JEL PRODUCTS
SUSTAINABLE | LIGHTING | SOLUTIONS

COLLECTED TECHNICAL DATASHEETS

Orca

The highest output floodlight in the range, in cast aluminium, in solid 316L and in a high temperature build to +120 °C. Specified where mounting points are few and expensive to reach.

DATASHEETS	OUTPUT RANGE	POWER	TYPE
3	65,000 to 111,300 lm	320 to 800 W	Heavy industrial LED floodlight



Orca | Orca SS | Orca HT

Contents

Every datasheet in this document has the same five sections: what it is and where it is used, the light output and the optics, the full specification, the mechanics and the driver, and the ordering information. The page numbers run through the whole document.

THE DATASHEETS IN THIS DOCUMENT

2	**Orca**	**111,300 lm luminous flux · 800 W power** 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.
7	**Orca SS**	**111,300 lm luminous flux · 800 W power** The Orca in solid 316L stainless steel: 111,300 lumens at 800 W, identical light and identical optics to the aluminium version, for offshore,.
12	**Orca HT**	**65,000 lm luminous flux · 320 W power** 65,000 lumens at an ambient temperature of +120 °C, continuously.

HOW TO READ THIS DOCUMENT

This is the complete set for one product. Every version has its own datasheet with the same five sections, so a specification can be compared line by line between the versions without opening a second document.

The photometry is measured per optic and the IES files are on the product page. Where a figure depends on the build, the specification states the condition next to it rather than in a footnote.

WHAT IS NOT IN THIS DOCUMENT

Crane Light Stabilizer	The bracket that holds the aim while the boom moves. See the Floodlights collection
Smaller alternative	The Barracuda, at 44,100 lm on the same accessory line

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

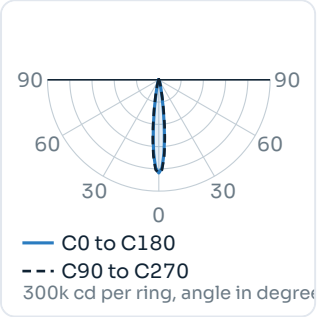
Values apply to the standard configuration at Ta 25 °C and include lens losses and driver consumption. Photometry is measured in house to IES LM-79 and the files are downloadable per optic from the product page.

BEAM CHARACTERISTICS

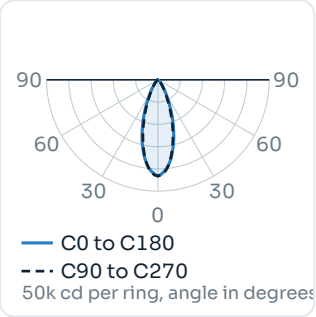
Lens	Distribution	Beam angle 50 % of peak	Field angle 10 % of peak	Typical use
14°	Spot, symmetric	13°	27°	Very long throw, beyond 150 m: high masts, crane booms, stockpiles
38°	Medium, symmetric	37°	69°	Long throw, beyond 40 m: yards, quays, terminals, mining benches
69°	Wide, symmetric	72°	103°	Up 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.

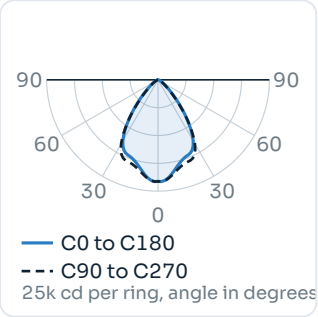
LIGHT DISTRIBUTION



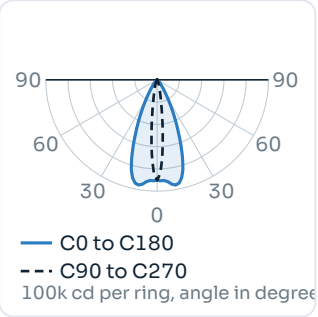
14° spot



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.

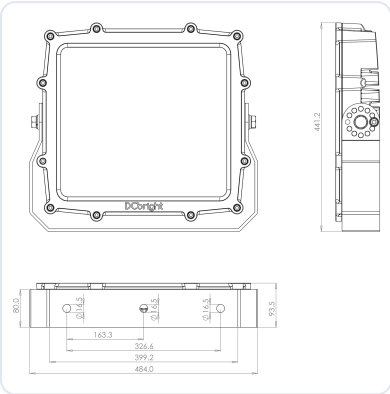
	Orca AC	Orca DC 24 V	Orca DC 48 V
PERFORMANCE			
Luminous flux	111,300 lm	100,200 lm	100,200 lm
Power consumption	800 W	800 W	800 W
Efficacy	139 lm/W	125 lm/W	125 lm/W
LED count	156 lenses in one cast housing		
ELECTRICAL AND DRIVER			
Supply voltage range	180–528 VAC or 250–740 VDC via TLD800, 50/60 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

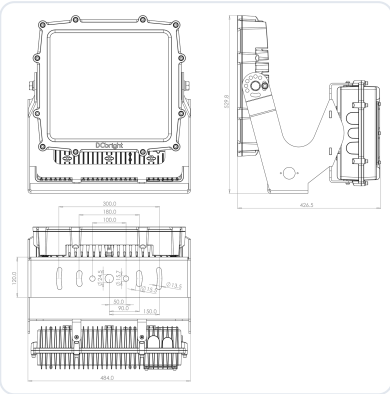
All drawings are to scale and dimensioned in millimetres. DXF and STEP models are available on request.

STANDARD BRACKET



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



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



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.

PRODUCT PAGE

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

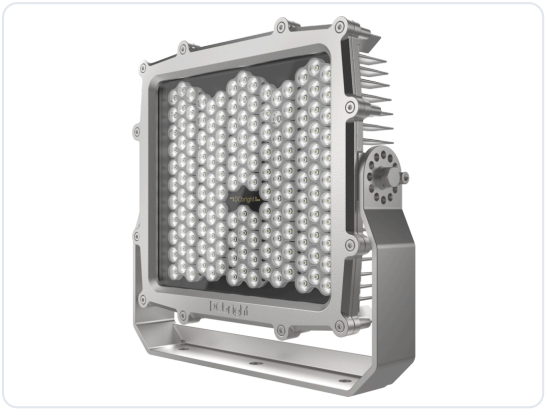
WHERE IT EARNS ITS PLACE

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.

INDUSTRIAL LED FLOODLIGHT

Orca SS



Shown: Orca SS, electrolytically polished 316L, 14° lens.

CE | IP69K | IK10 | Class II | 316L stainless steel | C5 and CX ISO 9223 | Ta −45 … +50 °C | 180–528 VAC | 48 VDC | DALI-2 · 0–10 V · PWM · NFC | Vibration 6 G | 20-year housing warranty

The Orca in solid 316L stainless steel: 111,300 lumens at 800 W, identical light and identical optics to the aluminium version, for offshore, chemical and permanently salt loaded positions where a coating is a wear part and the housing must not be.

LUMINOUS FLUX	POWER	HOUSING
111,300 lm	800 W	316L
CORROSION	**INGRESS**	**HOUSING WARRANTY**
C5 and CX	IP69K	20 yr

Values apply to the standard 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

Twenty years of warranty on the housing. Solid 316L, electrolytically polished. Corrosion resistance is a material property here, not a coating thickness that can be scratched through.

Identical light to the aluminium Orca. Same optics, same photometry, same IES files, so a site can mix materials across positions without a second lighting calculation.

CRC III at a PREN of about 24. Classified to EN 1993-1-4 for structural stainless steel, which is the language an offshore or chemical specification is actually written in.

WHERE IT IS USED

- Offshore platforms and jack up rigs
- Chemical and fertiliser plant
- Splash zones and permanent salt spray
- Water and waste water treatment
- Food and beverage process areas
- Fish farms and aquaculture
- Desalination and brine handling
- Heavy lift vessels and dredgers
- Coastal terminals and quays
- Flue gas and scrubber areas
- Cleanrooms and washdown zones
- Any position where a coating cannot be repaired

VERSIONS

	Orca SS AC	Orca SS DC
Article base code	ORSS01	ORSS02
Luminous flux	111,300 lm	100,200 lm
Power	800 W	800 W
Supply	180–528 VAC	35–60 VDC, 24 V on request
Driver	Remote TLD800	On board
Weight incl. bracket	36.3 kg	36.3 kg
Warranty	20 years housing, 5 years electrical	20 years housing, 5 years electrical

Light output and optics

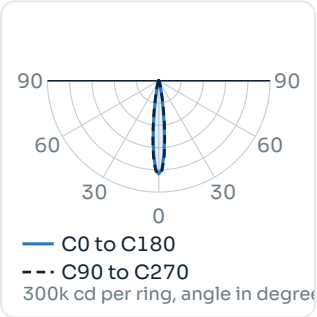
Values apply to the standard configuration at Ta 25 °C and include lens losses and driver consumption. Photometry is measured in house to IES LM-79 and the files are downloadable per optic from the product page.

BEAM CHARACTERISTICS

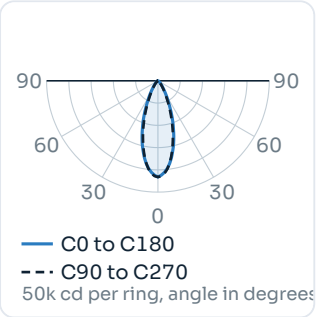
Lens	Distribution	Beam angle 50 % of peak	Field angle 10 % of peak	Typical use
14°	Spot, symmetric	13°	27°	Very long throw, beyond 150 m: high masts, crane booms, stockpiles
38°	Medium, symmetric	37°	69°	Long throw, beyond 40 m: quays, decks, terminals
69°	Wide, symmetric	72°	103°	Up to around 45 m: decks, process areas, work areas
14° × 46°	Flare, asymmetric	13° × 45°	30° × 70°	Throws far forward and stays wide across: quay edges, jetties

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.

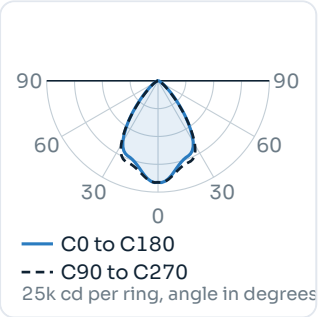
LIGHT DISTRIBUTION



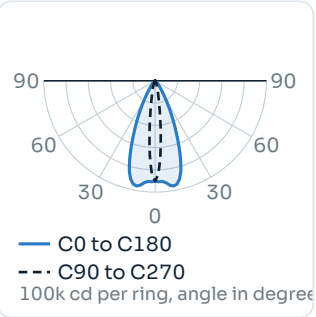
14° spot



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 site 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

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.

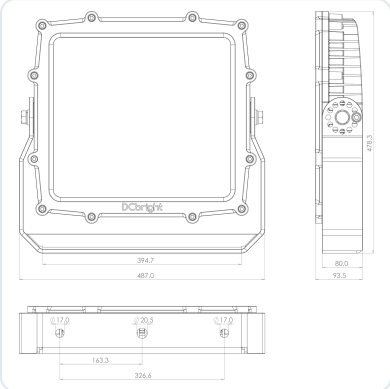
	Orca SS AC	Orca SS DC
PERFORMANCE		
Luminous flux	111,300 lm	100,200 lm
Power consumption	800 W	800 W
Efficacy	139 lm/W	125 lm/W
LED count	156 lenses in one housing	
ELECTRICAL AND DRIVER		
Supply voltage range	180–528 VAC or 250–740 VDC via TLD800, 50/60 Hz	35–60 VDC, 48 V nominal. 24 V on request
Current draw	3.5 A at 277 V · 2.0 A at 480 V · 3.6 A at 220 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)	-
Dimming	0–10 V, PWM, DALI-2, or over NFC	On request
Driver	Remote TLD800, 237 × 125 × 49 mm, 2,600 g. Bare, or in the DRB-2	DC drivers on board
Driver life	≥ 100,000 h at Tc 75 °C, MTBF ≥ 320,000 h. Replaced without opening the luminaire	-
CONSTRUCTION		
Housing	Solid 316L stainless steel	
Surface finish	Electrolytically polished	
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	
Impact resistance	IK10 with polycarbonate, IK09 with glass (IEC 62262)	
Corrosion class	C5 and CX (ISO 9223). 316L is CRC III to EN 1993-1-4 at a PREN of approximately 24	
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
LED service life	TM-21 L90B05 > 360,000 h at 50 °C	
Cable and termination	H07BQ-F, 4 cores (2 × 2.5 mm² + 2 × 0.5 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 487.0 × 478.3 × 93.5 mm, mounting foot 394.7 mm with two Ø17.0 holes and one Ø20.5	
Weight	36.3 kg incl. bracket	36.3 kg incl. bracket
Warranty	20 years on the housing. 5 years on the electronics, the components and the seals	

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

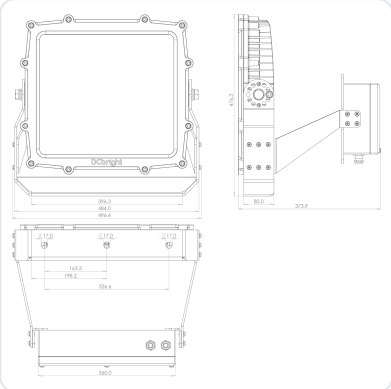
All drawings are to scale and dimensioned in millimetres. DXF and STEP models are available on request.

STANDARD BRACKET



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, 163.3 mm pitch
Adjustment	360° in 30° steps, twelve positions

SS REAR MOUNT BRACKET



Availability	AC version, flat against a structure
Material	316L stainless steel
Mounting plate	300 × 180 mm
Fixing holes	Ø 15.7 mm, pitch 100.0 and 120.0 mm
Cable entry	Ø 24.5 mm

MOUNTING AND ACCESSORIES

Standard bracket	High tensile 316L, supplied as standard
SS rear mount bracket	Option on the AC version
Crane Light Stabilizer	Holds the aim while the boom moves. 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

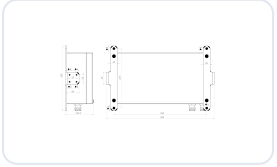
Type	TLD800, 180–528 VAC or 250–740 VDC
Case temperature	Tc −40 to +90 °C
Lifetime	≥ 100,000 h at Tc 75 °C
MTBF	≥ 320,000 h at 75 °C case
Size and weight	237 × 125 × 49 mm, 2,600 g
Enclosure	Bare as standard, or in the DRB-2

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



Aluminium DRB



316L Power Box BLD600

Use	Optional housing for the remote driver, mounted outside the wash-down zone
DRB-1	One driver up to 320 W. 276 × 194 × 86.5 mm, 4.2 kg, IP66 and IP67
DRB-2	Systems up to 2,000 W. 441 × 290 × 145 mm, 10.4 kg, IP66 and IP67
316L Power Box	Power Box BLD600, solid 316L, 390 × 225 × 100 mm. For the same driver as the DRB, chosen where the box sits in the same wash-down or salt zone as the luminaire
Ingress protection	IP66 and IP67
System weight	46.7 kg, luminaire with bracket and DRB-2

Ordering, standards and documents

ORDER CODE

Example **ORSS01-65K.38**

Orca SS, AC, 6500 K, 38° optic

ORSS01	316L, AC, 180–528 VAC, remote TLD800
ORSS02	316L, DC, 35–60 VDC, drivers on board
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	Optic suffix, selected from the light calculation

The optic suffix follows the colour temperature and a lower wattage is ordered as an extra suffix. Bracket, control protocol and cable length are confirmed at order.

COMBINATIONS

Optics within one luminaire	Possible
Amber 2200 K with flare optic	Possible
Bi-colour with DALI-2	Possible
SS rear mount bracket	AC version only
24 V DC	On request
High temperature in 316L	See the Orca 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 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.

Twenty years warranty on the housing, five years on the electronics.

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/orca

WHERE IT EARNS ITS PLACE

Sea water, chlorides and process chemistry do not attack a luminaire, they attack its coating. Where that coating cannot be inspected or repaired, the Orca SS removes the question entirely: the housing is solid 316L, electrolytically polished, with twenty years of warranty on the housing at the cost of thirteen kilograms over the aluminium version.

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.

HIGH TEMPERATURE LED FLOODLIGHT

Orca HT



Shown: Orca HT, Titanium Light Grey, chemically hardened glass front.

CE | IP69K | IK09 | Class II | Ta −45 … +120 °C | C5 ISO 9223 | 90–305 / 180–528 VAC | silicone cable to 150 m | remote driver | borosilicate option | Vibration 6 G | 5-year warranty to +120 °C

65,000 lumens at an ambient temperature of +120 °C, continuously. The driver sits outside the hot zone and the luminaire is connected to it with heat resistant silicone cable, so the only part in the heat is the part that can take it.

LUMINOUS FLUX	POWER	AMBIENT
65,000 lm	320 W	+120 °C
INGRESS	**IMPACT**	**CABLE RUN**
IP69K	IK09	150 m

Values apply to the version without optics at 6500 K, at the stated ambient temperature, including driver consumption. Bi-colour is not available on the high temperature versions.

WHY IT IS SPECIFIED

The driver leaves the hot zone. Electrolytic capacitors are what fail in heat. Placing the driver outside the zone and connecting it with silicone cable removes the failure mode instead of derating around it.

Up to 150 m between luminaire and driver. The driver box can sit in the control room or on a cool wall, which is also where a technician can reach it without a shutdown.

Two output options. Without optics for close range over a wide field, or with 20, 40 and 60 degree HT optics where the light has to be thrown at a target.

WHERE IT IS USED

- Steel plant bays and casting floors
- Rolling mills and reheat furnace fronts
- Foundries and melt shops
- Coke plant and sinter lines
- Glass works and annealing lehrs
- Cement kilns and clinker coolers
- Aluminium smelters and potrooms
- Drying ovens and paint lines
- Paper machines and drying sections
- Asphalt and bitumen plant
- Waste incineration and boiler halls
- Heat treatment and forging shops

VERSIONS

	ORHT01, no optics	ORHT02, with optics
Luminous flux at 320 W	65,000 lm	52,000 lm
Luminous flux at 240 W	51,000 lm	39,000 lm
Beam	120° very wide	20°, 40° or 60° HT optic
Front	Chemically hardened glass, or borosilicate	Chemically hardened glass, or borosilicate
Ambient	−45 to +120 °C	−45 to +120 °C
Weight incl. bracket	22.7 kg	22.7 kg

A 316L stainless steel high temperature version is available on request. The HT versions do not carry the bi-colour option.

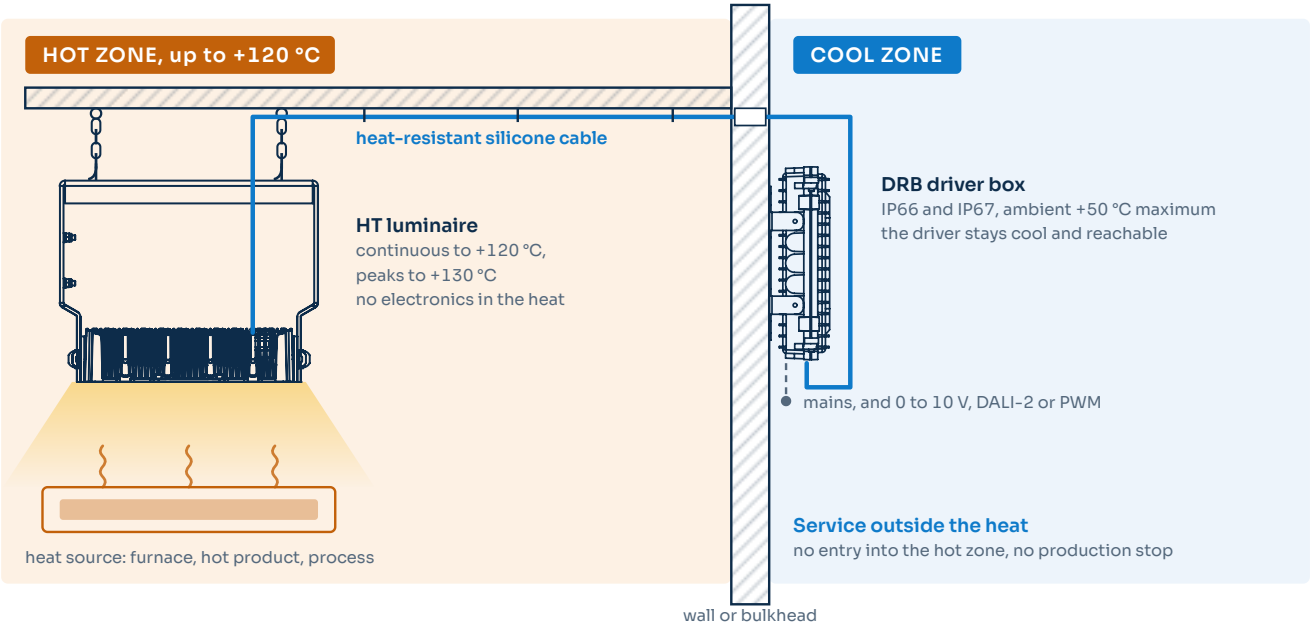
The HT system

Engineered as a system for heat, not as a luminaire that tolerates it.

Standard industrial LED luminaires are specified to roughly +50 °C ambient. Above that the driver electronics fail first: in virtually every failure of LED lighting in a hot environment, the driver is the weak link. Every installation in the HT line therefore consists of two parts. The heat resistant luminaire sits in the hot zone and the driver sits outside it, supplied bare as standard or built into a DRB driver box, joined by heat resistant silicone cable. Nothing that fails at temperature is left in the heat.

+120 °C continuous, with full warranty	**+130 °C** short peaks permitted	**150 m** heat-resistant silicone cable	**130,000 h** driver life at Tc 50 °C	**IP67** remote driver and DRB box

THE HIGH TEMPERATURE SYSTEM



The HT system: the luminaire in the heat, the driver outside it.

BUILT-IN SELF-PROTECTION

The luminaire protects itself with internal temperature feedback. As the internal temperature rises it dims back automatically, and on overheating it switches itself off. That feedback runs through the four core supply of every luminaire: two cores of 2.5 mm² for power and two of 0.5 mm² for temperature control. It is the reason the cable specification has four cores rather than two.

Above +130 °C, or unsure about the thermal load? Our engineers calculate the thermal load per mounting position and design the complete system, including the driver location, cable route and DRB selection. Photometric values are measured at a +50 °C reference ambient. HT luminaires are not ATEX certified.

Light output and optics

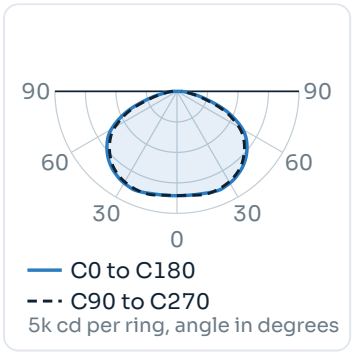
Values apply to the version without optics at Ta 25 °C, including driver consumption. The luminous flux is maintained across the full ambient range; what changes with temperature is the LED service life, stated as a ladder in the colour table.

BEAM CHARACTERISTICS

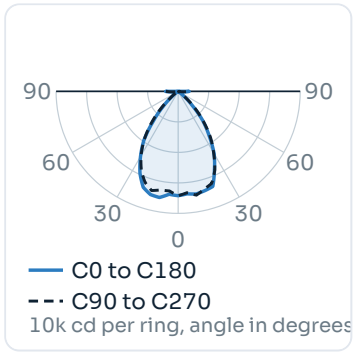
Version	Distribution	Beam angle 50 % of peak	Field angle 10 % of peak	Typical use
ORHT01	No optics, very wide	136°	168°	Close range over a wide field: furnace fronts, casting bays, oven zones
ORHT02, 20°	HT optic, narrow	20°	–	Long throw onto a specific target through a hot atmosphere
ORHT02, 40°	HT optic, medium	40°	–	Bay and aisle lighting from a hot roof structure
ORHT02, 60°	HT optic, wide	60°	–	General cover at moderate mounting height in the hot zone

The beam angle is the full angle between the two directions where the intensity has fallen to 50 % of the peak. HT optics are available on the Orca, the Barracuda and the Linear only; on the other high temperature luminaires the housing is too small to carry one and those versions are 120° very wide.

LIGHT DISTRIBUTION



ORHT01, no optics



ORHT02, 60° HT optic

OBTRUSIVE LIGHT

ULOR at 0° tilt	**0 %**
Colour temperatures	6500 K, 4000 K and 2700 K
Bi-colour	Not available on the high temperature versions

Nothing is emitted above the horizontal at 0° tilt. That is the figure a permitting authority asks for when a site 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, 4000 K, 2700 K
Bi-colour	Not available on the high temperature versions
Colour rendering	Ra > 70 standard, optionally 80 or 90
Colour consistency	MacAdam step 3 or better
LED service life	TM-21 L90B05, see the temperature ladder below
Ladder	> 360,000 h at 50 °C · 103,000 h at 85 °C · 71,700 h at 105 °C · 51,400 h at 120 °C

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.

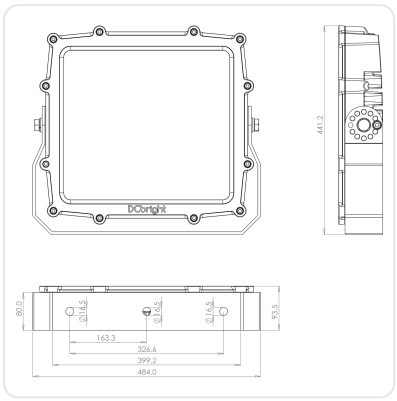
	Orca HT
PERFORMANCE	
Luminous flux, no optics	65,000 lm at 320 W · 51,000 lm at 240 W
Luminous flux, with optics	52,000 lm at 320 W · 39,000 lm at 240 W
Power consumption	320 W or 240 W
Beam	120° very wide, or 20°, 40° or 60° HT optic
ELECTRICAL AND DRIVER	
Supply voltage range	90–305 VAC or 180–528 VAC, 50/60 Hz
Current draw	1.5 A at 220 V and 0.8 A at 380 V at 320 W · 1.1 A at 220 V and 0.6 A at 380 V at 240 W
Power factor at full load	> 0.9 at 60 to 100 % load
THD at full load	< 15 % at 60 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	Remote 800 W driver, mounted outside the hot zone, bare or in the DRB-2
Driver ambient	The driver box must sit in an ambient of at most +50 °C
Driver life	≥ 100,000 h at Tc 75 °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 Light Grey
Bracket	High tensile 316L stainless steel, fully rotatable through 360° in 30° steps
Front	Chemically hardened glass IK09, or borosilicate glass
Protection class	Class II
Ingress protection	IP66, IP67, IP68 and IP69K, resistant to steam and high pressure cleaning
Impact resistance	IK09, set by the front cover (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 +120 °C continuous
LED service life	TM-21 L90B05: > 360,000 h at 50 °C · 103,000 h at 85 °C · 71,700 h at 105 °C · 51,400 h at 120 °C
Cable and termination	SiHF-OB heat resistant silicone, 4 cores (2 × 2.5 mm² + 2 × 0.5 mm²), 15.0 m as standard, up to 150 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, driver box separate
Warranty	5 years on the complete luminaire up to +120 °C

The driver box is mounted outside the hot zone and is connected with heat resistant silicone cable. The LED life ladder applies to every high temperature luminaire in the range and is stated in the colour table rather than as a footnote.

Mechanics, mounting and driver

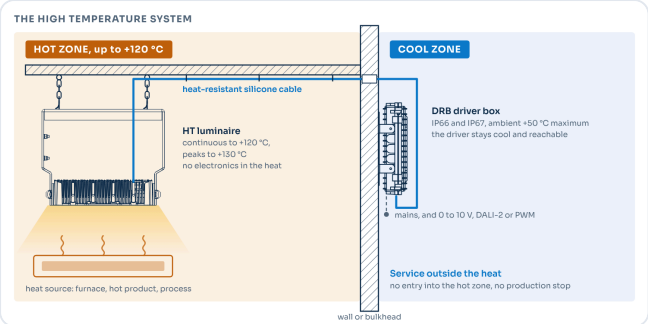
All drawings are to scale and dimensioned in millimetres. The driver box is a separate item and is mounted outside the hot zone.

STANDARD BRACKET



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, 163.3 mm pitch
Adjustment	360° in 30° steps, twelve positions

LUMINAIRE AND DRIVER BOX



In the hot zone	The luminaire only
Outside the hot zone	The driver, in the DRB-2 or on a tray
Between them	Heat resistant silicone cable, 15.0 m standard, up to 150 m
Driver ambient	+50 °C maximum
Longer runs	Beyond 150 m is a custom build

MOUNTING AND ACCESSORIES

Standard bracket	High tensile 316L, supplied as standard
DRB-2 driver box	Housing for the remote driver, outside the hot zone
Borosilicate front	Option where the glass sees direct radiant heat
Safety cable	Optional, supplied with the luminaire
Silicone cable	15.0 m as standard, up to 150 m. Beyond that is a custom build
316L high temperature version	On request

REMOTE DRIVER

Type	800 W remote driver, 90–305 or 180–528 VAC
Position	Outside the hot zone, ambient +50 °C maximum
Case temperature	Tc −40 to +90 °C
Lifetime	≥ 100,000 h at Tc 75 °C
Size and weight	237 × 125 × 49 mm, 2,600 g
Enclosure	Bare, or in the DRB-2

Heat is what kills a driver, not the LED. Electrolytic capacitors dry out. Moving the driver out of the hot zone is the single change that turns a high temperature installation from a yearly job into a ten year one.

DRB-2 DRIVER BOX



Use	Housing for the remote driver, outside the hot zone
DRB-2	Systems up to 2,000 W. 441 × 290 × 145 mm, 10.4 kg, IP66 and IP67
Ingress protection	IP66 and IP67
Ambient	+50 °C maximum

Ordering, standards and documents

ORDER CODE

Example **ORHT01-65K**

Orca HT, no optics, 6500 K

ORHT01	High temperature, without optics, 120° very wide
ORHT02	High temperature, with 20°, 40° or 60° HT optic
65K · 40K · 27K	6500 K · 4000 K · 2700 K
.20 · .40 · .60	HT optic suffix on ORHT02
240W	Suffix for the 240 W build

Bi-colour and amber are not available on the high temperature versions. Cable length beyond 15.0 m, the diffuse borosilicate front and the 316L housing are confirmed at order.

COMBINATIONS

HT optics with 2700 K	Possible
Borosilicate front	Any version
316L housing	On request
Bi-colour	Not available
Cable to 150 m	Standard option
DC supply	Not available on the Orca 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 IK09, set by the front cover · 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/orca

WHERE IT EARNS ITS PLACE

Above +50 °C a normal floodlight is not a lighting problem, it is a maintenance contract. The Orca HT is specified where the hot zone cannot be reached during production and where the alternative is replacing drivers every year on a platform above a casting floor.

Notes. Values are for the standard configuration. The warranty follows the operating temperature: five years to +120 °C on AC and to +110 °C on DC. The LED life ladder in the colour table is the same for every high temperature luminaire in the range. North American models on request. The JEL range is not ATEX or Ex certified.