INDUSTRIAL LED FLOODLIGHT

Orca



Shown: Orca AC, titanium-based e-coating, 14° lens, high tensile 316L bracket.

CE · IP69K · IK10 · Class II · C5 ISO 9223 · Ta −45 … +50 °C · 180–528 VAC · 24 and 48 VDC · DALI-2 · 0–10 V · PWM · NFC · Vibration 6 G · ULOR 0 % · 5-year warranty

The highest output floodlight in the JEL range: 111,300 lumens from 156 lenses in one cast aluminium housing, in AC and in 24 and 48 V DC. Specified where mounting points are few and expensive to reach, and chosen for the Mammoet SK6000, the largest land based crane in the world.

LUMINOUS FLUX	POWER	EFFICACY
111,300 lm	800 W	139 lm/W

INGRESS	IMPACT	BEAM ANGLES
IP69K	IK10	14 to 69°

Values apply to the AC version at 6500 K, Ta 25 °C, including lens losses and driver consumption. 6500 K delivers the same luminous flux as 4000 K.

WHY IT IS SPECIFIED

One mounting point instead of three. 111,300 lm from a single housing means fewer brackets, less cable, less mast load and fewer positions that will ever need to be reached at height again.

Proven on the largest machines built. Selected for the Mammoet SK6000 and for Liebherr 9600 class excavators, where a failed luminaire is not a maintenance item but a stoppage.

AC, 24 V DC and 48 V DC on one interface. Bracket, optics, cable entry and photometry are identical, so a site can mix supply types across positions and hold one set of spares.

WHERE IT IS USED

- Offshore platform deck lighting
- Ring cranes and heavy lift cranes
- Shipyard building docks and dry docks
- Steel plant bays and casting floors
- Open cast mining benches and haul roads
- Large excavators and mining machines
- Quarry crushing and screening plant
- Log yards and bulk storage yards
- Heavy lift and project cargo quays
- Scrap yards and recycling plant
- Cement and aggregate terminals
- Large equipment maintenance halls

VERSIONS

	Orca AC	DC 24 V	DC 48 V
Article base code	ORAC01	ORDC01	ORDC02
Luminous flux	111,300 lm	100,200 lm	100,200 lm
Power	800 W	800 W	800 W
Supply	180–528 VAC	20–35 VDC	35–60 VDC
Driver	Remote TLD800	On board	On board
Weight incl. bracket	22.7 kg	22.7 kg	22.7 kg

Also available as the **Orca SS** in solid 316L stainless steel, 36.3 kg, with twenty years of warranty on the housing, and as the **Orca HT** for ambient temperatures to +120 °C. Separate datasheets.

Light output and optics

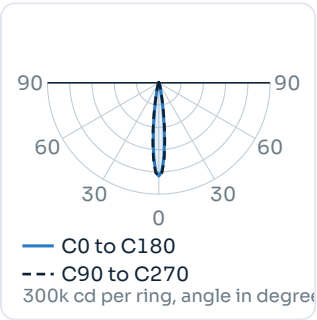
Values apply to the standard configuration at Ta 25 °C and include lens losses and driver consumption. Photometry is measured in house to IES LM-79 and the files are downloadable per optic from the product page.

BEAM CHARACTERISTICS

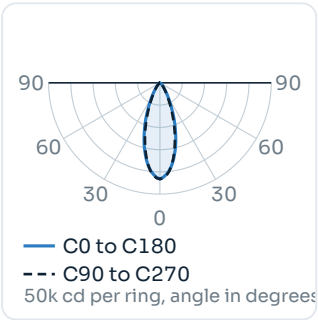
Lens	Distribution	Beam angle 50 % of peak	Field angle 10 % of peak	Typical use
14°	Spot, symmetric	13°	27°	Very long throw, beyond 150 m: high masts, crane booms, stockpiles
38°	Medium, symmetric	37°	69°	Long throw, beyond 40 m: yards, quays, terminals, mining benches
69°	Wide, symmetric	72°	103°	Up to around 45 m: decks, aprons, casting floors, work areas
14° × 46°	Flare, asymmetric	13° × 45°	30° × 70°	Throws far forward and stays wide across: quay edges, haul roads
No lens (.NOP)	Very wide, symmetric	136°	168°	Close range over a very wide field

The beam angle is the full angle between the two directions where the intensity has fallen to 50 % of the peak. The field angle uses 10 %. Both are read from the IES files, available per optic on the product page. Lens combinations within one luminaire are possible, and the optic is part of the order code as a suffix, for example .38.

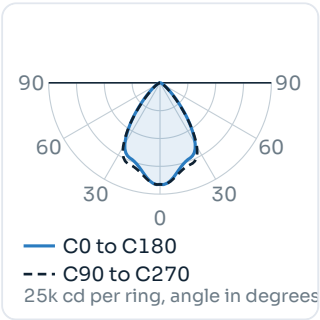
LIGHT DISTRIBUTION



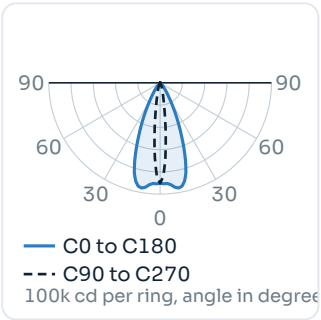
14° spot



38° medium



69° wide



14° × 46° flare

OBTRUSIVE LIGHT

ULOR at 0° tilt	**0 %**
Amber 2200 K	Available on every optic, for light sensitive surroundings
Bi-colour 4000 K with amber 2200 K	Switchable in operation, for fog, dust and night regimes

Nothing is emitted above the horizontal at 0° tilt. That is the figure a permitting authority asks for when a terminal or a plant borders a residential area or a protected zone, and it is the starting point for any assessment against NEN-EN 12464-2 and the NSVV guidance on obtrusive light. Where the site condition demands a cut off optic rather than a controlled floodlight, see the DarkLicht range.

COLOUR AND CONSISTENCY

Colour temperatures	6500 K, 5000 K, 4000 K, 2700 K, amber 2200 K
Flux at 6500 K	Identical to 4000 K
Bi-colour	4000 K with amber 2200 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
IES files	Download per optic, product page

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.

	Orca AC	Orca DC 24 V	Orca DC 48 V
PERFORMANCE			
Luminous flux	111,300 lm	100,200 lm	100,200 lm
Power consumption	800 W	800 W	800 W
Efficacy	139 lm/W	125 lm/W	125 lm/W
LED count	156 lenses in one cast housing		
ELECTRICAL AND DRIVER			
Supply voltage range	180–528 VAC or 250–740 VDC via TLD800, 50/60 Hz	20–35 VDC, 24 V nominal	35–60 VDC, 48 V nominal
Current draw	3.5 A at 277 V · 2.0 A at 480 V · 2.1 A at 380 V · 3.6 A at 220 V	33.4 A at 24 V	16.7 A at 48 V · 13.4 A at 60 V
Power factor at full load	> 0.9 at 60 to 100 % load	-	-
THD at full load	< 15 % at 60 to 100 % load	-	-
Inrush current at 220 V	5.4 A peak, T50 8 ms	-	-
Luminaires per MCB	B16 2 · C16 2 · C25 4 · D16 3	-	-
Surge protection	6 kV line to line, 10 kV line to earth (IEC 61000-4-5)	-	-
Leakage current	0.7 mA max at 400 VAC (IEC 60598-1)	-	-
Dimming	0–10 V, PWM, DALI-2, or over NFC	On request	On request
Driver	Remote TLD800, 237 × 125 × 49 mm, 2,600 g. Bare, or in the DRB-2	DC drivers on board	DC drivers on board
Driver life	≥ 100,000 h at Tc 75 °C, MTBF ≥ 320,000 h, Tc −40 to +90 °C. Replaced without opening the luminaire	-	-
CONSTRUCTION			
Housing	Cast aluminium, less than 0.08 % copper		
Surface finish	Conversion layer plus 2-layer titanium-based e-coating		
Colour	Titanium Black		
Bracket	High tensile 316L stainless steel, fully rotatable through 360° in 30° steps		
Front	Polycarbonate IK10 as standard, chemically hardened glass IK09 on request		
Protection class	Class II		
Ingress protection	IP66, IP67, IP68 and IP69K, each class tested separately, so IP69K does not imply IP68		
Impact resistance	IK10 with polycarbonate, IK09 with glass (IEC 62262)		
Corrosion class	C5 industrial and marine (ISO 9223)		
Vibration and shock	6 G at resonant frequency (IEC 60068-2-6), shock tested to IEC 60068-2-27		
DURABILITY AND DIMENSIONS			
Ambient temperature	−45 to +50 °C	−45 to +50 °C	−45 to +50 °C
LED service life	TM-21 L90B05 > 360,000 h at 50 °C, so the driver is the wear part		
Cable and termination	H07BQ-F, 4 cores (2 × 2.5 mm² + 2 × 0.5 mm²), 2.0 m, pre-fitted with free wire ends	H07BQ-F, 2 cores (2 × 2.5 mm²), 2.0 m	H07BQ-F, 2 cores (2 × 2.5 mm²), 2.0 m
Dimensions	Luminaire with bracket 515 × 440 × 95 mm · housing without bracket 484.0 × 441.2 × 93.5 mm		
Weight	22.7 kg incl. bracket · 25.3 kg with loose driver · 33.1 kg with DRB-2	22.7 kg incl. bracket	22.7 kg incl. bracket
Warranty	5 years on the complete luminaire. The Orca SS carries 20 years on the housing and 5 years on the electronics and components		

Power is a driver setting. Every AC version can be ordered programmed to a lower wattage by adding the wanted power as a suffix to the article code. DC versions run at a fixed constant current, so another power level there is a custom build. High voltage DC between 250 and 740 V is available on request.

Mechanics, mounting and driver

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

STANDARD BRACKET


Maattekening Orca met maatvoering in millimeters

Housing	484.0 × 441.2 × 93.5 mm
Incl. bracket	515 × 440 × 95 mm
Mounting foot	399.2 mm wide, 80.0 mm deep
Fixing holes	3 × Ø 16.5 mm
Hole centres	326.6 mm between outer holes, 163.3 mm pitch
Adjustment	360° in 30° steps, twelve positions

REAR MOUNT BRACKET


Maattekening rear mount beugel met maatvoering in millimeters

Availability	AC version, flat against a structure
Mounting plate	300 × 180 mm
Fixing holes	Ø 15.7 mm, pitch 100.0 and 120.0 mm
Cable entry	Ø 24.5 mm
Stainless version	SS rear mount bracket for the Orca SS

MOUNTING AND ACCESSORIES

Standard bracket	High tensile 316L, supplied as standard
Rear mount bracket	Option on the AC version, SS version for the Orca SS
Crane Light Stabilizer	AC and DC. Holds the aim while the boom moves. Separate datasheet
Tower crane frame	For tower crane jib mounting. Separate datasheet
Safety cable	Optional, supplied with the luminaire
Cable and retrofit brackets	Lengths beyond 2.0 m and structure specific brackets on request

REMOTE DRIVER

Type	TLD800, 180–528 VAC or 250–740 VDC
Case temperature	Tc −40 to +90 °C
Lifetime	≥ 100,000 h at Tc 75 °C
MTBF	≥ 320,000 h at 75 °C case
Size and weight	237 × 125 × 49 mm, 2,600 g
Enclosure	Bare as standard, or in the DRB-2

The LEDs outlive three drivers. The driver sits outside the luminaire and is replaced without opening the housing, so a driver fault is a ground level job instead of a lift and a dismantled luminaire.

DRB DRIVER BOXES


DRB-2 driver box

Use	Housing for the remote driver, mounted outside the wash-down zone
DRB-2	Systems up to 2,000 W, and the box the TLD800 goes in. 441 × 290 × 145 mm, 10.4 kg, IP66 and IP67
DRB-1	One driver up to 320 W. Too small for the TLD800
Ingress protection	IP66 and IP67
System weight	33.1 kg, luminaire with bracket and DRB-2

Ordering, standards and documents

ORDER CODE

Example **ORAC01-65K.38**

Orca, AC, 6500 K, 38° optic

ORAC01	AC, 180–528 VAC, remote TLD800
ORDC01 · ORDC02	DC 20–35 V and DC 35–60 V, drivers on board
ORSS01 · ORSS02 · ORHT01 · ORHT02	316L stainless steel and high temperature versions
65K · 50K · 40K · 27K · 22K	6500 K · 5000 K · 4000 K · 2700 K · amber 2200 K
BIC	Bi-colour 4000 K with amber 2200 K
.14 · .38 · .69 · .14x46 · .NOP	Optic suffix, selected from the light calculation

The optic suffix follows the colour temperature, so one project can carry several beam angles, and a lower wattage is ordered as an extra suffix. Bracket, control protocol, cable length and the Ra 80 or Ra 90 option are confirmed at order.

COMBINATIONS

Optics within one luminaire	Possible
Amber 2200 K with flare optic	Possible
Bi-colour with DALI-2	Possible
Ra 90 with 6500 K	Possible
Rear mount bracket	AC version only
Crane Light Stabilizer	AC and DC
DC with dimming or lower wattage	On request

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 IK10 with polycarbonate · 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.

QR-code naar de productpagina van de Orca

PRODUCT PAGE

IES files and revision history, DXF and STEP on request, and project references.
jelproducts.nl/en/products/orca

WHERE IT EARNS ITS PLACE

The Orca earns its place where access is expensive and mounting points are few. On a crane boom or a high mast the cost of a luminaire is small next to the cost of reaching it. One Orca instead of three floodlights reduces the number of positions that will ever need reaching again. For permanent salt exposure choose the Orca SS, for hot process areas the Orca HT.

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.