HIGH TEMPERATURE LED FLOODLIGHT

Snapper HT

Shown: Snapper HT, chemically hardened glass front, remote driver box.

CE · IP69K · IK08 · Class II · Ta −45 … +120 °C · C5 and CX ISO 9223 · 90–305 VAC · 24 VDC · silicone cable to 25 m · borosilicate option · 316L and HT-CHEM · remote driver

7,000 lumens at 35 watts and an ambient temperature of +120 °C, which is 200 lumens per watt. High temperature luminaires normally cost efficacy, because the usual approach is to derate a standard product until it survives. This one is designed for the condition.

LUMINOUS FLUX	POWER	EFFICACY
7,000 lm	35 W	200 lm/W
AMBIENT	**INGRESS**	**CABLE RUN**
+120 °C	IP69K	25 m

Values apply at 6500 K and the stated ambient temperature, including driver consumption. Bi-colour and amber are not available on the high temperature versions.

WHY IT IS SPECIFIED

The driver leaves the hot zone. Electrolytic capacitors are what fail in heat. The driver sits outside the zone and is connected with heat resistant silicone cable, up to 25 m on the aluminium AC version.

200 lm per watt at +120 °C. This is the most efficient luminaire in the high temperature range and it is the figure that decides whether a hot process gets proper light or a compromise.

Five versions, including 316L and HT-CHEM. Aluminium AC and DC, 316L AC and DC, and a chemically resistant 316L build for process environments where stainless steel alone is not enough.

WHERE IT IS USED

- Drying ovens and curing tunnels
- Paint lines and powder coating booths
- Bakery and food process ovens
- Heat treatment and forging shops
- Foundry and melt shop service positions
- Glass works and annealing lehrs
- Paper machine drying sections
- Climate and test chambers
- Sterilisation and autoclave rooms
- Chemical reactors and process skids
- Asphalt and bitumen plant

VERSIONS

	Alu	316L	CHEM
Code	SNHT01·02	SNHT03·04	SNHT05
Supply	AC and DC	AC and DC	AC
Flux	7,000 lm	7,000 lm	7,000 lm
Ambient	+120 °C	+120 °C	+120 °C
Weight	3.1 kg	7.0 kg	7.0 kg

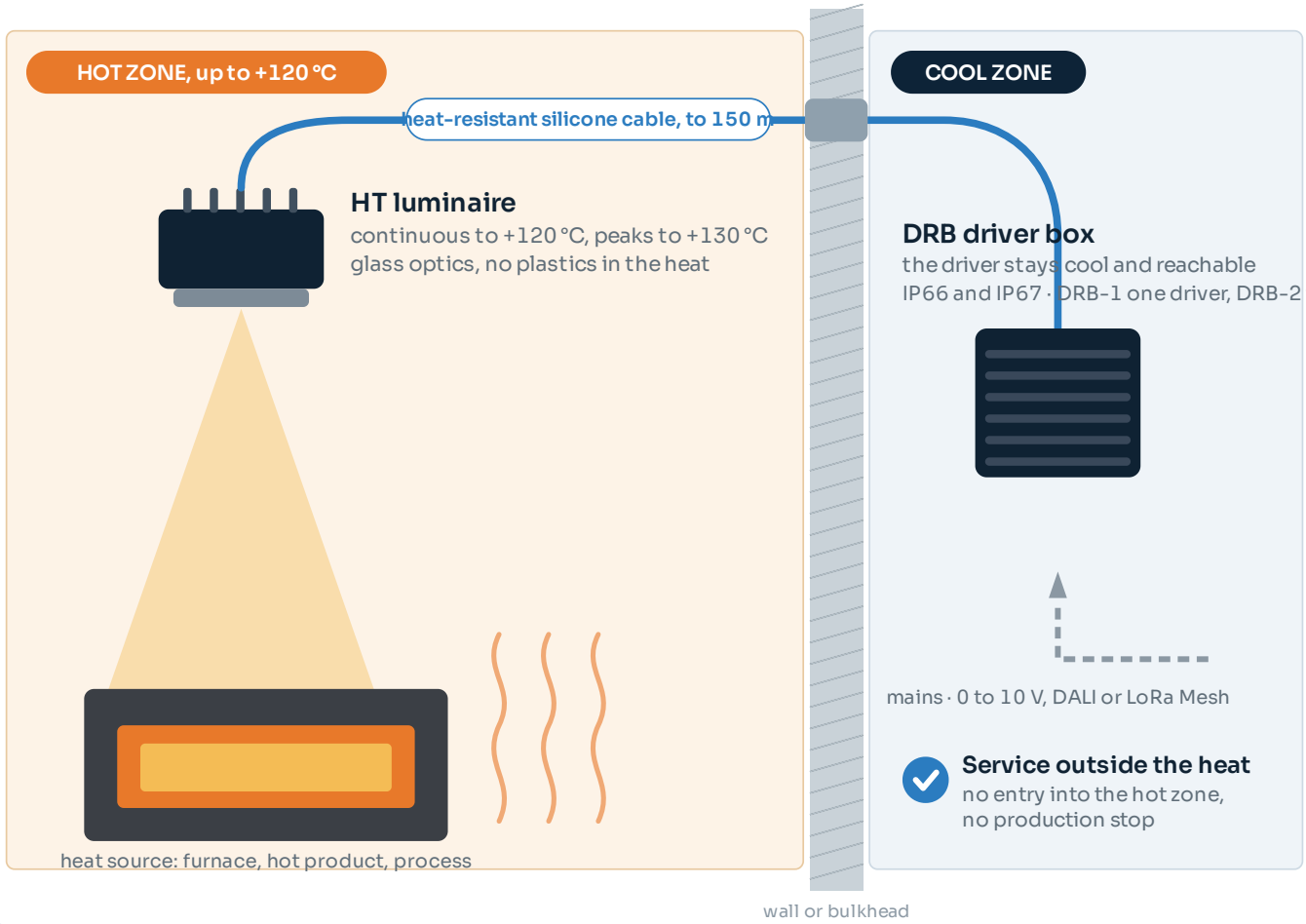
HT optics are not possible on the Snapper: the housing is too small. All versions are 120° very wide. For high temperature with optics see the **Barracuda HT**.

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	**25 m** heat-resistant silicone cable	**130,000 h** driver life at Tc 50 °C	**IP67** remote driver and DRB box



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 1.0 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

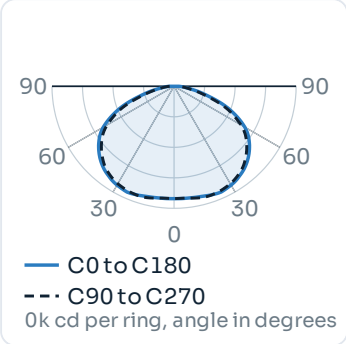
Values apply at Ta 25 °C, including driver consumption. The luminous flux is maintained across the full ambient range; what changes with temperature is the LED service life, stated as a ladder in the colour table.

BEAM CHARACTERISTICS

Version	Distribution	Beam angle 50 % of peak	Field angle 10 % of peak	Typical use
All HT versions	No optics, very wide	136°	168°	Close range over a wide field: oven interiors, drying tunnels, process bays
HT optics	Not available on the Snapper	–	–	See the Barracuda HT or the Orca HT

HT optics of 20°, 40° and 60° exist for the Orca, the Barracuda and the Linear only. On the Snapper, the Goby and the Manta the housing is too small to carry one, so those high temperature versions are supplied as 120° very wide. That is not a limitation in most hot applications, where the luminaire sits close to the work and a wide field is what is wanted.

LIGHT DISTRIBUTION



120° very wide, all HT versions

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.

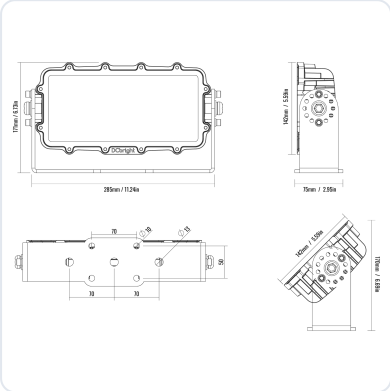
	HT aluminium	HT 316L	HT-CHEM
PERFORMANCE			
Luminous flux	7,000 lm	7,000 lm	7,000 lm
Power consumption	35 W	35 W	35 W
Efficacy	200 lm/W	200 lm/W	200 lm/W
Beam	120° very wide		
ELECTRICAL AND DRIVER			
Supply voltage range	90–305 VAC or 20–35 VDC	90–305 VAC or 20–35 VDC	90–305 VAC
Current draw	0.3 A at 110 V · 0.2 A at 220 V · DC 1.5 A at 24 V	0.3 A at 110 V · 0.2 A at 220 V · DC 1.5 A at 24 V	0.3 A at 110 V · 0.2 A at 220 V
Power factor at full load	> 0.9 at 65 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. DC on request		
Driver	Remote BLD075, 131 × 68 × 33.5 mm, 650 g. Fits the DRB-1	Remote BLD075, fits the DRB-1	Remote BLD075, fits the DRB-1
Driver ambient	The driver box must sit in an ambient of at most +50 °C		
Driver life	≥ 100,000 h at Tc 75 °C, MTBF ≥ 320,000 h		
CONSTRUCTION			
Housing	Cast aluminium, less than 0.08 % copper	Solid 316L stainless steel	316L with an additional chemically resistant seal
Surface finish	Conversion layer plus 2-layer titanium-based e-coating	Electrolytically polished	Electrolytically polished
Bracket	High tensile 316L stainless steel, adjustable through ±240° in 30° steps		
Front	Impact resistant glass or borosilicate, IK08		
Protection class	Class II		
Ingress protection	IP66, IP67 and IP68	IP66, IP67, IP68 and IP69K	IP66, IP67, IP68 and IP69K
Impact resistance	IK08 (IEC 62262)		
Corrosion class	C5 industrial and marine	C5 and CX, CRC III to EN 1993-1-4	C5 and CX, with added chemical resistance
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 AC, −45 to +110 °C DC		
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 silicone, 4 cores (2 × 1.0 mm² + 2 × 0.5 mm²), 25.0 m	SiHF-OB silicone, 15.0 m	SiHF-OB silicone, 15.0 m
Dimensions	312 × 181 × 118 mm	320 × 180 × 100 mm	320 × 180 × 100 mm
Weight	3.1 kg incl. bracket	7.0 kg incl. bracket	7.0 kg incl. bracket
Warranty	5 years to +120 °C on AC, to +110 °C on DC. The 316L versions carry 20 years on the housing		

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

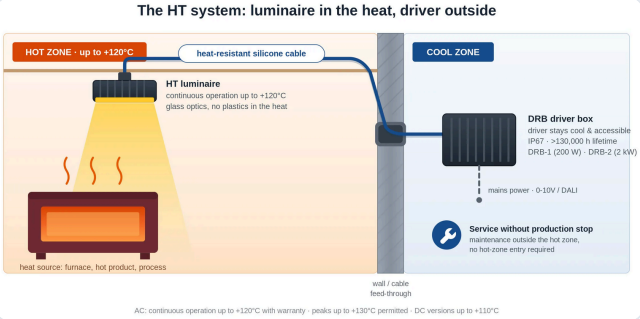
All drawings are to scale and dimensioned in millimetres. The driver box is a separate item and is mounted outside the hot zone.

STANDARD BRACKET



Aluminium versions	312 × 181 × 118 mm, 3.1 kg
316L and HT-CHEM	320 × 180 × 100 mm, 7.0 kg
Material	High tensile 316L stainless steel
Adjustment	±240° in 30° steps
Front	Impact resistant glass, or diffuse borosilicate for food industry applications

LUMINAIRE AND DRIVER BOX



In the hot zone	The luminaire only
Outside the hot zone	The BLD075 driver, in the DRB-1 or on a tray
Between them	Silicone cable, 25.0 m on aluminium AC, 15.0 m on the others
Driver ambient	+50 °C maximum
Longer runs	Beyond the standard length is a custom build

MOUNTING AND ACCESSORIES

Standard bracket	High tensile 316L, supplied as standard
DRB-1 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
HT-CHEM	316L with an additional chemically resistant seal
Higher output at temperature	See the Barracuda HT at 20,600 lm or the Orca HT at 65,000 lm

REMOTE DRIVER

Type	BLD075, 90–305 VAC or 127–420 VDC
Position	Outside the hot zone, ambient +50 °C maximum
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	131 × 68 × 33.5 mm, 650 g

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-1 DRIVER BOX

Use	Housing for the remote driver, outside the hot zone
DRB-1	One driver up to 320 W. 276 × 194 × 86.5 mm, 4.2 kg, IP66 and IP67
Ingress protection	IP66 and IP67
Ambient	+50 °C maximum

Ordering, standards and documents

ORDER CODE

Example **SNHT01-65K**

Snapper HT, aluminium, AC, 6500 K

SNHT01 · SNHT02	Aluminium, AC and DC
SNHT03 · SNHT04	316L stainless steel, AC and DC
SNHT05	HT-CHEM, 316L with a chemically resistant seal
65K · 40K · 27K	6500 K · 4000 K · 2700 K
BORO	Borosilicate front instead of impact resistant glass

All high temperature versions are 120° very wide; there is no optic suffix. Cable length beyond the standard run and the diffuse borosilicate front are confirmed at order.

COMBINATIONS

Borosilicate front	Any version
316L with DC	Possible
HT-CHEM with DC	On request
Bi-colour or amber	Not available
HT optics	Not possible, see the Barracuda HT
Cable beyond the standard run	Custom build

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 · IEC 60533 marine, bridge and open deck	TÜV
Ingress	IEC 60529 and ISO 20653. IP66, IP67, IP68, IP69K on 316L	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/snapper

WHERE IT EARNS ITS PLACE

Above +50 °C a normal luminaire is not a lighting problem, it is a maintenance contract. The Snapper HT is specified where the hot zone cannot be reached during production, where the light has to be close to the work, and where 200 lumens per watt means the installed load stays small enough that nobody argues about it.

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.