

Malux

CEAG Products
Ex-Solutions LED Lighting

CROUSE-HINDS
SERIES



eLLK 92 LED Light Fittings

Linear light fitting series with new LED module

for hazardous areas Zone 1, 2, 21 and 22

EATON

Powering Business Worldwide

Malux

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Ex-LED-Linear light fitting

eLLK/M 92 LED 400A / eLLK/M 92 LED 800A / eLLK/M 92 LED 400A NE / eLLK 92 LED 800A NE
(Zone 1, 2, 21, 22)

The efficient solution for your explosion-protected lighting concept

The explosion-protected linear light fittings series eLLK/M 92 LED 400A/800A combines the latest LED technology with the protection of a reliable housing solution. As a result, this light fitting series is the ideal solution for lighting tasks in harsh and hazardous environments.

Latest lighting technology for a proven lighting concept

As a leading manufacturer of explosion-protected luminaires, we have redesigned our revolutionary LED module to fit into the eLLK/M... linear light fitting series.

With the new Gen2 modules, our LED linear luminaires are even more efficient and brighter than before. In addition, they now also have an extended temperature range from -25 °C to +55 °C. The new eLLK-2/4-C/W LED module can also be used for converting existing eLLK/M 92 light fittings with fluorescent lamps and an electronic ballast (EVG 09) into LED linear light fittings in just few simple steps.

The LED system design and certification allow the use in the proved Ex e technology of the eLLK/M 92 light fittings. With the use of our electronic ballast EVG 09 as the driver, we can rely on more than 20 years successful and safe operation in harsh and hazardous environments.

The advantages of the LED module:

- Environmentally friendly, no mercury
- Shock and vibration resistant, no filament or glass to break
- Immediate start, instant full illumination
- No life time reduction due to switching cycles
- Reduced disposal costs

Energy and cost savings

- >20% energy savings compared to fluorescent lamps
- Additional energy savings due to operation on demand (night/day and presence-mode)
- Reduced maintenance costs compared to standard fluorescent lamps
- Lower overall cost of ownership

Operating life

- The expected operating life of this LED module is up to 110,000 hours. This is a significant improvement compared to traditional light sources.
- Heat sinks are specifically engineered to remove heat from the LEDs to ensure a longer life, better lumen output and accurate colour temperature.
- Fully operational with V-CG-S modules for connection to CEAG central battery emergency lighting systems.
- Also available as self-contained emergency luminaire eLLK 92 LED ... NE.

Easy and cost-effective installation

Like all the luminaires in the eLLK lighting family, our standard LED linear luminaires feature a single-ended through-wiring, which, in conjunction with the generously dimensioned terminal compartment, allows a cost-effective installation. The double-sided locking facility with 10 or 20 latch points allows the protective bowl to be hinged on both sides, meaning that the fitting can be mounted on either side.



Features

- >20 % energy savings compared to similar fluorescent luminaires
- Special LED design with direct light distribution
- Proved technology; the EVG 09 has been used as a driver for more than 20 years
- Various light colour temperatures available - 4000 K / 5700 K
- Selected LED chips with perfect binning, low power loss and long life
- Ex-e technology for easy maintenance
- For ambient temperatures from -25 °C up to +55 °C

Ordering details

Type	Version	Terminals	Through-wiring single-ended	twin-ended	Cable gland/ thread	Threaded plug	Blanking plug	Order No.
eLLK 92 LED 400A								
 eLLK 92 LED 400A	1/6-1K	1 x 6	x	–	2 x M25, Plastic		1	1 2265 504 101
eLLK 92 LED 400A	2/6-2K	2 x 6	–	x	2 x M25, Plastic	2 x M25		1 2265 504 103
eLLK 92 LED 400A	1/6-1M ¹⁾	1 x 6	x	–	2 x M20, Metal thread	1 x M20		1 2265 504 109
eLLK 92 LED 400A	2/6-2M ¹⁾	2 x 6	–	x	4 x M20, Metal thread	2 x M20		1 2265 504 111
eLLK 92 LED 800A								
eLLK 92 LED 800A	1/6-1K	1 x 6	x	–	2 x M25, Plastic		1	1 2266 504 101
eLLK 92 LED 800A	2/6-2K	2 x 6	–	x	2 x M25, Plastic	2 x M25		1 2266 504 103
eLLK 92 LED 800A	1/6-1M ¹⁾	1 x 6	x	–	2 x M20, Metal thread	1 x M20		1 2266 504 109
eLLK 92 LED 800A	2/6-2M ¹⁾	2 x 6	–	x	4 x M20, Metal thread	2 x M20		1 2266 504 111
eLLM 92 LED 400A/800A								
 eLLM 92 LED 400A	1/3-1K	1 x 3	–	–	1 x M25, Plastic			1 2268 504 101
eLLM 92 LED 800A	1/3-1K	1 x 3	–	–	1 x M25, Plastic			1 2269 504 101
eLLK 92 LED 400 V-CG-S ²⁾								
 eLLK 92 LED 400 V-CG-S	2/6-2K	2 x 6	–	x	2 x M25, Plastic	2 x M25		1 2265 516 103
eLLK 92 LED 400 V-CG-S	2/6-2M ¹⁾	2 x 6	–	x	4 x M20, Metal thread	2 x M25		1 2265 516 111
eLLK 92 LED 800 V-CG-S ²⁾								
 eLLK 92 LED 800 V-CG-S	2/6-2K	2 x 6	–	x	2 x M25, Plastic	2 x M25		1 2266 516 103
eLLK 92 LED 800 V-CG-S	2/6-2M ¹⁾	2 x 6	–	x	4 x M20, Metal thread	2 x M25		1 2266 516 111
eLLK 92 LED 400A NE ³⁾								
 eLLK 92 LED 400A NE	1/6-1K	1 x 6	x	–	2 x M25, Plastic		1	1 2260 587 101
eLLK 92 LED 400A NE	2/6-2K	2 x 6	–	x	2 x M25, Plastic	2 x M25		1 2260 587 103
eLLK 92 LED 400A NE	1/6-1M ¹⁾	1 x 6	x	–	2 x M20, Metal thread	1 x M20		1 2260 587 109
eLLK 92 LED 400A NE	2/6-2M ¹⁾	2 x 6	–	x	4 x M20, Metal thread	2 x M20		1 2260 587 111
eLLK 92 LED 400A NE	1/6-1M ¹⁾	1 x 6	–	x	2 x M25, Metal thread	2 x M25		1 2260 587 609
eLLK 92 LED 400A NE	2/6-2M ¹⁾	2 x 6	–	x	4 x M25, Metal thread	4 x M25		1 2260 587 611
eLLK 92 LED 800A NE ³⁾								
 eLLK 92 LED 800A NE	1/6-1K	1 x 6	x	–	2 x M25, Plastic		1	1 2261 587 101
eLLK 92 LED 800A NE	2/6-2K	2 x 6	–	x	2 x M25, Plastic	2 x M25		1 2261 587 103
eLLK 92 LED 800A NE	1/6-1M ¹⁾	1 x 6	x	–	2 x M20, Metal thread	1 x M20		1 2261 587 109
eLLK 92 LED 800A NE	2/6-2M ¹⁾	2 x 6	–	x	4 x M20, Metal thread	2 x M20		1 2261 587 111
eLLK 92 LED 800A NE	1/6-1M ¹⁾	1 x 6	–	x	2 x M25, Metal thread	2 x M25		1 2261 587 609
eLLK 92 LED 800A NE	2/6-2M ¹⁾	2 x 6	–	x	4 x M25, Metal thread	4 x M25		1 2261 587 611
eLLM 92 LED 400A NE ³⁾								
 eLLM 92 LED 400A NE	1/3-1K	1 x 3	–	–	1 x M25, Plastic			1 2273 587 101




Scope of delivery including LED-module, without fixing material. Metal cable glands see catalogue part 2: 2.3.12 ff

1) with metal thread, without cable gland

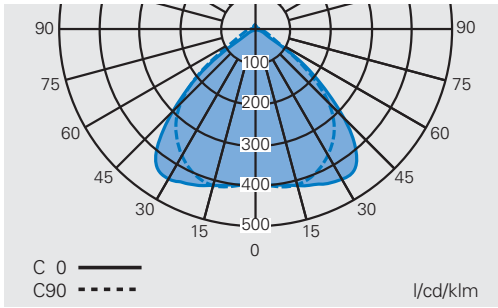
2) for operation with CEAG-emergency supply system

3) self-contained emergency light fitting

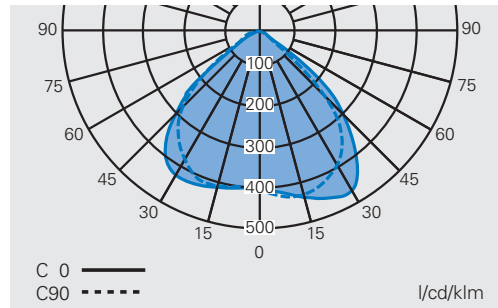
Accessories

Type	Order No.	
 eLLK-2-C	LED module for eLLK/M 92 018/18 incl. conversion kit for standard fluorescent light fittings - 5700 K	CCL 1635 127
eLLK-4-C	LED module for eLLK/M 92 036/36 incl. conversion kit for standard fluorescent light fittings - 5700 K	CCL 1635 128
 eLLK-2-C	LED module for eLLK/M 92 018/18 LED Ready / eLLK 92 LED 400A - 5700 K	CCL 1634 697
eLLK-4-C	LED module for eLLK/M 92 036/36 LED Ready / eLLK 92 LED 800A - 5700 K	CCL 1634 698
	Single sided through wiring 2/6 with 2 entries M25, incl. terminals and mounting material	2 2218 602 000
	Battery set Type 2710-3 with LED display and microprocessor-monitoring, complete	2 2710 904 000
	Single sided through wiring 2/6 with 2 entries M25, incl. terminals and mounting material for eLLM 92 LED 400A/800A	2 2218 602 000
	Protective bowl with green filter for eye wash safety shower facilities (eLLK 92 LED 400A)	2 2215 402 018

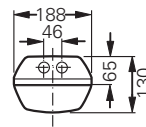
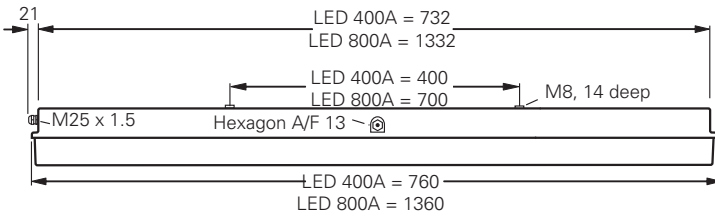
Polar curve eLLK/M 92 LED 400A/800A



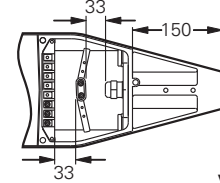
Polar curve eLLK/M 92 LED 400A/800A NE in emergency mode



eLLK 92 LED 400A/800A

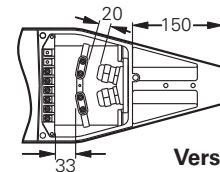
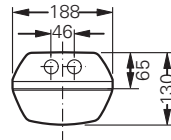
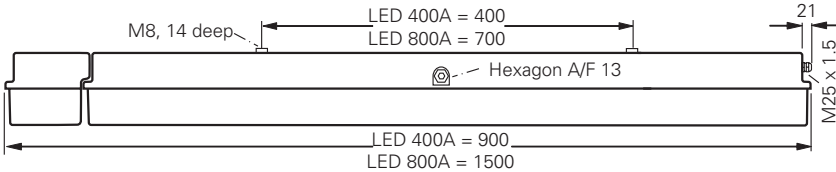


eLLM 92...



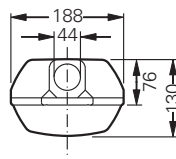
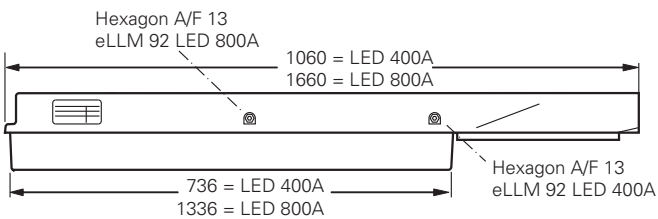
Version 1/3

eLLK 92 LED 400A/800A NE



Version 2/6

eLLM 92 LED 400A/800A



Dimensions in mm



Technical data

	eLLK/M 92 LED 400A	eLLK/M 92 LED 800A
EC-Type Examination Certificate	BVS 09 ATEX E 034	BVS 09 ATEX E 034
IECEX Certificate of Conformity	IECEX BVS 09.0033	IECEX BVS 09.0033
Marking accd. to 2014/34/EU	⊕ II 2 G Ex db eb mb op is IIC T4 Gb ⊕ II 2 D Ex tb IIIC T80 °C Db IP66	⊕ II 2 G Ex db eb mb op is IIC T4 Gb ⊕ II 2 D Ex tb IIIC T80 °C Db IP66
Marking accd. to IECEx	Ex db eb mb op is IIC T4 Gb Ex tb IIIC T80 °C Db	Ex db eb mb op is IIC T4 Gb Ex tb IIIC T80 °C Db
Permissible ambient temperature	-25 °C up to +55 °C	-25 °C up to +55 °C
IK-class according to IEC/EN 62262	IK 10 Δ 20 J	IK 10 Δ 20 J
Rated voltage	110 V - 254 V AC 110 V - 250 V DC	110 V - 254 V AC 110 V - 250 V DC
Power consumption	29 W	57 W
Frequency	50 - 60 Hz	50 - 60 Hz
Life expectancy LED module	L 70 = 110.000 h at ta=25 °C	L 70 = 110.000 h at ta=25 °C
Power factor cos φ	≥ 0.95	≥ 0.95
Circuit	EVG	EVG
Protection class	I	I
Immunity to surge voltages according to EN 61000-4-5	4 kV, L - N and L - PE	4 kV, L - N and L - PE
Illuminance at measurement plane	comparable with luminaires for fluorescent lamps	comparable with luminaires for fluorescent lamps
CRI	> 70 (>80 für 4000 K)	> 70 (>80 für 4000 K)
Lamp / Illuminant	eLLK-2-C - 2 x 13 W	eLLK-2-C - 2 x 26 W
Light colour	5700 K (4000 K on request)	5700 K (4000 K on request)
Rated luminous flux of the luminaire (typical, ± 10 %)	2700 lm (5700 K) / 2565 lm (4000 K)	5350 lm (5700 K) / 5085 lm (4000 K)
Dimensions (L x W x H)	760 x 188 x 130 mm (eLLK) 1060 x 188 x 130 mm (eLLM)	1360 x 188 x 130 mm
Connecting terminals	L1, L2, L3, L, N, PE; max. 2 x 6 mm ² per terminal	L1, L2, L3, L, N, PE; max. 2 x 6 mm ² per terminal
Enclosure colour	RAL 7035 light grey	RAL 7035 light grey
Enclosure material	Glass-fibre reinforced polyester	Glass-fibre reinforced polyester
Weight	7.2 kg (eLLK) / 9.2 kg (eLLM)	11.1 kg (eLLK) / 13.1 kg (eLLM)
Cable glands / gland plates / enclosure drilling	Ex-e cable glands M25 x 1.5 (plastic), option: M20/M25 x 1.5 metal th'ead1)	Ex-e cable glands M25 x 1.5 (plastic), option: M20/M25 x 1.5 metal th'ead1)
Degree of protection accd. to EN 60529	IP66/IP67	IP66/IP67
Protective cover / protective bowl	Polycarbonat	Polycarbonat

¹⁾ with dustcover if entry/thread is not closed



Technical data

	eLLK 92 LED 400A V-CG-S	eLLK 92 LED 800A V-CG-S
EC-Tye Examination Certificate	BVS 09 ATEX E 034	BVS 09 ATEX E 034
IECEX Certificate of Conformity	IECEX BVS 09.0033	IECEX BVS 09.0033
Marking to 2014/34/EU	⊕ II 2 G Ex db eb mb op is IIC T4 Gb ⊕ II 2 D Ex tb IIIC T80 °C Db IP66	⊕ II 2 G Ex db eb mb op is IIC T4 Gb ⊕ II 2 D Ex tb IIIC T80 °C Db IP66
Marking to IECEx	Ex db eb mb op is IIC T4 Gb Ex tb IIIC T80 °C Db	Ex db eb mb op is IIC T4 Gb Ex tb IIIC T80 °C Db
Permissible ambient temperature	-25 °C up to +55 °C	-25 °C up to +55 °C
IK-class according to IEC/EN 62262	IK 10 \pm 20 J	IK 10 \pm 20 J
Rated voltage	220 - 254 V AC 195 - 250 V DC	220 - 254 V AC 195 - 250 V DC
Power consumption	29 W	57 W
Frequency	50 - 60 Hz	50 - 60 Hz
Lifetime LED module	L 70 = 110.000 h at ta=25 °C	L 70 = 110.000 h at ta=25 °C
Power factor cos ϕ	\geq 0,95	\geq 0,95
Circuit	EVG/V-CG-S	EVG/V-CG-S
Insulation class	I	I
Illuminance at measurement plane	comparable with luminaires for fluorescent lamps	comparable with luminaires for fluorescent lamps
CRI	> 70 (>80 für 4000 K)	> 70 (>80 für 4000 K)
Lamp/Illuminant	eLLK-2-C - 2 x 13 W	eLLK-2-C - 2 x 26 W
Light colour	5700 K (4000 K on request)	5700 K (4000 K on request)
Rated luminous flux of the luminaire (typical, \pm 10 %)	2700 lm (5700 K) / 2565 lm (4000 K)	5350 lm (5700 K) / 5085 lm (4000 K)
Rated luminous flux in emergency operation of the luminaire (one LED-row)	1350 lm (5700 k) / 1282 lm (4000 K)	2675 lm (5700 k) / 2542 lm (4000 K)
Rated emergency operating time	-	-
Dimensions (L x W x H)	760 x 188 x 130 mm	1360 x 188 x 130 mm
Connecting terminals	L1, L2, L3, L, N, PE; max. 2 x 6 mm ² per terminal	L1, L2, L3, L, N, PE; max. 2 x 6 mm ² per terminal
Enclosure colour	RAL 7035 light grey	RAL 7035 light grey
Enclosure material	Glass-fibre reinforced polyester	Glass-fibre reinforced polyester
Weight	7.6 kg	11.5 kg
Cable glands / Gland plates / Enclosure drilling	Ex-e cable glands M25 x 1.5 (plastic), option: M20/M25 x 1.5 metal thread ¹⁾	Ex-e cable glands M25 x 1.5 (plastic), option: M20/M25 x 1.5 metal thread ¹⁾
Degree of protection accd. EN 60529	IP66/IP67	IP66/IP67
Protective cover / protective bowl	Polycarbonat	Polycarbonat

¹⁾ With dustcover if entry/thread is not closed



Technical data

	eLLK/M 92 LED 400A NE	eLLK 92 LED 800A NE
EC-Tye Examination Certificate	BVS 09 ATEX E 034	BVS 09 ATEX E 034
IECEX Certificate of Conformity	IECEX BVS 09.0033	IECEX BVS 09.0033
Marking to 2014/34/EU	⊕ II 2 G Ex db eb mb op is IIC T4 Gb ⊕ II 2 D Ex tb IIIC T80 °C Db IP66	⊕ II 2 G Ex db eb mb op is IIC T4 Gb ⊕ II 2 D Ex tb IIIC T80 °C Db IP66
Marking to IECEX	Ex db eb mb ib op is IIC T4 Gb Ex tb IIIC T80 °C Db	Ex db eb mb ib op is IIC T4 Gb Ex tb IIIC T80 °C Db
Permissible ambient temperature	-25 °C up to +55 °C (specified data: -5 °C up to +35 °C)	-25 °C up to +55 °C (specified data: -5 °C up to +35 °C)
IK-class according to IEC/EN 62262	IK 10 ± 20 J	IK 10 ± 20 J
Battery	Battery set with 7 Ah-NC battery, with LED display and monitoring via microprocessor	Battery set with 7 Ah-NC battery, with LED display and monitoring via microprocessor
Rated voltage	120 V - 254 V AC	120 V - 254 V AC
Power consumption	34 W	62 W
Frequency	50 - 60 Hz	50 - 60 Hz
Charging duration	≥ 14 h	≥ 14 h
Lifetime LED module	L 70 = 110.000 h at ta=25 °C	L 70 = 110.000 h at ta=25 °C
Power factor cos φ	≥ 0,95	≥ 0,95
Circuit	EVG with emergency lighting supply	EVG with emergency lighting supply
Insulation class	I	I
Illuminance at measurement plane	comparable with luminaires for fluorescent lamps	comparable with luminaires for fluorescent lamps
CRI	> 70 (>80 für 4000 K)	> 70 (>80 für 4000 K)
Lamp/Illuminant	eLLK-2-C - 2 x 13 W	eLLK-2-C - 2 x 26 W
Light colour	5700 K (4000 K on request)	5700 K (4000 K on request)
Rated luminous flux of the luminaire (typical, ± 10 %)	2700 lm (5700 K) / 2565 lm (4000 K)	5350 lm (5700 K) / 5085 lm (4000 K)
Rated luminous flux in emergency operation of the luminaire (one LED-row)	1282 lm (5700 k) / 1217 lm (4000 K)	1739 lm (5700 k) / 1653 lm (4000 K)
Rated emergency operating time	877 lm (5700 k) / 834 lm (4000 K)	1204 lm (5700 k) / 1144 lm (4000 K)
Luminous flux relation normal/ emergency operation (one LED line)	1,5 h or 3 h, adjustable on site	1,5 h or 3 h, adjustable on site
luminous flux ratio in emergency mode (one LED line)	95 % (1,5 h) - 65 % (3 h)	65 % (1,5 h) - 45 % (3 h)
Dimensions (L x W x H)	900 x 188 x 130 mm / 1500 x 188 x 130 mm	900 x 188 x 130 mm / 1500 x 188 x 130 mm
Connecting terminals	L1, L2, L3, L, N, PE; max. 2 x 6 mm ² per terminal	L1, L2, L3, L, N, PE; max. 2 x 6 mm ² per terminal
Enclosure colour	RAL 7035 light grey	RAL 7035 light grey
Enclosure material	Glass-fibre reinforced polyester	Glass-fibre reinforced polyester
Weight	10.3 kg	14.4 kg
Cable glands / Gland plates / Enclosure drilling	Ex-e-cable glands M25 x 1,5 (plastic), option: M20 x 1,5 metal thread ¹⁾	Ex-e-cable glands M25 x 1,5 (plastic), option: M20 x 1,5 metal thread ¹⁾
Degree of protection accd. EN 60529	IP66/IP67	IP66/IP67
Protective cover / protective bowl	Polycarbonate	Polycarbonate

¹⁾ With dustcover if entry/thread is not closed



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