CANOPY LED LUMINAIRE

Manta canopy



Shown: Manta Surface, 22,400 lm, 380 × 380 mm panel.

CE · IP69K · IK08 · Class II · C5 ISO 9223 · Ta −45 … +50 °C · 90–305 VAC · internal driver · DALI-2 · 0–10 V · PWM · NFC · 224 lm/W · CREE 304 retrofit · 5-year warranty

224 lumens per watt, the highest efficacy in the JEL range. The canopy luminaire for forecourts and covered areas, in a 380 × 380 mm panel that recesses, surface mounts, or drops into an existing CREE 304 opening.

LUMINOUS FLUX	POWER	EFFICACY
22,400 lm	100 W	224 lm/W

INGRESS	IMPACT	PANEL
IP69K	IK08	380 × 380 mm

Values apply to the version without optics at 5700 K, Ta 25 °C, including driver consumption. With optics the luminous flux is 20,600 lm.

WHY IT IS SPECIFIED

224 lumens per watt. A large number of LEDs driven far below their maximum. That is where the efficacy comes from, and it is why the junction temperature stays low. A canopy burns most of the year.

Three mounting depths, one 380 × 380 panel. Recessed at 21 mm, surface at 70 mm and surface extended at 118 mm. The extended version is the retrofit panel that drops into an existing CREE 304 opening, so a forecourt is converted without cutting the canopy.

IP69K on a canopy. Forecourts collect exhaust, salt and road film and are washed down. Most canopy luminaires are rated for a dry indoor ceiling; this one is rated for a pressure washer.

WHERE IT IS USED

- Fuel and service station forecourts
- Truck and fleet fuelling canopies
- Loading dock canopies and shelters
- Covered walkways and passenger canopies
- Car park entrances and pay stations
- Drive through lanes
- Wash bay and inspection canopies
- Weighbridge and gatehouse covers
- Retrofit of existing CREE 304 canopy positions
- Covered process areas

VERSIONS

	Recess	Surface	Surface Extended
Code	MNAC02	MNAC01	MNAC03
Flux	22,400 lm	22,400 lm	22,400 lm
With optics	20,600 lm	20,600 lm	20,600 lm
Depth	21 mm	70 mm	118 mm
Weight	3.9 kg	4.9 kg	5.4 kg

Surface Extended is the same article as the retrofit panel for existing CREE 304 positions. Its article code is not yet issued. A high temperature version to +120 °C is covered by the **Manta HT** datasheet.

Light output and optics

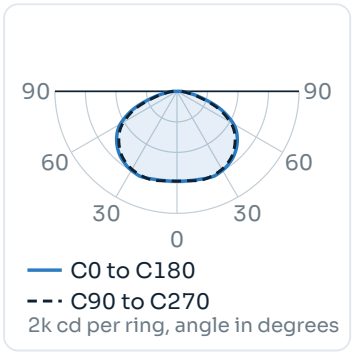
Values apply to the version without optics at Ta 25 °C, including driver consumption. All three mounting depths share the same optical platform and the same photometry.

BEAM CHARACTERISTICS

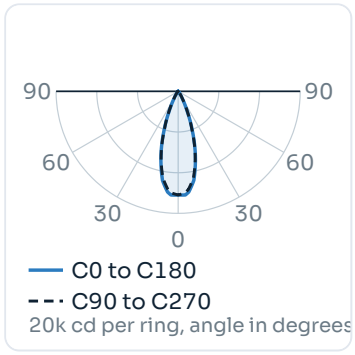
Optic	Distribution	Beam angle 50 % of peak	Field angle 10 % of peak	Typical use
No optic	Very wide, diffuse	136°	168°	The standard build. Canopies at 4 to 6 m over a forecourt
30°	Narrow, symmetric	36°	58°	High canopies and truck fuelling lanes above 6 m
60°	Wide, symmetric	–	–	The general purpose optic for a covered lane or a dock
120°	Very wide, symmetric	–	–	Very low canopies and covered walkways

The Manta without optics reaches 224 lumens per watt precisely because there is no optic in front of the LED to take light away. With optics the flux is 20,600 lm. On a low canopy the diffuse build is normally correct; on a truck fuelling canopy above six metres a 30° optic puts the light on the lane instead of on the canopy edge.

LIGHT DISTRIBUTION



No optic, standard build



30° narrow

OBTRUSIVE LIGHT

ULOR at 0° tilt	**0 %**
Under a canopy	All light is directed downward by the mounting position itself
Amber 2200 K	Available, for light sensitive surroundings

A canopy luminaire is mounted in a ceiling, so the upward light output ratio is 0 % by construction. What matters on a forecourt is the light that leaves sideways past the canopy edge and reaches the carriageway or the housing behind it. The 30° optic is the answer to that, and where the boundary condition is formal the DarkLicht range covers the open areas around the canopy.

COLOUR AND CONSISTENCY

Colour temperatures	5700 K, 5000 K, 4000 K, 3000 K, 2700 K, amber 2200 K
Tuneable white	4000 K with 2200 K and 1700 K, switchable in operation
Colour rendering	Ra > 70 standard, optionally 80 or 90
Colour consistency	MacAdam step 3 or better
LED service life	TM-21 L90B05 > 360,000 h at 50 °C
Why 224 lm/W	Many LEDs driven far below their maximum, and no optic in front of them

Full specification

All values apply to the standard configuration at 25 °C ambient, including lens losses and driver consumption. A hyphen means the entry does not apply to that version.

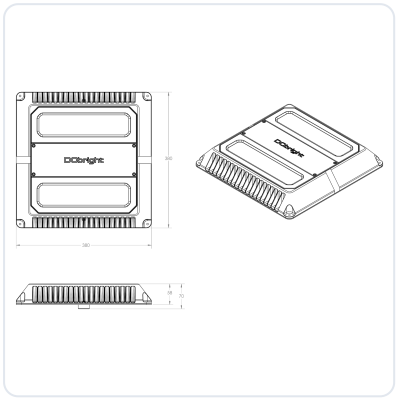
	Recess	Surface	Surface Extended
PERFORMANCE			
Luminous flux	22,400 lm, or 20,600 lm with optics		
Power consumption	100 W		
Efficacy	224 lm/W		
Optics	None as standard, or 30°, 60° or 120°		
ELECTRICAL AND DRIVER			
Supply voltage range	90–305 VAC, 50/60 Hz		
Current draw	0.83 A at 120 V · 0.45 to 0.36 A at 220 to 277 V		
Power factor at full load	> 0.9 at 70 to 100 % load		
Surge protection	6 kV line to line, 10 kV line to earth (IEC 61000-4-5)		
Dimming	0–10 V, PWM, DALI-2, or over NFC		
Driver	Internal BLD120, no external box		
CONSTRUCTION			
Housing	Cast aluminium, less than 0.08 % copper		
Surface finish	Conversion layer plus 2-layer titanium-based e-coating		
Bracket	Fixed bracket, aluminium, less than 0.08 % copper		
Front	Diffuse chemically hardened glass, or diffuse borosilicate, IK08		
Protection class	Class II		
Ingress protection	IP66, IP67, IP68 and IP69K, each class tested separately		
Impact resistance	IK08 (IEC 62262)		
Corrosion class	C5 industrial and marine (ISO 9223)		
DURABILITY AND DIMENSIONS			
Ambient temperature	−45 to +50 °C		
LED service life	TM-21 L90B05 > 360,000 h at 50 °C		
Cable and termination	H07BQ-F, 4 cores (2 × 1.5 mm² + 2 × 0.5 mm²), 0.3 m, free wire ends. A version with an integral driver compartment and an IN gland is available to order		
Dimensions	380 × 380 × 21 mm	380 × 380 × 70 mm	380 × 380 × 118 mm
Weight	3.9 kg	4.9 kg	5.4 kg
Retrofit	-	-	Fits an existing CREE 304 opening
Warranty	5 years on the complete luminaire		

The 224 lumens per watt is correct and is not a typing error. It comes from a large LED count driven far below maximum, combined with a build that has no optic in front of the LEDs. With optics the figure is lower and is stated separately.

Mechanics, mounting and driver

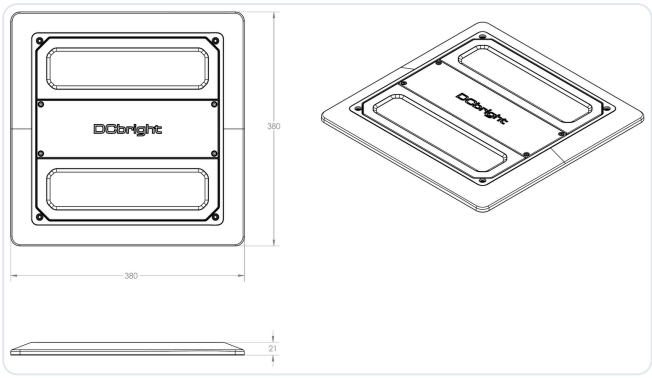
All drawings are to scale and dimensioned in millimetres. DXF and STEP models are available on request.

PANEL AND MOUNTING DEPTHS



Panel	380 × 380 mm, all versions
Recess	20 mm deep, 3.9 kg
Surface	95 mm deep, 4.9 kg
Surface Extended	185 mm deep, 5.4 kg
Bracket	Fixed, aluminium
Front	Diffuse glass or borosilicate, IK08

CREE 304 RETROFIT



Which version	Surface Extended
Fits	An existing CREE 304 canopy opening
Why it matters	The canopy does not have to be cut or patched
Cable	0.3 m tail, free wire ends
Article code	MNAC03

MOUNTING AND ACCESSORIES

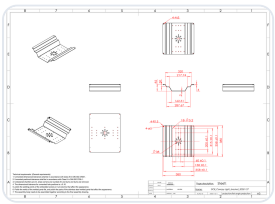
Fixed bracket	Aluminium, supplied as standard
Optics	30°, 60° or 120°, ordered as a suffix
Borosilicate front	Diffuse, option
CREE 304 retrofit	Surface Extended version
High temperature version	Manta HT to +120 °C. Separate datasheet
Open areas around the canopy	DarkLicht D or WP

INTERNAL DRIVER

Type	BLD120, inside the housing
External box	None
Case temperature	Tc −40 to +90 °C
Lifetime	≥ 100,000 h at Tc 75 °C
MTBF	≥ 320,000 h at 75 °C case
Control	0–10 V, PWM, DALI-2, or over NFC

Everything inside a 20 mm panel. On a canopy there is no space above the ceiling for a driver box and no access to it once the panel is in. The Manta carries its driver inside and is still IP69K.

MOUNTING



Recess	Into the canopy ceiling, 20 mm
Surface	Onto the ceiling, 95 mm
Surface Extended	Onto the ceiling, 185 mm, or into a CREE 304 opening
Washdown	The panel and the seal are rated for the regime

Ordering, standards and documents

ORDER CODE

Example **MNAC01-50K**

Manta Surface, 5000 K, no optic

MNAC02 · MNAC01 · MNAC03	Recess · Surface · Surface Extended
Surface Extended	Also the CREE 304 retrofit panel. Article code not yet issued
57K · 50K · 40K · 30K · 27K · 22K	Colour temperature, amber 2200 K included
TW	Tuneable white, 4000 K with 2200 K and 1700 K
.30 · .60 · .120	Optic suffix. Without a suffix the luminaire is supplied without optics

Without an optic suffix the Manta delivers 22,400 lm at 224 lm/W. With an optic the figure is 20,600 lm. Front material and control protocol are confirmed at order.

COMBINATIONS

Optic with any mounting depth	Possible
Tuneable white with any depth	Possible
CREE 304 retrofit	Surface Extended only
Borosilicate front	Possible
DC supply	Not available
High temperature	See the Manta HT

STANDARDS AND VERIFICATION

Subject	Standard	Verification
Luminaire safety	IEC/EN 60598-1, -2-5	In-house test
EMC emission and immunity	EN 55015, EN 61547	Third party test
Ingress	IEC 60529 and ISO 20653. IP66, IP67, IP68, IP69K	In-house test
Impact and vibration	IEC 62262 IK08 · IEC 60068-2-6 at 6 G	In-house test
Shock and corrosion	IEC 60068-2-27 · ISO 9223 class C5, industrial and marine	In-house test
Photometry	IES LM-79, IES files per optic	In-house test
Substances	RoHS, REACH	Self-declaration

BEFORE YOU ORDER

A sample luminaire to hang before you commit to a project quantity.

Five years warranty on the complete luminaire.

A DIALux calculation from our engineers, on your site drawing.

PRODUCT PAGE

IES files and revision history, DXF and STEP on request, and project references.
jelproducts.nl/en/products/manta-canopy-light

WHERE IT EARNS ITS PLACE

The Manta earns its place under the roof. A canopy runs its lighting almost every hour of the year, it is washed down, it collects everything the traffic underneath throws up, and replacing a panel means closing the lane. At 224 lumens per watt with an IP69K rating and a retrofit version that fits the opening already in the ceiling, it answers all three at once.

Notes. Values are for the standard configuration; a bi-colour or high-CRI build changes the luminous flux and the quotation states the figure that applies. Luminaires per MCB is the manufacturer figure for ABB S200 at 220 V, a guide for engineering and not a substitute for the installation calculation. North American models on request. The JEL range is not ATEX or Ex certified.