg	–	–	1 2430 452
	PVM LED 25L	232 W Type V	26531 lm	20.0 kg	–	–	1 2430 455
	 Enclosure size 3	PVM LED 3L	41 W Type I	3115 lm	8.1 kg	–	–
PVM LED 5L		67 W Type I	4687 lm	8.1 kg	–	–	1 2414 517
PVM LED 7L		94 W Type I	6562 lm	8.1 kg	–	–	1 2414 526
PVM LED 9L		114 W Type I	8437 lm	8.1 kg	–	–	1 2414 534
PVM LED 11L		118 W Type I	9692 lm	8.1 kg	–	–	1 2414 542
PVM LED 13L		130 W Type I	12842 lm	16.3 kg	–	–	1 2430 347
PVM LED 17L		168 W Type I	18195 lm	16.3 kg	–	–	1 243 450
PVM LED 21L		196 W Type I	21404 lm	20.0 kg	–	–	1 2430 453
PVM LED 25L		232 W Type I	25685 lm	20.0 kg	–	–	1 2430 456
 Enclosure size 3		PVM LED 3L	41 W Type III	3271 lm	8.1 kg	–	–
	PVM LED 5L	67 W Type III	4921 lm	8.1 kg	–	–	1 2414 518
	PVM LED 7L	94 W Type III	6890 lm	8.1 kg	–	–	1 2407 564
	PVM LED 9L	114 W Type III	8859 lm	8.1 kg	–	–	1 2414 535
	PVM LED 11L	118 W Type III	10177 lm	8.1 kg	–	–	1 2414 543
	PVM LED 13L	130 W Type III	12493 lm	16.3 kg	–	–	1 2430 348
	PVM LED 17L	168 W Type III	17699 lm	16.3 kg	–	–	1 2430 451
	PVM LED 21L	196 W Type III	20822 lm	20.0 kg	–	–	1 2430 454
	PVM LED 25L	232 W Type III	24987 lm	20.0 kg	–	–	1 2430 457
	PVM LED top mounting module, (without lamp module, please order separately)						
	JM5 ¹⁾	top mounting module for 1 1/2" pole mounting, 25°	1.6 kg	1 x 3/4" thread	–	–	22 250
	PM5	top mounting module for 1 1/2" pole mounting, straight	2.0 kg	1 x 3/4" thread	–	–	00 080
	CM20	top mounting module with M20 ceiling mounting	1.3 kg	4 x M20 thread	4 x M20	–	1 1843 088
	CM25	top mounting module with M25 ceiling mounting	1.3 kg	4 x M25 thread	4 x M25	–	1 1669 290
	TWM20	top mounting module with M20 wall mounting	2.0 kg	4 x M20 thread	4 x M20	–	1 1832 237
	TWM25	top mounting module with M25 wall mounting	2.0 kg	4 x M25 thread	4 x M25	–	1 2455 089
	S812	mounting bracket (can only be used with top mounting module CM20 or CM25)	1.0 kg	–	–	–	1 2268 927

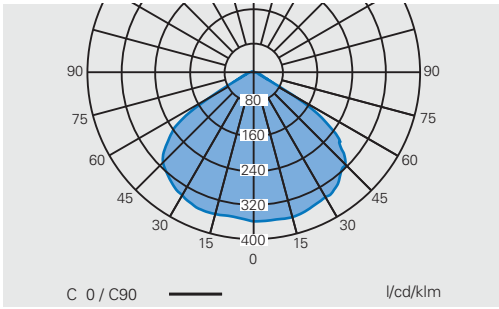
¹⁾ for PVM 3L-11L only

Scope of delivery without lamp and fixing accessories, if not stated otherwise.
Metal cable glands see catalogue part 2: 2.3.12 ff

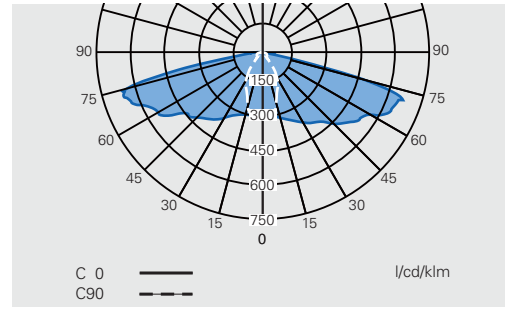
Polar curve/Dimension drawing

VMV LED /PVM LED

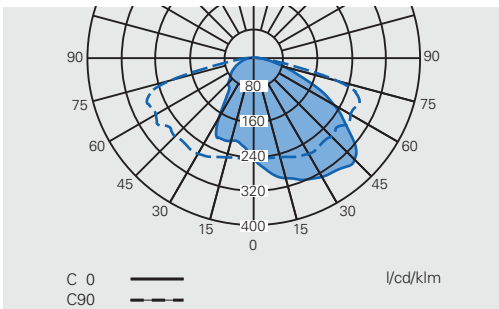
Polar curve VMV LED Type V



Polar curve VMV LED Type I

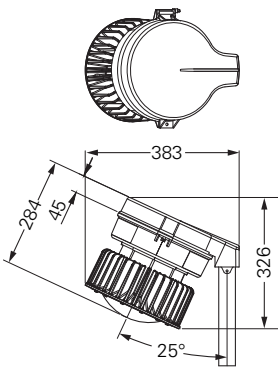


Polar curve VMV LED Type III

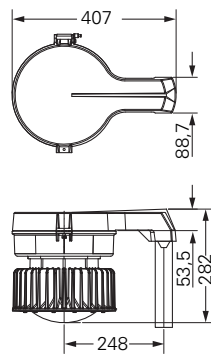


Dimension drawing VMV LED

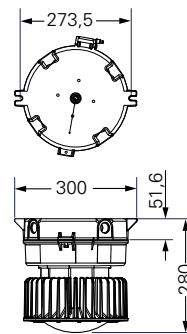
with top mounting module JM5



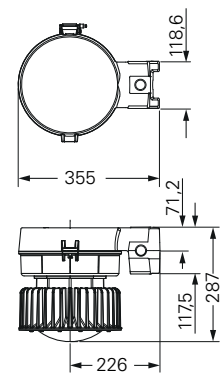
with top mounting module PM5



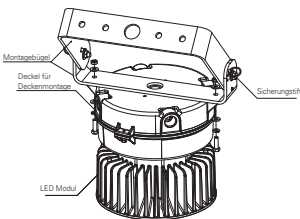
with top mounting module CM25



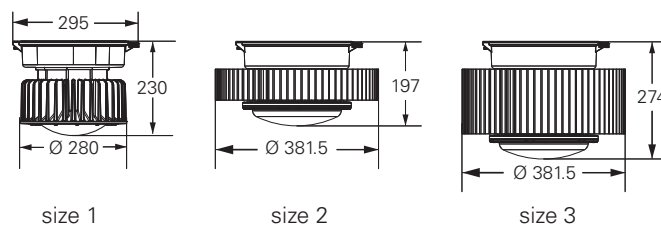
with top mounting module TWM25



Mounting bracket S812



Lamp modules



Dimensions in mm

Technical data

VMV LED for Ex-Zone 2, 21 and 22



Technical data

	VMV LED 3L - 11L	VMV LED 13L - 17L	VMV LED 20L - 25L
Type Examination Certificate	DEMKO 13 ATEX 1305741X	DEMKO 14 ATEX 1324722X	DEMKO 14 ATEX 1324722X
EC-Type Examination Certificate	DEMKO 13 ATEX 1475031X	DEMKO 14 ATEX 2274231X	DEMKO 14 ATEX 2274231X
IECEx Certificate of Conformity	IECEx UL 13.0052X	IECEx UL 14.0031X	IECEx UL 14.0031X
Marking accd. to 94/9/EC	D II 3 G Ex nA nR IIC T6/T5 Gc D II 2 D Ex tb IIIC T87/72°C Db IP66	D II 3 G Ex nA nR IIC T6/T5 Gc D II 2 D Ex tb IIIC T87/72°C Db IP66	D II 3 G Ex nA nR IIC T6/T5 Gc D II 2 D Ex tb IIIC T87/72°C Db IP66
Marking accd. to IECEx	Ex nA nR IIC T6 Gc / Ex tb IIIC T87°C/T72 °C Db IP66	Ex nA nR IIC T6/T5 Gc / Ex tb IIIC T81°C/T66 °C Db IP66	Ex nA nR IIC T6/T5 Gc / Ex tb IIIC T86°C/T71 °C Db IP66
Permissible ambient temperature	-40 °C up to +55 °C	-40 °C up to +55 °C	-40 °C up to +55 °C
Lifetime fixture	170,000 h at $t_a = +25$ °C 60,000 h at $t_a = +55$ °C	170,000 h at $t_a = +25$ °C 60,000 h at $t_a = +55$ °C	170,000 h at $t_a = +25$ °C 60,000 h at $t_a = +55$ °C
Rated voltage	100 - 277 V AC ²⁾	100 - 277 V AC; 108 - 250 VDC	100 - 277 V AC; 108 - 250 VDC
Frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Power	¹⁾	¹⁾	¹⁾
Power factor cos ϕ	>0.9	>0.9	>0.9
Circuit	electronic driver	electronic driver	electronic driver
Protection class	I	I	I
Lamp / Illuminant	LED System, scope of delivery	LED System, scope of delivery	LED System, scope of delivery
Light colour	5000 K, 3000 K on request	5000 K, 3000 K on request	5000 K, 3000 K on request
Rated luminous flux of the luminaire	¹⁾	¹⁾	¹⁾
Dimensions (L x W x H)	280 x 295 x 230 mm	381 x 381 x 197 mm	381 x 381 x 274 mm
Connecting terminals	L, N, PE max. 2 x 2.5 mm ²	L, N, PE max. 2 x 2.5 mm ²	L, N, PE max. 2 x 2.5 mm ²
Enclosure colour	grey/black	grey/black	grey/black
Enclosure material	Copper-free aluminium with epoxy-powder coating	Copper-free aluminium with epoxy-powder coating	Copper-free aluminium with epoxy-powder coating
Weight	8.1 kg	16.3 kg	20.0 kg
Degree of protection accd. to EN 60529	IP66	IP66	IP66
Protective cover / protective bowl	Heat- and impact-resistant glass	Heat- and impact-resistant glass	Heat- and impact-resistant glass

¹⁾ see table luminaire data

²⁾ 108 - 250 VDC on request

Additional luminaire data

Type	Power	luminous flux of the luminaire type V	Temperature class II 3 G		max. surface temp. II 2 D	
			TU ≤ 40 °C	TU ≤ 55 °C	TU ≤ 40 °C	TU ≤ 55 °C
VMV LED						
VMV 3L LED	41 W	3515 lm	T6	T5	T72 °C	T87 °C
VMV 5L LED	67 W	5288 lm	T6	T5	T72 °C	T87 °C
VMV 7L LED	94 W	7404 lm	T6	T5	T72 °C	T87 °C
VMV 9L LED	114 W	9515 lm	T6	T5	T72 °C	T87 °C
VMV 11L LED	118 W	10935 lm	T6	T5	T72 °C	T87 °C
VMV 13L LED	131 W	13226 lm	T6	T5	T66 °C	T81 °C
VMV 17L LED	168 W	18793 lm	T6	T5	T66 °C	T81 °C
VMV 20L LED	196 W	22110 lm	T6	T5	T71 °C	T86 °C
VMV 25L LED	232 W	26531 lm	T6	T5	T71 °C	T86 °C

Technical data

PVM LED for industrial applications



Technical data

	PVM LED 3L - 11L	PVM LED 13L - 17L	PVM LED 20L - 25L
Permissible ambient temperature	-40 °C up to +55 °C	-40 °C up to +55 °C	-40 °C up to +55 °C
Lifetime fixture	170,000 h at $t_a = +25$ °C 60,000 h at $t_a = +55$ °C	170,000 h at $t_a = +25$ °C 60,000 h at $t_a = +55$ °C	170,000 h at $t_a = +25$ °C 60,000 h at $t_a = +55$ °C
Rated voltage	100 - 277 V AC ²⁾	100 - 277 V AC; 108 - 250 VDC	100 - 277 V AC; 108 - 250 VDC
Frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Power	¹⁾	¹⁾	¹⁾
Power factor cos ϕ	>0.9	>0.9	>0.9
Circuit	electronic driver	electronic driver	electronic driver
Protection class	I	I	I
Lamp / Illuminant	LED System, scope of delivery	LED System, scope of delivery	LED System, scope of delivery
Light colour	5000 K, 3000 K on request	5000 K, 3000 K on request	5000 K, 3000 K on request
Rated luminous flux of the luminaire	¹⁾	¹⁾	¹⁾
Dimensions (L x W x H)	280 x 295 x 230 mm	381 x 381 x 197 mm	381 x 381 x 274 mm
Connecting terminals	L, N, PE max. 2 x 2.5 mm ²	L, N, PE max. 2 x 2.5 mm ²	L, N, PE max. 2 x 2.5 mm ²
Enclosure colour	grey/black	grey/black	grey/black
Enclosure material	Copper-free aluminium with epoxy-powder coating	Copper-free aluminium with epoxy-powder coating	Copper-free aluminium with epoxy-powder coating
Weight	8.1 kg	16.3 kg	20.0 kg
Degree of protection accd. to EN 60529	IP66	IP66	IP66
Protective cover / protective bowl	Heat- and impact-resistant glass	Heat- and impact-resistant glass	Heat- and impact-resistant glass

¹⁾ see table luminaire data

²⁾ 108 - 250 VDC on request

Additional luminaire data

Type	Power	Luminous flux of the luminaire type V
PVM LED		
PVM 3L LED	41 W	3515 lm
PVM 5L LED	67 W	5288 lm
PVM 7L LED	94 W	7404 lm
PVM 9L LED	114 W	9515 lm
PVM 11L LED	118 W	10935 lm
PVM 13L LED	131 W	13226 lm
PVM 17L LED	168 W	18793 lm
PVM 20L LED	196 W	22110 lm
PVM 25L LED	232 W	26531 lm

Floodlights of the series NFMV/PFM LED

(Ex-Zone 2, 22 and industrial applications)

The powerful LED floodlights NFMV/PFM LED

The energy-saving NFMV/PFM floodlights in LED technology are ideal for all general lighting applications in explosive gas atmospheres in Zone 2 and in explosive dust atmospheres in Zone 22 (NFMV) and for harsh industrial environment (PFM). These light fittings with the integrated high-power LED technology can be used to replace comparable conventional light sources with an equivalent power of 100 W to 1500 W.

LED technology for harsh environments

Due to the particularly solid construction of the housing and the vibration resistance of the LED module, the NFMV/PFM floodlight is resistant to

impact, shock and vibration. As a result, it represents the ideal lighting concept for use in areas with difficult environmental conditions. Thanks to the non-sensitive LED technology, even extreme temperatures from -40 °C up to +55 °C are not a problem. The robust, powder coated light metal housing in the degree of protection IP 66 and an impact-resistant lens meet the highest corrosion protection and mechanical resistance requirements. The advantages of the integrated, advanced LED technology with a high luminous flux and, at the same time, an extremely low energy consumption are a long service life and a high level of efficiency. With a power consumption from 64 W up to 531 W, it is ideal for the replacement of 100 W to 1500 W light fittings with high pressure lamps.

Wide range of applications

The particularly rugged construction, the high degree of protection and the wide temperature range make these light fittings particularly suitable for offshore applications, in the oil and gas industry and in chemical plants, where explosive atmospheres are to be expected. Further applications include use in explosive gas atmospheres in Zone 2 areas such as oil refineries, ships and drilling platforms, chemical, petrochemical and LNG facilities, waste and wastewater facilities, as well as industrial applications indoors and outdoors. Applications in explosive dust atmospheres in Zone 22 include flour mills, sugar mills, food production, wood processing and other plants with combustible dusts. The PFM series are the perfect floodlight for all harsh industrial applications, where availability and performance are expected. The floodlights feature an adjustable mounting bracket and are suitable for wall and ceiling mounting in medium and large suspension heights. Accessories for pole mounting are also available.

Features

- High power LED modules
- Heat sink design
- Wide temperature range according to type from -40 °C up to +55 °C
- High degree of protection IP66 for harsh environments



Ordering details

NFMV LED for Ex-Zone 2 and 22



Ordering details



Type	Lamp / illuminant	Rated luminous flux of the luminaire	Weight	Cable gland/ thread	Screw plug	Order No.
NFMV 5 - 13 LED						
NFMV 5L CY/UNV1 76 M20	LED System 64 W ¹⁾	4386 lm	17.7 kg	2 x M20, metal thread, 1 x M20 cable gland Ø 10 - 16 mm	1 x M20	1 2340 323
NFMV 7L CY/UNV1 76 M20	LED System 89 W ¹⁾	6720 lm	17.7 kg	2 x M20, metal thread, 1 x M20 cable gland Ø 10 - 16 mm	1 x M20	1 2313 518
NFMV 7L CY/UNV1 76 M25	LED System 89 W ¹⁾	6720 lm	17.7 kg	2 x M25, metal thread, 1 x M25 cable gland Ø 10 - 16 mm	1 x M25	1 2424 853
NFMV 9L CY/UNV1 76 M20	LED System 121 W ¹⁾	8478 lm	18.0 kg	2 x M20, metal thread, 1 x M20 cable gland Ø 10 - 16 mm	1 x M20	1 2311 134
NFMV 9L CY/UNV1 76 M25	LED System 121 W ¹⁾	8478 lm	18.0 kg	2 x M25, metal thread, 1 x M25 cable gland Ø 10 - 16 mm	1 x M25	1 2427 454
NFMV 11L CY/UNV1 76 M20	LED System 149 W ¹⁾	10420 lm	18.3 kg	2 x M20, metal thread, 1 x M20 cable gland Ø 10 - 16 mm	1 x M20	1 2263 524
NFMV 11L CY/UNV1 76 M25	LED System 149 W ¹⁾	10420 lm	18.3 kg	2 x M25, metal thread, 1 x M25 cable gland Ø 10 - 16 mm	1 x M25	1 2379 963
NFMV 13L CY/UNV1 76 M20	LED System 179 W ¹⁾	12940 lm	18.3 kg	2 x M20, metal thread, 1 x M20 cable gland Ø 10 - 16 mm	1 x M20	1 2340 329
NFMV 13L CY/UNV1 76 M25	LED System 179 W ¹⁾	12940 lm	18.3 kg	2 x M25, metal thread, 1 x M25 cable gland Ø 10 - 16 mm	1 x M25	1 2379 961

¹⁾scope of delivery

Accessories



Type	Content	Part-No.	Order No.
Slip fitter 2" for pole mounting	SFA6	2049	3 2346 001 002

Metal cable glands see catalogue part 2: 2.3.12 ff

Ordering details

PFM LED for industrial applications



Ordering details



Type	Lamp / illuminant	Rated luminous flux of the luminaire	Weight	Cable gland/ thread	Screw plug	Order No.
PFM 5 - 13 LED						
PFM 5L CY/UNV1 76 M20	LED System 64 W ¹⁾	4386 lm	17.7 kg	2 x M20, metal thread, 1 x M20 cable gland Ø 10 - 16 mm	1 x M20	1 2331 294
PFM 5L CY/UNV1 76 M25	LED System 64 W ¹⁾	4386 lm	17.7 kg	2 x M25, metal thread, 1 x M25 cable gland Ø 10 - 16 mm	1 x M25	1 2331 296
PFM 7L CY/UNV1 76 M20	LED System 89 W ¹⁾	6720 lm	17.7 kg	2 x M20, metal thread, 1 x M20 cable gland Ø 10 - 16 mm	1 x M20	1 2331 292
PFM 7L CY/UNV1 76 M25	LED System 89 W ¹⁾	6720 lm	17.7 kg	2 x M25, metal thread, 1 x M25 cable gland Ø 10 - 16 mm	1 x M25	1 2331 293
PFM 9L CY/UNV1 76 M20	LED System 121 W ¹⁾	8478 lm	18.0 kg	2 x M20, metal thread, 1 x M20 cable gland Ø 10 - 16 mm	1 x M20	1 2331 290
PFM 9L CY/UNV1 76 M25	LED System 121 W ¹⁾	8478 lm	18.0 kg	2 x M25, metal thread, 1 x M25 cable gland Ø 10 - 16 mm	1 x M25	1 2331 291
PFM 11L CY/UNV1 76 M20	LED System 149 W ¹⁾	10420 lm	18.3 kg	2 x M20, metal thread, 1 x M20 cable gland Ø 10 - 16 mm	1 x M20	1 2331 259
PFM 11L CY/UNV1 76 M25	LED System 149 W ¹⁾	10420 lm	18.3 kg	2 x M25, metal thread, 1 x M25 cable gland Ø 10 - 16 mm	1 x M25	1 2331 257
PFM 13L CY/UNV1 76 M20	LED System 179 W ¹⁾	12940 lm	18.3 kg	2 x M20, metal thread, 1 x M20 cable gland Ø 10 - 16 mm	1 x M20	1 2463 890
PFM 13L CY/UNV1 76 M25	LED System 179 W ¹⁾	12940 lm	18.3 kg	2 x M25, metal thread, 1 x M25 cable gland Ø 10 - 16 mm	1 x M25	1 2463891
PFM 25 LED						
PFM 25L CY/UNV1 76 M25	LED System 263 W ¹⁾	26240 lm	23.6 kg	2 x M25, metal thread, 1 x M25 cable gland Ø 10 - 16 mm	1 x M25	1 2433 691
PFM 50 LED						
PFM 50L CY/UNV1 76 M25	LED System 531 W ¹⁾	53890 lm	48.1 kg	2 x M25, metal thread, 1 x M25 cable gland Ø 10 - 16 mm	1 x M25	1 2442 808

¹⁾ scope of delivery



Accessories



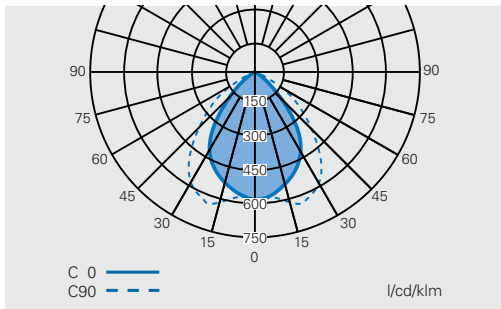
Type	Content	Part-No.	Order No.
Slip fitter 2" for pole mounting	SFA6	2049	3 2346 001 002

Metal cable glands see catalogue part 2: 2.3.12 ff

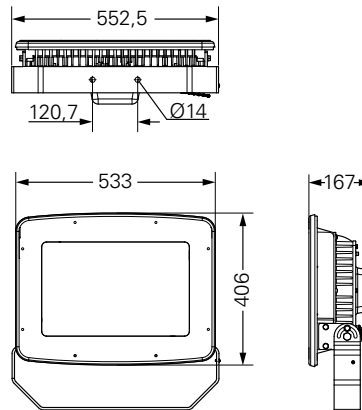
Dimension drawing / Polar curve

NFMV / PFM

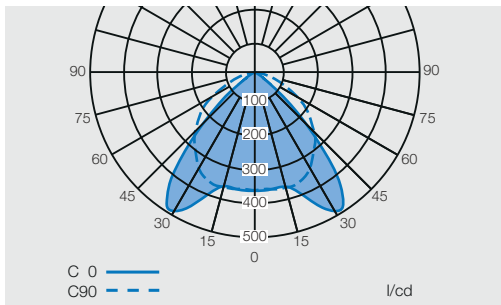
Polar curve NFMV/PFM LED



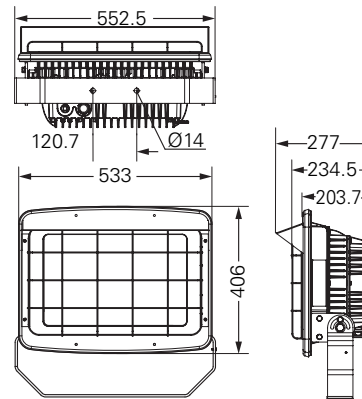
NFMV LED



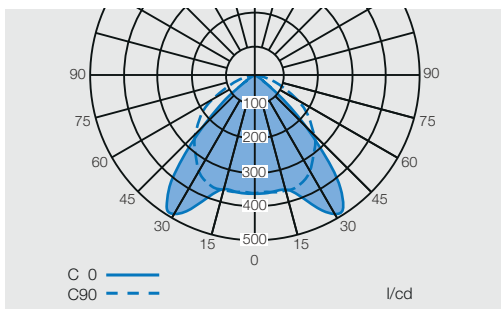
Polar curve PFM 25 LED



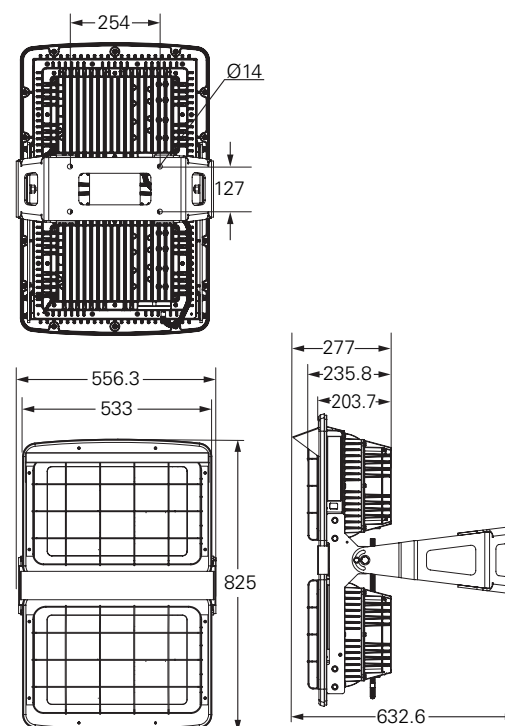
PFM 25 LED



Polar curve PFM 50 LED



PFM 50 LED



Dimensions in mm

Technical data

NFMV LED for Ex-Zone 2 and 22



Technical data

NFMV LED

Type Examination Certificate	DEMKO 12 ATEX 115535X
IECEX Certificate of Conformity	IECEX UL 11.0054X
Marking accd. to 94/9/EC	D II 3 G Ex nA nR IIC T4/T5 Gc D II 3 D Ex tc IIIC T68°C Dc IP66
Marking accd. to IECEx	Ex nA nR IIC T4/T5 Gc Ex tc IIIC T68°C Dc IP66
Permissible ambient temperature	-30 °C up to +55 °C
Lifetime fixture	60,000 h at $t_a = +55$ °C
Rated voltage	100 - 277 V AC / 108 - 250 V DC
Frequency	50 - 60 Hz
Power factor $\cos \varphi$	≥ 0.85
Circuit	electronic driver
Protection class	I
Lamp / Illuminant	LED System 64 - 179 W
Light colour	5600 K, 3000 K on request
Dimensions (L x W x H)	533 x 167 x 406 mm
Connecting terminals	L, N and PE; 2 x 4 mm ²
Enclosure colour	grey
Enclosure material	light alloy with powder coating
Weight	see table luminaire data
Cable glands / gland plates / enclosure drilling	2 x M20 x 1.5, 1 x M20 plugged or 2 x M25 x 1.5, 1 x M25 plugged ¹⁾
Type of mounting	mounting bracket
Degree of protection accd. to EN 60529	IP66
Protective cover / protective bowl	borosilicate glass

¹⁾ see ordering details

Additional luminaire data

Type	Power	Weight	Rated luminous flux of the luminaire	Temperature class II 2 G	
				Ta ≤ 40 °C	Ta ≤ 55 °C
NFMV LED					
NFMV 5L LED	64 W	17.7 kg	4386 lm	T5	T4
NFMV 7L LED	89 W	17.7 kg	6720 lm	T5	T4
NFMV 9L LED	121 W	18.0 kg	8478 lm	T5	T4
NFMV 11L LED	149 W	18.3 kg	10420 lm	T5	T4
NFMV 13L LED	179 W	18.3 kg	12940 lm	T5	T4

Technical data

PFM LED for industrial applications



Technical data



	PFM 5 - 13 LED	PFM 25 LED	PFM 50 LED
Permissible ambient temperature	-40 °C up to +55 °C	-40 °C up to +40 °C	-40 °C up to +40 °C
Lifetime fixture	60,000 h at t _a = +55 °C	60,000 h at t _a = +40 °C	60,000 h at t _a = +40 °C
Rated voltage	100 - 277 V AC / 108 - 250 V DC	120 - 277, 277 - 480 V AC ²⁾ 127 - 250 V DC	120 - 277, 277 - 480 V AC ²⁾ 127 - 250 V DC
Frequency	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Power factor cos φ	≥ 0.85	> 0.9	> 0.9
Circuit	electronic driver	electronic driver	electronic driver
Protection class	I	I	I
Lamp / Illuminant	LED System 64 - 179 W	LED System 263 W	LED System 531 W
Light colour	5600 K, 3000 K on request	5600 K, 3000 K on request	5600 K, 3000 K on request
Dimensions (L x W x H)	533 x 167 x 406 mm	533 x 204 x 406 mm	533 x 204 x 825 mm
Connecting terminals	L, N and PE; 2 x 4 mm ²	L, N and PE; 2 x 4 mm ²	L, N and PE; 2 x 4 mm ²
Enclosure colour	grey	grey	grey
Enclosure material	light alloy with powder coating	light alloy with powder coating	light alloy with powder coating
Weight	see table luminaire data	see table luminaire data	see table luminaire data
Cable glands / gland plates / enclosure drilling	2 x M20 x 1.5, 1 x M20 plugged or 2 x M25 x 1.5, 1 x M25 plugged ¹⁾	2 x M20 x 1.5, 1 x M20 plugged or 2 x M25 x 1.5, 1 x M25 plugged ¹⁾	2 x M20 x 1.5, 1 x M20 plugged or 2 x M25 x 1.5, 1 x M25 plugged ¹⁾
Type of mounting	mounting bracket	mounting bracket	mounting bracket
Degree of protection accd. to EN 60529	IP66	IP66	IP66
Protective cover / protective bowl	borosilicate glass	borosilicate glass	borosilicate glass

¹⁾ see ordering details

²⁾ on request

Additional luminaire data

Type	Power	Weight	Rated luminous flux of the luminaire
PFM LED			
PFM 5L LED	64 W	17.7 kg	4386 lm
PFM 7L LED	89 W	17.7 kg	6720 lm
PFM 9L LED	121 W	18.0 kg	8478 lm
PFM 11L LED	149 W	18.3 kg	10420 lm
PFM 13L LED	179 W	18.3 kg	12940 lm
PFM 25L LED	263 W	23.6 kg	26814 lm
PFM 50L LED	531 W	48.1 kg	55412 lm

Application: VMV LED

VMV 9L lowers energy consumption and maintenance cost at the Delaware City Refinery

The Delaware City Refinery is located on a 5,000-acre site on the Delaware River, with the ability to accept waterborne cargoes and an extensive distribution network of pipelines, barges and tankers, truck and rail. As a result of its configuration and petroleum refinery processing units, Delaware City has the capability to process a diverse heavy slate of crudes making it one of the largest and most complex refineries on the East Coast.



Challenge

Delaware City Refinery was looking for a rugged, low maintenance lighting solution on its catalytic cracking unit.

Every year, Delaware City Refinery had to change out 400 W HPS lamps and ballasts due to the high vibration and challenging environmental conditions. This required building scaffolding to reach a crane on the compressor deck which serviced the luminaires.

It took carpenters about a week to set-up and tear down the scaffolding. Electricians worked for three weeks to remove, rebuild and replace the HID fixtures, as they were only able to service two luminaires at a time.

Solutions

Delaware City Refinery installed a total of 40 VMV Series LED Luminaires to replace the

400 W HPS fixtures on the catalytic cracking unit.

Results

By switching to VMV LEDs, Delaware City Refinery was able to eliminate maintenance labor for carpenters and electricians, as well as material costs for HPS lamps and ballasts completely from their budget at an annual savings of \$40,000. The VMVs have been in service for about two years with no vibration related failures experienced with the HPS fixtures.



Application: PFM LED

PFM 25L eliminate maintenance and increase visibility on Colowyo dragline

The Colowyo Mine is a coal mine located in Meeker Colorado. It is part of Tri-State Generation and Transmission Association, a wholesale electric power supplier owned by the 44 electric cooperatives that it serves. Tri-State generates and transmits electricity to its member systems throughout a 200,000 square-mile service territory across Colorado, Nebraska, New Mexico and Wyoming.

Challenge

The cost of downtime. *"We are a 24/7 operation and even though our lights operate at night on a photo cell, we can't afford any unnecessary downtime,"* said Kyle Thomson, Electrical Supervisor at Colowyo.

Colowyo had been using 1000W metal halide fixture and wanted to look at LED from a maintenance and safety aspect. Key driving issues were the time factor to replace fixtures on the boom and the dragline's downtime cost (several thousands of dollars per hour) to perform maintenance.



Product loyalty.

Convinces Colowyo Mine Electrical Supervisor Kyle Thomson that Eaton's Crouse-Hinds PFM Series 25L LED Floodlights were a better alternative to a competitor's light fixtures that were shown by another distributor.





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