JEL PRODUCTS
SUSTAINABLE | LIGHTING | SOLUTIONS

COLLECTED TECHNICAL DATASHEETS

DarkLicht

Full cut off lighting from 4,800 to 307,800 lumens, with an upward light output ratio of 0 % and a factory set cut off angle between 63 and 75 degrees. Third party tested against DarkSky DS-1.

LUMINAIRES	UPWARD LIGHT	CUT OFF	EFFICACY
6	0 %	63–75 degrees	up to 171 lm/W



Terminal lighting at DFDS Seaways Vlaardingen

DarkLicht Mini · DarkLicht S · DarkLicht M · DarkLicht D · DarkLicht WP · DarkLicht One · DarkLicht Two · DarkLicht Three

Contents

Six DarkLicht types, grouped by what they mount on. The page numbers run through the whole document.

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ON A MACHINE OR A VEHICLE

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ON A MAST, A CRANE OR A LIGHT TOWER

14	**DarkLicht M**	25,700 and 51,300 lm, in AC and in 24 V DC

FIXED ON A SITE

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39	**DarkLicht Three**	307,800 lm from one housing, the largest full cut off luminaire

HOW TO READ THIS DOCUMENT

Every luminaire 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 below run through the whole document.

The selection table on the next page is the fastest route. It puts the luminaires side by side on the figures that actually decide a specification: output, mass, impact class, supply and what the housing is made of. The individual datasheets follow in the same order.

The DarkLicht principle

A conventional floodlight lights everything in front of it, including the sky, the neighbour and the driver approaching the site. The DarkLicht range is built the other way around.

A REFLECTOR, NOT A LENS

A lens bends light and a shield absorbs it. Both leave a tail above the horizontal, and a shield throws away part of the output on the way. The DarkLicht uses a patented parabolic reflector that throws the light forward and down and cuts it off completely above the set angle. Upward light output ratio is 0 %.

CHOSEN AT ORDER, NOT ON SITE

The cut off angle is a mechanical shield position on the luminaire, between 63 and 75 degrees. It is set in the factory to the position S1 to S5 given on the order, and it changes where the light lands rather than how much of it there is. Tell us the mounting height and the boundary and the luminaire arrives set for it.

WITHOUT THE EFFICIENCY PENALTY

The range reaches up to 171 lumens per watt with the cut off in place. That figure is what decides whether a cut off solution survives the specification stage, because a shielded conventional floodlight loses output and the site then needs more columns or more masts to reach the same illuminance.

WHAT IT IS TESTED AGAINST

Obtrusive light	NSVV guideline on light nuisance
DarkSky	DS-1 requirements met at 1700 to 2200 K, third party tested
Outdoor workplaces	EN 12464-2
Sports lighting	EN 12193
Luminaire safety	IEC 60598, CE, and ENEC on the Mini

ONE LIGHT DISTRIBUTION ACROSS THE WHOLE LINE

Every DarkLicht type shares one light distribution. A lighting designer works with one photometric behaviour from the 4,800 lumen work lamp on a sweeper to the 307,800 lumen area light on a high mast, which keeps a mixed site coherent and keeps one measured set valid for the whole calculation.

WHERE THE LINE IS DIFFERENT FROM THE REST OF THE RANGE

LED service life	L90B05 > 103,500 h, against 360,000 h on the floodlight range
Ingress	M, S, Mini and WP are IP69K. D, One, Two and Three are IP67
Impact	IK08, and IK07 on the One, Two and Three
Tuneable white	4000 K with 2200 K and 1700 K, switchable in operation
Warranty	Five years, and ten on the D, WP, One, Two and Three under a maintenance agreement

WHY THIS MATTERS MORE EVERY YEAR

Obtrusive light limits now apply to industrial sites in most European jurisdictions, and they are checked with a calculation before the permit and with a measurement after a complaint. Measured photometry and a stated upward light output ratio of 0 % turn that from a discussion into a document.

Selection table

The whole DarkLicht line side by side, grouped by what it mounts on.

Luminaire	Flux lm	W	kg	Supply	Ingress	Bracket	Typical
ON A MACHINE OR A VEHICLE							
DarkLicht Mini	4,800	30	1.0	10–50 V DC	IP69K	Fixed bracket	Sweepers, forklifts, asphalt
DarkLicht S75	12,825	75	3.3	20–32 V DC	IP69K	316L, ±20°	Mining, paving, cranes
ON A MAST, A CRANE OR A LIGHT TOWER							
DarkLicht M150	25,700	150	3.6	AC · 24 V DC	IP69K	Fixed bracket	Light towers, tower cranes
DarkLicht M300	51,300	300	5.5	AC · 24 V DC	IP69K	Fixed bracket	Light towers, road works
FIXED ON A SITE							
DarkLicht D60	10,300	60	6.9	AC	IP67	316L, ±20°	Car parks, yards
DarkLicht D120	20,500	120	7.1	AC	IP67	316L, ±20°	Yards, access roads
DarkLicht D200	34,200	200	8.5	AC	IP67	316L, ±20°	Logistics yards, depots
DarkLicht WP 60	9,600	10–60	4.0	AC	IP69K	Facade plate	Perimeters, dock doors
DarkLicht WP 100	16,000	10–100	4.0	AC	IP69K	Facade plate	Perimeters, escape routes
ON A HIGH MAST							
DarkLicht One	51,200–102,600	320–600	14–15	AC	IP67	316L, ±20°	Terminals, tower cranes
DarkLicht Two	136,800–205,200	800–1,200	24.8	AC	IP67	316L, ±20°	Terminals, sports
DarkLicht Three	307,800	1,800	35.0	AC	IP67	316L, ±20°	Large terminals, sports

All types share one light distribution and the same cut off range of 63 to 75 degrees, factory set to the ordered shield position. Upward light output ratio is 0 % on every type at every setting. LED service life across the line is L90B05 greater than 103,500 hours. Wind load data is on the individual datasheets of the S, the D, the M and the One, Two and Three.

GLARE FREE LED WORK LAMP

DarkLicht Mini



Shown: DarkLicht Mini, 4,800 lm, cut off set to 69°.

CE | ENEC | IP69K | IK08 | Class II | Vibration 6 G | C5 ISO 9223 | Ta −45 … +50 °C | 10–50 VDC | ULOR 0 % | DarkSky DS-1 | cut off 63–75° | 5-year warranty

4,800 lumens with no glare at all. The DarkLicht Mini is the compact cut off work lamp for machines and vehicles working where people are: the light reaches the work and not the operator, the driver behind, or the people standing next to the machine.

LUMINOUS FLUX	POWER	EFFICACY
4,800 lm	30 W	160 lm/W
ULOR	**CUT OFF**	**SUPPLY**
0 %	63–75°	10–50 VDC

Values apply to the standard version at 4000 K, Ta 25 °C, including reflector losses and driver consumption, with the cut off set to the standard position.

WHY IT IS SPECIFIED

A work lamp that does not blind the person next to it. Conventional work lamps scatter light upwards and sideways, which is why a machine working at night is unpleasant to stand near and dangerous to drive past.

Legal exposure on public work. Road maintenance, municipal work and night work in a residential area is where a complaint becomes a stopped job. A cut off lamp settles that before it is raised.

10 to 50 V DC on one part number. 12, 24 and 36 volt machines take the same lamp, with the connector in the housing and no cable tail to route or damage.

WHERE IT IS USED

- Service and maintenance vehicles
- Forklifts and reach trucks
- Asphalt machines and paving trains
- Small excavators and loaders
- Sweepers and winter service vehicles
- Mobile crane booms, on the Crane Light Director
- Municipal and utility vehicles
- Airport and terminal ground support equipment
- Work zones alongside public roads
- Night work near housing
- Agricultural machines working close to dwellings
- Rail maintenance vehicles

VERSIONS

	DarkLicht Mini
Article base code	DRKM01
Luminous flux	4,800 lm
Power	30 W
Efficacy	160 lm/W
Supply	10–50 VDC, 12, 24 or 36 V nominal
Dimensions	179 × 120 × 95 mm
Weight	1.0 kg

The manufacturer calls this type DL M30. JEL sells it as the Mini so that a customer sees at once that it is the smaller model. For more output with the same cut off, see the **DarkLicht S** at 10,260 and 12,825 lm.

Light output and optics

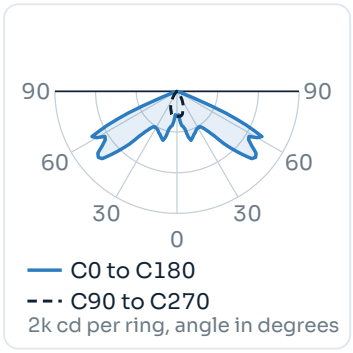
Values apply at Ta 25 °C with the cut off in the standard position. The whole DarkLicht line shares one light distribution, so the diagrams below apply to every type in the range at its own luminous flux.

BEAM CHARACTERISTICS

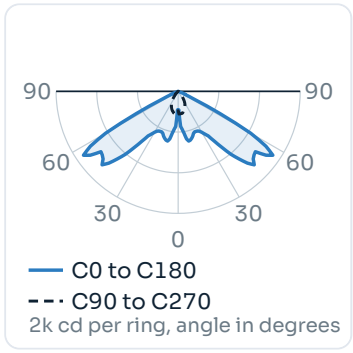
Setting	Distribution	Cut off	Beam angle 50 % of peak	Typical use
63°	Full cut off, asymmetric	63°	–	Tight boundaries, a site directly against housing or a carriageway
66° and 69°	Full cut off, asymmetric	66° and 69°	–	The usual settings for a yard or a car park
72°	Full cut off, asymmetric	72°	123°	Wider cover where the boundary allows it
75°	Full cut off, asymmetric	75°	132°	Maximum reach, sites without a sensitive boundary

The DarkLicht does not use lenses. A patented parabolic reflector throws the light forward and down and cuts it off completely above the set angle, which is set at the factory to the shield position given on the order, between 63 and 75 degrees. The two diagrams show the two shielding positions of the reflector. The whole DarkLicht line shares one light distribution, so one measured set covers every type in the range and a lighting designer works with one photometric behaviour at every mounting height.

LIGHT DISTRIBUTION



Shielding position 1



Shielding position 2

OBTRUSIVE LIGHT

ULOR at 0° tilt	**0 %**
Cut off angle	Factory set, shield position S1 to S5, 63° to 75°
Standards	NSVV guideline · DarkSky DS-1 · EN 12464-2 · EN 12193

A conventional floodlight lights everything in front of it, including the sky, the neighbour and the driver approaching the site. The DarkLicht range is built the other way around: a patented parabolic reflector, not a lens, cuts the light off completely above an angle that is set at the factory between 63 and 75 degrees and specified with the order. Upward light output ratio is 0 %, and the luminaires have been third party tested against the DarkSky DS-1 requirements at colour temperatures between 1700 and 2200 K.

COLOUR AND CONSISTENCY

Colour temperatures	5700 K, 5000 K, 4000 K, 3000 K, 2700 K, amber 2200 K, 1800 K, 1700 K
Tuneable white	4000 K with 2200 K and 1700 K, switchable in operation
DarkSky DS-1	Met at 1700 to 2200 K, third party tested
Colour rendering	Ra > 70 standard, optionally 80 or 90
Colour consistency	MacAdam step 3 or better
LED service life	TM-21 L90B05 > 103,500 h

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.

	DarkLicht Mini
PERFORMANCE	
Luminous flux	4,800 lm
Power consumption	30 W
Efficacy	160 lm/W
Upward light output ratio	0 % at 0° tilt
Cut off angle	63°, 66°, 69°, 72° or 75°, factory set, shield position S1 to S5
ELECTRICAL	
Supply voltage range	10–50 VDC
Nominal voltage	12, 24 or 36 V
Current draw	2.5 A at 12 V · 1.3 A at 24 V · 0.8 A at 36 V
Driver	DC drivers on board, no external box
Dimming	On request
CONSTRUCTION	
Housing	Cast aluminium, less than 0.08 % copper
Optic	Patented parabolic reflector, no lens
Bracket	Fixed bracket, aluminium, less than 0.08 % copper
Front	Impact resistant glass, 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
Vibration	6 G at resonant frequency (IEC 60068-2-6)
LED service life	TM-21 L90B05 > 103,500 h
Termination	Deutsch DTP04 two pole connector fitted in the housing. There is no cable
Mating connector	Available as an accessory, not supplied as standard
Dimensions	179 × 120 × 95 mm
Weight	1.0 kg
Certification	CE, ENEC, IEC 60598
Warranty	5 years on the complete luminaire

The cut off angle is a mechanical setting made at the factory to the ordered shield position. It changes where the light lands, not how much of it there is.

Mechanics, mounting and driver

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

HOUSING AND BRACKET


Maattekening DarkLicht Mini met maatvoering in millimeters

Dimensions	179 × 120 × 95 mm
Weight	1.0 kg
Bracket	Fixed, aluminium
Front	Impact resistant glass, IK08
Optic	Patented parabolic reflector
Larger version	DarkLicht S, 260 × 200 × 130 mm, 3.3 kg

CUT OFF SETTING

Range	63°, 66°, 69°, 72° or 75°
Set where	On site, on the machine
Effect	Where the light stops, not how much there is
When it is set	At the factory, to the shield position S1 to S5 given on the order
ULOR	0 % at every setting

MOUNTING AND ACCESSORIES

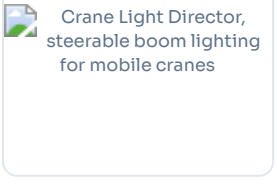
Fixed bracket	Aluminium, supplied as standard
Mating connector	Deutsch DTP04, available as an accessory
Crane Light Director	Steerable boom system for mobile cranes. Separate datasheet
More output, same cut off	DarkLicht S at 10,260 and 12,825 lm
Rugged alternative	Piranha, where the position is mechanically punished
Maximum spread instead	Goby Mini, without cut off

DRIVERS ON BOARD

Type	DC drivers on the board inside the housing
External box	None
Supply range	10 to 50 V DC
Nominal	12, 24 or 36 V
AC version	Not available
Certification	CE, ENEC, IEC 60598

One component instead of three. Drivers on board and the connector in the housing, so a machine builder fits a DarkLicht Mini with one plug.

CRANE LIGHT DIRECTOR


Crane Light Director, steerable boom lighting for mobile cranes

What it is	Steerable boom lighting for mobile cranes, fitted as a retrofit
Cut off on a crane	Keeps the beam off the operator as the boom comes down
Other luminaires	Goby Mini, Goby, Piranha, DarkLicht S and Marlin
Control	From the cabin, over a LoRa controller or a cabin switch

Ordering, standards and documents

ORDER CODE

Example **DRKM01-40K**

DarkLicht Mini, 4000 K

DRKM01	DarkLicht Mini, 10–50 VDC, drivers on board
57K · 50K · 40K · 30K · 27K	5700 K · 5000 K · 4000 K · 3000 K · 2700 K
22K · 18K · 17K	Amber 2200 K · 1800 K · 1700 K, DarkSky DS-1 range
TW	Tuneable white, 4000 K with 2200 K and 1700 K
Cut off	Shield position S1 to S5, specified with the order

The cut off angle is a factory setting: give the shield position S1 to S5 with the order. The mating connector is ordered separately.

COMBINATIONS

Tuneable white with DS-1 colours	Possible
Cut off at any setting	Standard
Crane Light Director	Standard
AC supply	Not available
High temperature	Not available
316L housing	Not available

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	IEC 62262 IK08	In-house test
Corrosion	ISO 9223 class C5, industrial and marine	In-house test
Obtrusive light	NSVV guideline · DarkSky DS-1 at 1700 to 2200 K · EN 12464-2 · EN 12193	Third party 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 DarkLicht Mini

PRODUCT PAGE

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

WHERE IT EARNS ITS PLACE

The DarkLicht Mini earns its place on machines that work where people are. A sweeper on a city street, an asphalt train on a live carriageway or a forklift in a yard next to housing is not lighting an empty field. Everything the lamp throws past the work lands on somebody, and that is what turns night work into a complaint.

Notes. Values are for the standard configuration. The cut off angle is a factory setting and does not change the luminous flux, only where the light lands. The stated LED service life of L90B05 > 103,500 hours is the figure for the DarkLicht range and is lower than the 360,000 hours of the floodlight range; that is a property of this reflector platform. The JEL range is not ATEX or Ex certified.

GLARE FREE LED WORK LAMP

DarkLicht S



Shown: DarkLicht S75, 12,825 lm, cut off set to 69°.

CE | IP69K | IK08 | Class II | C5 ISO 9223 | Ta −45 … +50 °C | 9–32 VDC | ULOR 0 % | DarkSky DS-1 | cut off 63–75° | Crane Light Director | 5-year warranty

12,825 lumens with a full cut off beyond the set angle. The strongest cut off work lamp in the range: floodlight output on a machine bracket, without the spill that makes a floodlight unusable on mobile plant.

LUMINOUS FLUX	POWER	EFFICACY
12,825 lm	75 W	171 lm/W
ULOR	**CUT OFF**	**WEIGHT**
0 %	63–75°	3.3 kg

Values apply to the standard version at 4000 K, Ta 25 °C, including reflector losses and driver consumption, with the cut off set to the standard position.

WHY IT IS SPECIFIED

The strongest cut off work lamp in the range. 12,825 lm at 171 lumens per watt with the reflector in place. That is floodlight output from a machine bracket.

The cut off angle is chosen for the machine. Between 63 and 75 degrees, set at the factory to the shield position S1 to S5 given on the order, matched to the mounting height and the work zone.

One of the five luminaires the Crane Light Director carries. On a mobile crane it is tilted and switched from the cabin, so the boom is lit without anyone climbing it and without the beam swinging into the operator as the boom comes down.

WHERE IT IS USED

- Mining and extraction equipment
- Asphalt machines and paving trains
- Service and maintenance vehicles
- Mobile crane booms, on the Crane Light Director
- Excavators and loaders working at night
- Drilling and foundation rigs
- Rail maintenance and tamping machines
- Harbour and terminal vehicles
- Work zones alongside live traffic
- Sites bordering housing or protected nature
- Machine positions where an operator faces the lamp
- Mobile plant on 24 V DC

VERSIONS

	DarkLicht S75	DarkLicht S60
Article base code	DRKS02	DRKS01
Luminous flux	12,825 lm	10,260 lm
Power	75 W	60 W
Efficacy	171 lm/W	171 lm/W
Supply	20–32 VDC	9–32 VDC, 12 or 24 V
Dimensions	260 × 200 × 130 mm	260 × 200 × 130 mm
Weight	3.3 kg	3.3 kg

Both versions are DC. For a fixed installation on a mast or a light tower with the same cut off, see the **DarkLicht M** at 25,700 and 51,300 lm.

Light output and optics

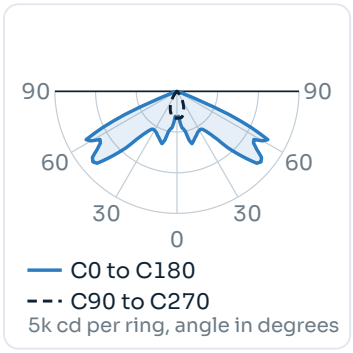
Values apply to the S75 at Ta 25 °C with the cut off in the standard position. The whole DarkLicht line shares one light distribution, so the diagrams below apply to every type at its own luminous flux.

BEAM CHARACTERISTICS

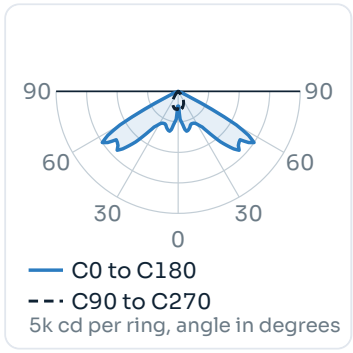
Setting	Distribution	Cut off	Beam angle 50 % of peak	Typical use
63°	Full cut off, asymmetric	63°	–	Tight boundaries, a site directly against housing or a carriageway
66° and 69°	Full cut off, asymmetric	66° and 69°	–	The usual settings for a yard or a car park
72°	Full cut off, asymmetric	72°	123°	Wider cover where the boundary allows it
75°	Full cut off, asymmetric	75°	132°	Maximum reach, sites without a sensitive boundary

The DarkLicht does not use lenses. A patented parabolic reflector throws the light forward and down and cuts it off completely above the set angle, which is set at the factory to the shield position given on the order, between 63 and 75 degrees. The two diagrams show the two shielding positions of the reflector. The whole DarkLicht line shares one light distribution, so one measured set covers every type in the range and a lighting designer works with one photometric behaviour at every mounting height.

LIGHT DISTRIBUTION



Shielding position 1



Shielding position 2

OBTRUSIVE LIGHT

ULOR at 0° tilt	**0 %**
Cut off angle	Factory set, shield position S1 to S5, 63° to 75°
Standards	NSVV guideline · DarkSky DS-1 · EN 12464-2 · EN 12193

A conventional floodlight lights everything in front of it, including the sky, the neighbour and the driver approaching the site. The DarkLicht range is built the other way around: a patented parabolic reflector, not a lens, cuts the light off completely above an angle that is set at the factory between 63 and 75 degrees and specified with the order. Upward light output ratio is 0 %, and the luminaires have been third party tested against the DarkSky DS-1 requirements at colour temperatures between 1700 and 2200 K.

COLOUR AND CONSISTENCY

Colour temperatures	5700 K, 5000 K, 4000 K, 3000 K, 2700 K, amber 2200 K, 1800 K, 1700 K
Tuneable white	4000 K with 2200 K and 1700 K, switchable in operation
DarkSky DS-1	Met at 1700 to 2200 K, third party tested
Colour rendering	Ra > 70 standard, optionally 80 or 90
Colour consistency	MacAdam step 3 or better
LED service life	TM-21 L90B05 > 103,500 h

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.

	DarkLicht S75	DarkLicht S60
PERFORMANCE		
Luminous flux	12,825 lm	10,260 lm
Power consumption	75 W	60 W
Efficacy	171 lm/W	171 lm/W
Upward light output ratio	0 % at 0° tilt	
Cut off angle	63°, 66°, 69°, 72° or 75°, factory set, shield position S1 to S5	
ELECTRICAL		
Supply voltage range	20–32 VDC	9–32 VDC
Nominal voltage	24 V	12 or 24 V
Current draw	3.1 A at 24 V	2.5 A at 24 V · 5.0 A at 12 V
Driver	DC drivers on board, no external box	
Dimming	On request	
CONSTRUCTION		
Housing	Cast aluminium, less than 0.08 % copper	
Optic	Patented parabolic reflector, no lens	
Bracket	High tensile 316L stainless steel, unlimited rotation from -20° to +20°	
Front	Impact resistant glass, 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 > 103,500 h	
Cable and termination	H07BQ-F, 2 cores (2 × 1.5 mm²), 0.3 m	
Dimensions	260 × 200 × 130 mm	
Weight	3.3 kg incl. bracket	
Wind load, frontal	18,750 mm² at 0° tilt to 44,500 mm² at 20°. Side 26,800 to 33,000 mm². Cd 1.18	
Warranty	5 years on the complete luminaire	

Wind load data is from the DarkLicht wind rating report and applies to the S60. The cut off angle is a mechanical setting on the luminaire and changes where the light lands, not how much of it there is.

Mechanics, mounting and driver

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

HOUSING AND BRACKET


Maattekening DarkLicht S met maatvoering in millimeters

Dimensions	260 × 200 × 130 mm
Weight	3.3 kg incl. bracket
Bracket	High tensile 316L, unlimited from -20° to +20°
Front	Impact resistant glass, IK08
Optic	Patented parabolic reflector
Smaller version	DarkLicht Mini, 179 × 120 × 95 mm, 1.0 kg

WIND LOAD, S60

Frontal at 0°	18,750 mm²
Frontal at 10°	30,500 mm²
Frontal at 20°	44,500 mm²
Side, 0° to 20°	26,800 to 33,000 mm²
Drag coefficient	Cd 1.18
Source	DarkLicht wind rating report

MOUNTING AND ACCESSORIES

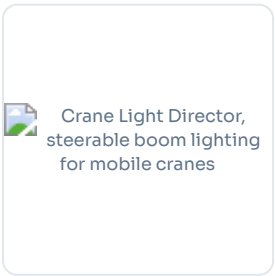
Standard bracket	High tensile 316L, supplied as standard
Crane Light Director	Steerable boom system for mobile cranes. Separate datasheet
Smaller version	DarkLicht Mini at 4,800 lm
Fixed installation	DarkLicht M at 25,700 and 51,300 lm
Maximum spread instead	Goby, without cut off
Rugged alternative	Piranha, where the position is mechanically punished

DRIVERS ON BOARD

Type	DC drivers on the board inside the housing
External box	None
Supply range	20 to 32 V on the S75, 9 to 32 V on the S60
Nominal	24 V, and 12 V on the S60
AC version	Not available, see the DarkLicht M
Dimming	On request

Nothing external on the machine. Drivers on board means one component, one cable and no driver box to find a place for on a machine that is already full.

CRANE LIGHT DIRECTOR


Crane Light Director, steerable boom lighting for mobile cranes

What it is	Steerable boom lighting for mobile cranes, fitted as a retrofit
DarkLicht S on the system	12,900 lm per tilting module, the glare free option
Other luminaires	Goby Mini, Goby, Piranha and Marlin
Control	From the cabin, over a LoRa controller or a cabin switch

Ordering, standards and documents

ORDER CODE

Example **DRKS02-40K**

DarkLicht S75, 4000 K

DRKS02 · DRKS01	S75 at 12,825 lm · S60 at 10,260 lm
57K · 50K · 40K · 30K · 27K	5700 K · 5000 K · 4000 K · 3000 K · 2700 K
22K · 18K · 17K	Amber 2200 K · 1800 K · 1700 K, DarkSky DS-1 range
TW	Tuneable white, 4000 K with 2200 K and 1700 K
Cut off	Shield position S1 to S5, specified with the order

The cut off angle is a factory setting: give the shield position S1 to S5 with the order. Cable length beyond 0.3 m is confirmed at order.

COMBINATIONS

Tuneable white with DS-1 colours	Possible
Cut off at any setting	Standard
Crane Light Director	Standard
AC supply	Not available, see the DarkLicht M
High temperature	Not available
316L housing	Not available

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	IEC 62262 IK08	In-house test
Corrosion	ISO 9223 class C5, industrial and marine	In-house test
Obtrusive light	NSVV guideline · DarkSky DS-1 at 1700 to 2200 K · EN 12464-2 · EN 12193	Third party 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.

WHERE IT EARNS ITS PLACE

The DarkLicht S earns its place on machines that work all night in places where somebody is watching. Asphalt work on a live carriageway, mining at the face and crane work on a construction site all need real light output, and all of them put an operator, a driver or a neighbour directly in front of the lamp.

QR-code naar de productpagina van de DarkLicht S

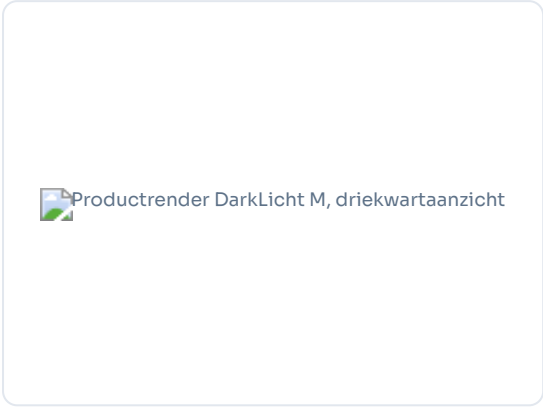
PRODUCT PAGE

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

Notes. Values are for the standard configuration. The cut off angle is a factory setting and does not change the luminous flux, only where the light lands. The stated LED service life of L90B05 > 103,500 hours is the figure for the DarkLicht range and is lower than the 360,000 hours of the floodlight range; that is a property of this reflector platform. The JEL range is not ATEX or Ex certified.

GLARE FREE LED FLOODLIGHT

DarkLicht M



Shown: DarkLicht M300, 51,300 lm, cut off set to 69°.

CE · IP69K · IK08 · Class II · C5 ISO 9223 · Ta −45 … +50 °C · 90–305 VAC · 24 VDC · ULOR 0 % · DarkSky DS-1 · cut off 63–75° · NSVV

51,300 lumens completely without glare. The heavy cut off floodlight of the range, for mobile light towers, cranes and construction sites that have to deliver full working light next to housing, a carriageway or a protected area. Available in 24 V DC as well as AC.

LUMINOUS FLUX	POWER	EFFICACY
51,300 lm	300 W	171 lm/W
ULOR	**CUT OFF**	**INGRESS**
0 %	63–75°	IP69K

Values apply to the standard version at 4000 K, Ta 25 °C, including reflector losses and driver consumption, with the cut off set to the standard position.

WHY IT IS SPECIFIED

Full working light where a floodlight would be refused. A site told to reduce its lighting normally aims its floodlights down until the work is no longer lit properly. This removes the trade.

24 V DC straight onto a mobile light tower. Light towers run on a generator or a battery. The M is available in 24 V DC, which removes the inverter and makes the tank or the charge last longer.

171 lm per watt with the cut off in place. The energy argument is what normally kills a cut off solution, because a shielded floodlight throws away part of its output and the site then needs more masts.

WHERE IT IS USED

- Mobile and towable light towers
- Tower cranes and mobile cranes
- Construction and infrastructure sites
- Night work on and alongside roads
- Industrial sites bordering housing
- Rail works and possession lighting
- Demolition and remediation sites
- Event and temporary site lighting
- Yards and laydown areas near dwellings
- Sites under an NSVV obtrusive light condition
- Ports and terminals with a residential boundary
- Agricultural and horticultural sites near housing

VERSIONS

	M300	M150
Article base code	DRKM05 AC · DRKM04 DC	DRKM03 AC · DRKM02 DC
Luminous flux	51,300 lm	25,700 lm
Power	300 W	150 W
Efficacy	171 lm/W	171 lm/W
Supply	90–305 VAC or 20–32 VDC	90–305 VAC or 20–32 VDC
Dimensions	287 mm across the bracket, 350 mm over the glass, 207 mm deep	268 × 248 × 180 mm
Weight	5.5 kg	3.6 kg

Both output levels are available in AC and in 24 V DC. For a fixed terrain installation on mains supply the **DarkLicht D** is the simpler and more economical choice; for a high mast the **DarkLicht One, Two and Three**.

Light output and optics

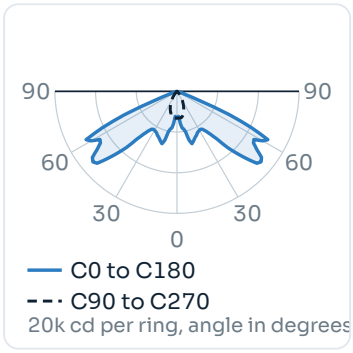
Values apply to the M300 at Ta 25 °C with the cut off in the standard position. The whole DarkLicht line shares one light distribution, so the diagrams below apply to every type at its own luminous flux.

BEAM CHARACTERISTICS

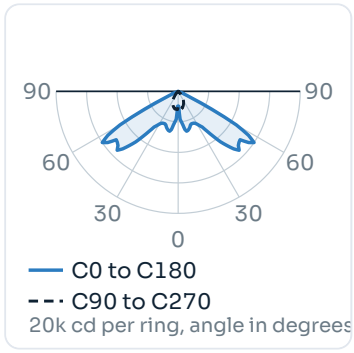
Setting	Distribution	Cut off	Beam angle 50 % of peak	Typical use
63°	Full cut off, asymmetric	63°	–	Tight boundaries, a site directly against housing or a carriageway
66° and 69°	Full cut off, asymmetric	66° and 69°	–	The usual settings for a yard or a car park
72°	Full cut off, asymmetric	72°	123°	Wider cover where the boundary allows it
75°	Full cut off, asymmetric	75°	132°	Maximum reach, sites without a sensitive boundary

The DarkLicht does not use lenses. A patented parabolic reflector throws the light forward and down and cuts it off completely above the set angle, which is set at the factory to the shield position given on the order, between 63 and 75 degrees. The two diagrams show the two shielding positions of the reflector. The whole DarkLicht line shares one light distribution, so one measured set covers every type in the range and a lighting designer works with one photometric behaviour at every mounting height.

LIGHT DISTRIBUTION



Shielding position 1



Shielding position 2

OBTRUSIVE LIGHT

ULOR at 0° tilt	**0 %**
Cut off angle	Factory set, shield position S1 to S5, 63° to 75°
Standards	NSVV guideline · DarkSky DS-1 · EN 12464-2 · EN 12193

A conventional floodlight lights everything in front of it, including the sky, the neighbour and the driver approaching the site. The DarkLicht range is built the other way around: a patented parabolic reflector, not a lens, cuts the light off completely above an angle that is set at the factory between 63 and 75 degrees and specified with the order. Upward light output ratio is 0 %, and the luminaires have been third party tested against the DarkSky DS-1 requirements at colour temperatures between 1700 and 2200 K.

COLOUR AND CONSISTENCY

Colour temperatures	5700 K, 5000 K, 4000 K, 3000 K, 2700 K, amber 2200 K, 1800 K, 1700 K
Tuneable white	4000 K with 2200 K and 1700 K, switchable in operation
DarkSky DS-1	Met at 1700 to 2200 K, third party tested
Colour rendering	Ra > 70 standard, optionally 80 or 90
Colour consistency	MacAdam step 3 or better
LED service life	TM-21 L90B05 > 103,500 h

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.

	DarkLicht M300	DarkLicht M150
PERFORMANCE		
Luminous flux	51,300 lm	25,700 lm
Power consumption	300 W	150 W
Efficacy	171 lm/W	171 lm/W
Upward light output ratio	0 % at 0° tilt	
Cut off angle	63°, 66°, 69°, 72° or 75°, factory set, shield position S1 to S5	
ELECTRICAL AND DRIVER		
Supply voltage range	90–305 VAC, or 20–32 VDC	90–305 VAC, or 20–32 VDC
Current draw AC	2.7 A at 110 V · 1.4 A at 220 V	1.4 A at 110 V · 0.7 A at 220 V
Current draw DC	12.5 A at 24 V	6.3 A at 24 V
Power factor at full load	> 0.95 at 60 to 100 % load on AC	
Surge protection	6 kV line to line, 10 kV line to earth (IEC 61000-4-5)	
Dimming	0–10 V, PWM, DALI-2 on AC. DC on request	
Driver	AC: remote BLD320, fits the DRB-1. DC: drivers on board	AC: remote BLD240, fits the DRB-1. DC: drivers on board
Driver life	≥ 100,000 h at Tc 75 °C on the AC versions	
CONSTRUCTION		
Housing	Cast aluminium, less than 0.08 % copper	
Optic	Patented parabolic reflector, no lens	
Bracket	Fixed bracket, aluminium, less than 0.08 % copper	
Front	Impact resistant glass, 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 > 103,500 h	
Cable and termination	AC: H07BQ-F, 4 cores (2 × 2.5 mm² + 2 × 0.5 mm²), 2.0 m. DC: 2 cores, 0.3 m	AC: H07BQ-F, 4 cores, 2.0 m. DC: 2 cores (2 × 1.5 mm²), 0.3 m
Dimensions	287 mm across the bracket, 350 mm over the glass, 207 mm deep	268 × 248 × 180 mm
Weight	5.5 kg	3.6 kg
Wind load, frontal at 0°	55,500 mm²	35,000 mm²
Wind load, frontal at 20°	81,300 mm²	52,600 mm²
Wind load, side	34,500 mm²	32,200 mm²
Warranty	5 years on the complete luminaire	

The wind load figures for the DarkLicht M are calculated envelope areas from the dimensional drawing, not measured values: the 2023 DarkLicht wind rating report covers the D series, the S60 and the large types but not the M. A drag coefficient of 1.15 is taken from the tested D series of the same housing family. The calculated envelope is conservative for a structural check.

Mechanics, mounting and driver

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

HOUSING AND BRACKET


Maattekening DarkLicht M met maatvoering in millimeters

M300	287 mm across the bracket, 350 mm over the glass, 207 mm deep, 5.5 kg
M150	268 × 248 × 180 mm, 3.6 kg
Bracket	Fixed, aluminium, less than 0.08 % copper
Front	Impact resistant glass, IK08
Optic	Patented parabolic reflector
Mounting	Mast, light tower, crane jib or structure

WIND LOAD, CALCULATED

M300 frontal at 0°	55,500 mm²
M300 frontal at 20°	81,300 mm²
M150 frontal at 0°	35,000 mm²
M150 frontal at 20°	52,600 mm²
Side, both	34,500 and 32,200 mm²
Drag coefficient	Cd 1.15, from the tested D series

MOUNTING AND ACCESSORIES

Fixed bracket	Aluminium, supplied as standard
DRB-1 driver box	For the remote driver on the AC versions
Light tower mounting	24 V DC direct, no inverter
Simpler terrain version	DarkLicht D, mains supply with the driver inside
High mast version	DarkLicht One, Two and Three
Machine version	DarkLicht S and DarkLicht Mini

DRIVER

AC M300	Remote BLD320, 225 × 68 × 38.5 mm, 1,120 g
AC M150	Remote BLD240, 215 × 67.5 × 33.5 mm, 1,100 g
DC versions	Drivers on board, no external box
Case temperature	Tc −40 to +90 °C
Lifetime	≥ 100,000 h at Tc 75 °C
Enclosure	Bare, or in the DRB-1

On a light tower the DC version wins twice. No inverter to fail and no inverter losses, so the same tank of fuel or the same battery charge runs the lighting for longer.

DRB-1 DRIVER BOX


DRB-1 driver box

Use	Optional housing for the remote driver on the AC versions
DRB-1	One driver up to 320 W. 276 × 194 × 86.5 mm, 4.2 kg, IP66 and IP67
Ingress protection	IP66 and IP67
DC versions	Not applicable

Ordering, standards and documents

ORDER CODE

Example **DRKM05-40K**

DarkLicht M300 AC, 4000 K

DRKM05 · DRKM04	M300 at 51,300 lm, AC · DC
DRKM03 · DRKM02	M150 at 25,700 lm, AC · DC
AC · DC	90–305 VAC · 20–32 VDC
57K · 50K · 40K · 30K · 27K	5700 K · 5000 K · 4000 K · 3000 K · 2700 K
22K · 18K · 17K	Amber 2200 K · 1800 K · 1700 K, DarkSky DS-1 range
TW	Tuneable white, 4000 K with 2200 K and 1700 K

The cut off angle is a factory setting: give the shield position S1 to S5 with the order. Bracket, control protocol and cable length are confirmed at order.

COMBINATIONS

Tuneable white with DS-1 colours	Possible
24 V DC on a light tower	Standard
DALI-2 on AC	Standard
Cut off at any setting	Standard
High temperature	Not available
316L housing	Not available

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	IEC 62262 IK08	In-house test
Corrosion	ISO 9223 class C5, industrial and marine	In-house test
Obtrusive light	NSVV guideline · DarkSky DS-1 at 1700 to 2200 K · EN 12464-2 · EN 12193	Third party 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 DarkLicht M

PRODUCT PAGE

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

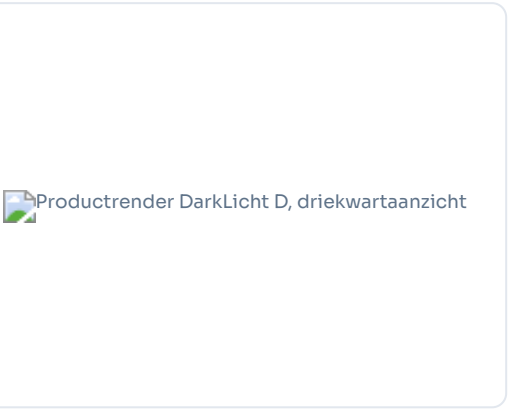
WHERE IT EARNS ITS PLACE

The DarkLicht M earns its place on projects that move and still have neighbours. A light tower, a tower crane or a road works site is somewhere different every few weeks, and every one of those places has somebody living, driving or sleeping next to it. Fixed shields and careful aiming do not survive that. An optic does.

Notes. Values are for the standard configuration. The cut off angle is a factory setting and does not change the luminous flux, only where the light lands. The stated LED service life of L90B05 > 103,500 hours is the figure for the DarkLicht range and is lower than the 360,000 hours of the floodlight range; that is a property of this reflector platform. The JEL range is not ATEX or Ex certified.

GLARE FREE LED FLOODLIGHT

DarkLicht D



Shown: DarkLicht D200, 34,200 lm, cut off set to 69°.

CE | IP67 | IK08 | Class II | C5 ISO 9223 | Ta −45 … +50 °C | 90–305 VAC | internal driver | ULOR 0 % | DarkSky DS-1 | cut off 63–75° | NSVV

The straightforward terrain floodlight of the DarkLicht family. 10,300 to 34,200 lumens on mains supply with the driver inside the housing, full cut off, and all of the light on the site instead of on the neighbours, the road or the sky.

LUMINOUS FLUX	POWER	EFFICACY
34,200 lm	200 W	171 lm/W
ULOR	**CUT OFF**	**DRIVER**
0 %	63–75°	internal

Values apply to the standard version at 4000 K, Ta 25 °C, including reflector losses and driver consumption, with the cut off set to the standard position.

WHY IT IS SPECIFIED

The simple version of the cut off principle. Mains supply, driver inside the housing, fixed bracket, one cable. Every part that is not there is a part that cannot fail on a column eight metres up.

171 lm per watt, and the light lands on the site. A shielded conventional floodlight loses part of its output to the shield, so the site needs more columns to reach the same illuminance.

It makes the permit condition provable. An obtrusive light condition is checked with a calculation and, after a complaint, with a measurement. Measured photometry and a stated ULOR of 0 % turns that from a discussion into a document.

WHERE IT IS USED

- Industrial yards and hardstanding
- Car parks and staff parking
- Loading and unloading zones
- Temporary construction site lighting
- Distribution and logistics yards
- Perimeter and fence line lighting
- Rail yards and depots
- Storage and laydown areas
- Business park roads and forecourts
- Municipal depots and service yards
- Agricultural yards near dwellings
- Sites with an obtrusive light condition

VERSIONS

	D200	D120	D60
Code	DRKD03	DRKD02	DRKD01
Flux	34,200 lm	20,500 lm	10,300 lm
Power	200 W	120 W	60 W
Driver	Internal BLD200	Internal BLD120	Internal BLD120
Dimensions	540 × 270 × 110	440 × 270 × 110	440 × 270 × 110
Weight	8.5 kg	7.1 kg	6.9 kg

The D series is rated IP66 and IP67, not IP68 or IP69K. That is deliberate: these are differently designed products for terrain positions. Where washdown or submersion is a real condition, choose the **DarkLicht M** or, in a marine environment, the **Barracuda**.

Light output and optics

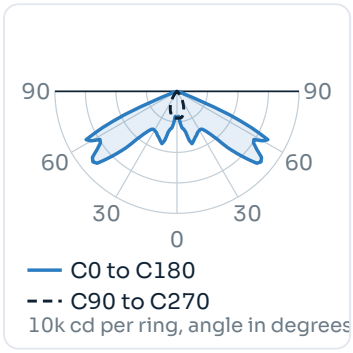
Values apply to the D200 at Ta 25 °C with the cut off in the standard position. The whole DarkLicht line shares one light distribution, so the diagrams below apply to every type at its own luminous flux.

BEAM CHARACTERISTICS

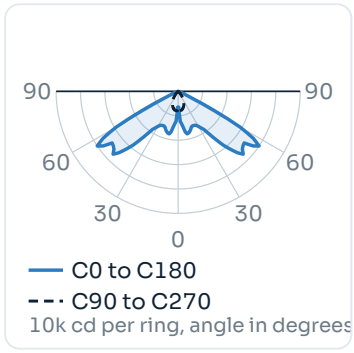
Setting	Distribution	Cut off	Beam angle 50 % of peak	Typical use
63°	Full cut off, asymmetric	63°	–	Tight boundaries, a site directly against housing or a carriageway
66° and 69°	Full cut off, asymmetric	66° and 69°	–	The usual settings for a yard or a car park
72°	Full cut off, asymmetric	72°	123°	Wider cover where the boundary allows it
75°	Full cut off, asymmetric	75°	132°	Maximum reach, sites without a sensitive boundary

The DarkLicht does not use lenses. A patented parabolic reflector throws the light forward and down and cuts it off completely above the set angle, which is set at the factory to the shield position given on the order, between 63 and 75 degrees. The two diagrams show the two shielding positions of the reflector. The whole DarkLicht line shares one light distribution, so one measured set covers every type in the range and a lighting designer works with one photometric behaviour at every mounting height.

LIGHT DISTRIBUTION



Shielding position 1



Shielding position 2

OBTRUSIVE LIGHT

ULOR at 0° tilt	**0 %**
Cut off angle	Factory set, shield position S1 to S5, 63° to 75°
Standards	NSVV guideline · DarkSky DS-1 · EN 12464-2 · EN 12193

A conventional floodlight lights everything in front of it, including the sky, the neighbour and the driver approaching the site. The DarkLicht range is built the other way around: a patented parabolic reflector, not a lens, cuts the light off completely above an angle that is set at the factory between 63 and 75 degrees and specified with the order. Upward light output ratio is 0 %, and the luminaires have been third party tested against the DarkSky DS-1 requirements at colour temperatures between 1700 and 2200 K.

COLOUR AND CONSISTENCY

Colour temperatures	5700 K, 5000 K, 4000 K, 3000 K, 2700 K, amber 2200 K, 1800 K, 1700 K
Tuneable white	4000 K with 2200 K and 1700 K, switchable in operation
DarkSky DS-1	Met at 1700 to 2200 K, third party tested
Colour rendering	Ra > 70 standard, optionally 80 or 90
Colour consistency	MacAdam step 3 or better
LED service life	TM-21 L90B05 > 103,500 h

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.

	D200	D120	D60
PERFORMANCE			
Luminous flux	34,200 lm	20,500 lm	10,300 lm
Power consumption	200 W	120 W	60 W
Efficacy	171 lm/W	171 lm/W	171 lm/W
Upward light output ratio	0 % at 0° tilt		
Cut off angle	63°, 66°, 69°, 72° or 75°, factory set, shield position S1 to S5		
ELECTRICAL AND DRIVER			
Supply voltage range	90–305 VAC, 50/60 Hz		
Current draw	1.7 A at 120 V · 0.9 A at 220 V	1.0 A at 120 V · 0.55 A at 220 V	0.5 A at 120 V · 0.27 A at 220 V
Power factor at full load	> 0.9 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	Internal BLD200	Internal BLD120	Internal BLD120
CONSTRUCTION			
Housing	Cast aluminium, less than 0.08 % copper		
Optic	Patented parabolic reflector, no lens		
Bracket	High tensile 316L stainless steel, unlimited rotation from -20° to +20°		
Front	Impact resistant glass, IK08		
Protection class	Class II		
Ingress protection	IP66 and IP67		
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 > 103,500 h		
Cable and termination	Optional, H07BQ-F		
Dimensions	540 × 270 × 110 mm	440 × 270 × 110 mm	440 × 270 × 110 mm
Weight	8.5 kg	7.1 kg	6.9 kg
Wind load, frontal at 0°	18,750 mm²	18,750 mm²	18,750 mm²
Wind load, frontal at 20°	49,500 mm²	44,500 mm²	44,500 mm²
Wind load, side	35,500 to 41,500 mm²	26,800 to 33,000 mm²	26,800 to 33,000 mm²
Drag coefficient	Cd 1.15		
Warranty	5 years, extendable to 10 years under a maintenance agreement		

Wind load data is from the DarkLicht wind rating report. The D, WP, One, Two and Three can be extended to ten years on the complete luminaire under a maintenance agreement with JEL or a party appointed by JEL; the seal on these types needs maintenance, so an unconditional ten years is not offered.

Mechanics, mounting and driver

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

HOUSING AND BRACKET



D200	540 × 270 × 110 mm, 8.5 kg
D120 and D60	440 × 270 × 110 mm, 7.1 and 6.9 kg
Bracket	High tensile 316L, unlimited from -20° to +20°
Front	Impact resistant glass, IK08
Optic	Patented parabolic reflector
Driver	Inside the housing, no external box

WIND LOAD, TESTED

Frontal at 0°	18,750 mm², all three
Frontal at 10°	30,500 to 31,500 mm²
Frontal at 20°	44,500 to 49,500 mm²
Side, D200	35,500 to 41,500 mm²
Side, D120 and D60	26,800 to 33,000 mm²
Drag coefficient	Cd 1.15

MOUNTING AND ACCESSORIES

Standard bracket	High tensile 316L, supplied as standard
Cable	Optional, H07BQ-F, length on request
Ten year warranty	Under a maintenance agreement with JEL or an appointed party
Mobile version	DarkLicht M, in AC and 24 V DC, IP69K
High mast version	DarkLicht One, Two and Three
Wall mounted version	DarkLicht WP Wallpack

INTERNAL DRIVER

D200	BLD200, inside the housing
D120 and D60	BLD120, inside the housing
External box	None
Case temperature	Tc −40 to +90 °C
Lifetime	≥ 100,000 h at Tc 75 °C
Control	0–10 V, PWM, DALI-2, or over NFC

Everything in one housing. On a terrain column there is nowhere to put a driver box and nobody to maintain it. The D carries its driver inside, so the installation is one luminaire and one cable.

MOUNTING

Bracket	316L, adjustable from -20° to +20°
Column	Top mount or side mount
Cable	Optional, or terminated in the column base
Setting the cut off	On the column, before hoisting

Ordering, standards and documents

ORDER CODE

Example **DRKD03-40K**

DarkLicht D200, 4000 K

DRKD03 · DRKD02 · DRKD01	D200 · D120 · D60
57K · 50K · 40K · 30K · 27K	5700 K · 5000 K · 4000 K · 3000 K · 2700 K
22K · 18K · 17K	Amber 2200 K · 1800 K · 1700 K, DarkSky DS-1 range
TW	Tuneable white, 4000 K with 2200 K and 1700 K
Cut off	Shield position S1 to S5, specified with the order

The cut off angle is a factory setting: give the shield position S1 to S5 with the order. Cable and control protocol are confirmed at order.

COMBINATIONS

Tuneable white with DS-1 colours	Possible
DALI-2 and NFC	Standard
Ten year warranty	Under a maintenance agreement
IP68 or IP69K	Not on the D series
DC supply	Not available, see the DarkLicht M
High temperature	Not available

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	In-house test
Impact	IEC 62262 IK08	In-house test
Corrosion	ISO 9223 class C5, industrial and marine	In-house test
Obtrusive light	NSVV guideline · DarkSky DS-1 at 1700 to 2200 K · EN 12464-2 · EN 12193	Third party 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.

WHERE IT EARNS ITS PLACE

The DarkLicht D earns its place on ordinary sites with one demanding condition. A yard, a car park or an access road is not a marine environment and does not need to survive submersion, but it increasingly does have a line in the permit about upward and spill light. The D answers the requirement that is actually there and does not charge for the ones that are not.

QR-code naar de productpagina van de DarkLicht D

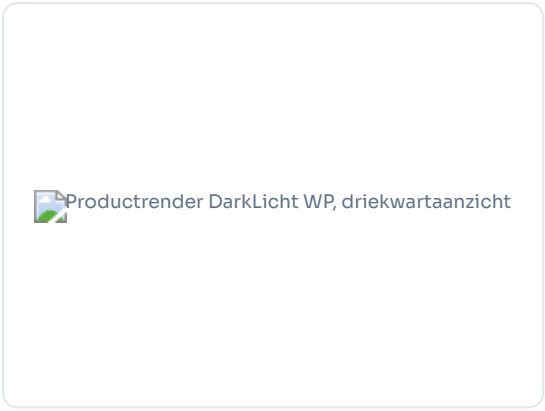
PRODUCT PAGE

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

Notes. Values are for the standard configuration. The cut off angle is a factory setting and does not change the luminous flux, only where the light lands. The stated LED service life of L90B05 > 103,500 hours is the figure for the DarkLicht range and is lower than the 360,000 hours of the floodlight range; that is a property of this reflector platform. The JEL range is not ATEX or Ex certified.

GLARE FREE LED WALL PACK

DarkLicht WP



Shown: DarkLicht WP Wallpack 100, 16,000 lm, cut off set to 69°.

CE | IP69K | IK08 | Class II | C5 ISO 9223 | Ta −45 … +50 °C | 90–305 VAC | internal driver | DALI-2 · sensor ready | ULOR 0 % | DarkSky DS-1 | 10–100 W settable

The wall pack is where obtrusive light usually starts. The DarkLicht WP mounts on the building and lights the ground in front of it, with a deep parabolic reflector that keeps the light off the facade, out of the windows beside it and out of the sky. Driver and control inside, power settable from 10 W.

LUMINOUS FLUX	POWER	EFFICACY
16,000 lm	10–100 W	160 lm/W

ULOR	INGRESS	DRIVER
0 %	IP69K	internal

Values apply to the standard version at 4000 K, Ta 25 °C, including reflector losses and driver consumption, with the cut off set to the standard position.

WHY IT IS SPECIFIED

The most complained about luminaire type, solved in the optic. A conventional wall pack throws light up the facade, into the windows above and across the boundary. The reflector removes the cause.

Power settable from 10 W, with the control inside. The 100 W version is settable from 10 to 100 W and the 60 W version from 10 to 60 W, over DALI-2, 0-10 V, PWM or NFC, with sensor integration available. One article covers an entrance, a dock and a perimeter route.

No mast, no foundation, no trench. Where a building edge is available, wall mounting removes the most expensive part of an exterior lighting project.

WHERE IT IS USED

- Building perimeters and service routes
- Loading docks and goods entrances
- Business park and commercial facades
- Fire escape routes and muster points
- External stairs and emergency exit doors
- Yard walls and boundary structures
- Under canopy and overhang positions
- Substation and plant room exteriors
- Waste and recycling compounds
- Camera support lighting on buildings
- Retrofit of conventional wall packs

VERSIONS

	Wallpack 100	Wallpack 60
Article base code	DRKW01	DRKW02
Luminous flux	16,000 lm	9,600 lm
Power	100 W, settable from 10 W	60 W, settable from 10 W
Efficacy	160 lm/W	160 lm/W
Supply	90–305 VAC	90–305 VAC
Driver	Internal BLD120	Internal BLD120
Dimensions	345 × 181 × 96 mm	345 × 181 × 96 mm
Weight	4.0 kg	4.0 kg

Both versions share one housing and one wall plate, so the output level is a setting rather than a different fitting on the wall.

Light output and optics

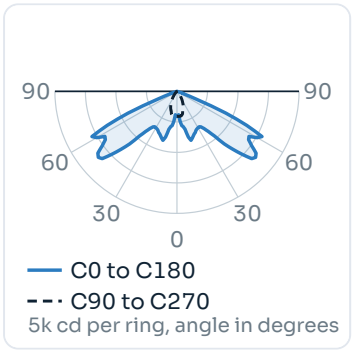
Values apply to the Wallpack 100 at Ta 25 °C with the cut off in the standard position. The whole DarkLicht line shares one light distribution, so the diagrams below apply to every type at its own luminous flux.

BEAM CHARACTERISTICS

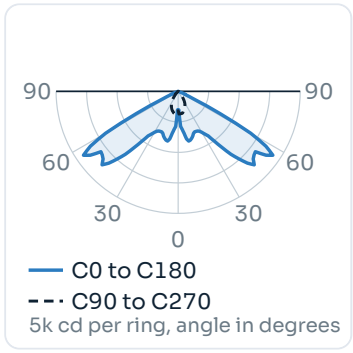
Setting	Distribution	Cut off	Beam angle 50 % of peak	Typical use
63°	Full cut off, asymmetric	63°	–	Tight boundaries, a site directly against housing or a carriageway
66° and 69°	Full cut off, asymmetric	66° and 69°	–	The usual settings for a yard or a car park
72°	Full cut off, asymmetric	72°	123°	Wider cover where the boundary allows it
75°	Full cut off, asymmetric	75°	132°	Maximum reach, sites without a sensitive boundary

The DarkLicht does not use lenses. A patented parabolic reflector throws the light forward and down and cuts it off completely above the set angle, which is set at the factory to the shield position given on the order, between 63 and 75 degrees. The two diagrams show the two shielding positions of the reflector. The whole DarkLicht line shares one light distribution, so one measured set covers every type in the range and a lighting designer works with one photometric behaviour at every mounting height.

LIGHT DISTRIBUTION



Shielding position 1



Shielding position 2

OBTRUSIVE LIGHT

ULOR at 0° tilt	**0 %**
Cut off angle	Factory set, shield position S1 to S5, 63° to 75°
Standards	NSVV guideline · DarkSky DS-1 · EN 12464-2 · EN 12193

A conventional floodlight lights everything in front of it, including the sky, the neighbour and the driver approaching the site. The DarkLicht range is built the other way around: a patented parabolic reflector, not a lens, cuts the light off completely above an angle that is set at the factory between 63 and 75 degrees and specified with the order. Upward light output ratio is 0 %, and the luminaires have been third party tested against the DarkSky DS-1 requirements at colour temperatures between 1700 and 2200 K.

COLOUR AND CONSISTENCY

Colour temperatures	5700 K, 5000 K, 4000 K, 3000 K, 2700 K, amber 2200 K, 1800 K, 1700 K
Tuneable white	4000 K with 2200 K and 1700 K, switchable in operation
DarkSky DS-1	Met at 1700 to 2200 K, third party tested
Colour rendering	Ra > 70 standard, optionally 80 or 90
Colour consistency	MacAdam step 3 or better
LED service life	TM-21 L90B05 > 103,500 h

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.

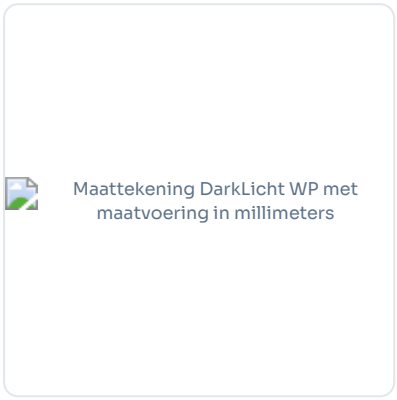
	Wallpack 100	Wallpack 60
PERFORMANCE		
Article base code	DRKW01	DRKW02
Luminous flux	16,000 lm	9,600 lm
Power consumption	100 W, settable from 10 W	60 W, settable from 10 W
Efficacy	160 lm/W	160 lm/W
Upward light output ratio	0 % at 0° tilt	
Cut off angle	63°, 66°, 69°, 72° or 75°, factory set, shield position S1 to S5	
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	0.5 A at 120 V · 0.27 to 0.22 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 and control	0–10 V, PWM, DALI-2, or over NFC. Sensor integration available	
Power setting	10 to 100 W	10 to 60 W
Driver	Internal BLD120, no external box	
CONSTRUCTION		
Housing	Cast aluminium, less than 0.08 % copper	
Optic	Deep patented parabolic reflector, no lens	
Mounting	Facade mounting plate, aluminium, less than 0.08 % copper. Plate 344 mm wide, one Ø28 cable hole, six Ø5.2 holes on 315 mm and six on 200 mm	
Front	Impact resistant glass, 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 > 103,500 h	
Cable and termination	H07BQ-F, 4 cores (2 × 1.5 mm² + 2 × 0.5 mm²), 0.3 m	
Dimensions	345 × 181 × 96 mm	
Weight	4.0 kg	
Wind load	Not applicable to a wall mounted luminaire	
Warranty	5 years, extendable to 10 years under a maintenance agreement	

The power setting is a driver setting made over DALI-2 or NFC and can be changed after installation, which is what makes one article cover a dock door and a quiet perimeter route on the same building.

Mechanics, mounting and driver

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

HOUSING AND WALL PLATE



Dimensions	345 × 181 × 96 mm
Weight	4.0 kg
Mounting	Facade plate, aluminium
Front	Impact resistant glass, IK08
Optic	Deep patented parabolic reflector
Cable	0.3 m tail through the plate

CONTROL AND SETTING

Protocols	DALI-2, 0–10 V, PWM, NFC
Power setting	10 to 100 W, or 10 to 60 W
Sensor	Integration available
Set when	On site, and changeable afterwards
Cut off	63° to 75°, set mechanically

MOUNTING AND ACCESSORIES

Facade mounting plate	Aluminium, supplied as standard
Sensor	Integration available, specified at order
Ten year warranty	Under a maintenance agreement with JEL or an appointed party
Column version	DarkLicht D, for the yard in front of the building
Canopy version	Manta canopy, for a roof or a canopy
Machine version	DarkLicht S and DarkLicht Mini

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
Control	0–10 V, PWM, DALI-2, or over NFC
Sensor	Integration available

One fitting, one cable, one setting. Driver and control inside the housing means the installation on a facade is a plate, a tail and a connection, with the power level set afterwards over NFC.

MOUNTING HEIGHT

Typical	Building perimeter, dock and escape route lighting
Cut off	Set so the light stops at the boundary, not at the wall
Above windows	The reflector keeps the facade above the luminaire dark
Retrofit	Replaces a conventional wall pack on the existing position

Ordering, standards and documents

ORDER CODE

Example **DRKW01-40K**

DarkLicht WP Wallpack 100, 4000 K

DRKW01 · DRKW02	Wallpack 100 at 16,000 lm · Wallpack 60 at 9,600 lm
57K · 50K · 40K · 30K · 27K	5700 K · 5000 K · 4000 K · 3000 K · 2700 K
22K · 18K · 17K	Amber 2200 K · 1800 K · 1700 K, DarkSky DS-1 range
TW	Tuneable white, 4000 K with 2200 K and 1700 K
Sensor	Specified at order, not part of the code

The cut off angle is a factory setting: give the shield position S1 to S5 with the order. The power level and sensor integration are specified at order as well.

COMBINATIONS

Tuneable white with DS-1 colours	Possible
Sensor with DALI-2	Possible
Power setting after installation	Over NFC
Ten year warranty	Under a maintenance agreement
DC supply	Not available
High temperature	Not available

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	IEC 62262 IK08	In-house test
Corrosion	ISO 9223 class C5, industrial and marine	In-house test
Obtrusive light	NSVV guideline · DarkSky DS-1 at 1700 to 2200 K · EN 12464-2 · EN 12193	Third party 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 DarkLicht WP

PRODUCT PAGE

IES files and revision history, DXF and STEP on request, and project references.
jelproducts.nl/en/products/darklicht-wp-wallpack

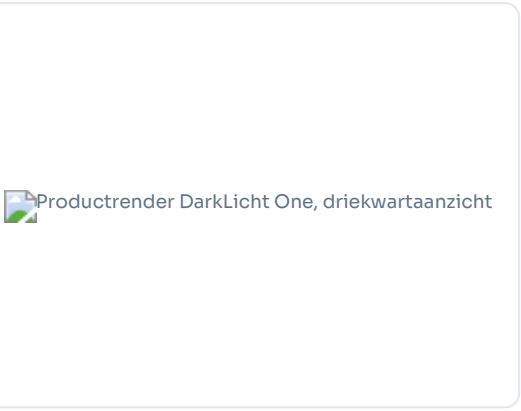
WHERE IT EARNS ITS PLACE

The DarkLicht WP earns its place along the building line. Perimeter routes, dock doors and escape routes are lit every night, they are the closest lighting on the site to the people who live next to it, and they are almost always the part of the project with the smallest budget. The WP is what lets that part be done properly without a mast, a foundation and a trench.

Notes. Values are for the standard configuration. The cut off angle is a factory setting and does not change the luminous flux, only where the light lands. The stated LED service life of L90B05 > 103,500 hours is the figure for the DarkLicht range and is lower than the 360,000 hours of the floodlight range; that is a property of this reflector platform. The JEL range is not ATEX or Ex certified.

GLARE FREE LED AREA LIGHT

DarkLicht One



Shown: DarkLicht One, 102,600 lm, cut off set to 69°.

CE | IP67 | IK07 | Class I | C5 ISO 9223
Ta −45 … +50 °C | 90–305 VAC at 320 W
180–528 VAC at 400 and 600 W | up to 102,600 lm
ULOR 0 % | DarkSky DS-1 | EN 12193 | NSVV

Three power levels, 51,200 to 102,600 lumens out of a single luminaire, with 0 % upward light. The high mast decides whether a site meets its obtrusive light condition.

LUMINOUS FLUX	POWER	EFFICACY
102,600 lm	600 W	171 lm/W

ULOR	CUT OFF	IMPACT
0 %	63–75°	IK07

Values apply to the standard version at 4000 K, Ta 25 °C, including reflector losses and driver consumption, with the cut off set to the standard position.

WHY IT IS SPECIFIED

The high mast is where obtrusive light is created. It is the highest, brightest and most visible source on a site and it is seen from the greatest distance. Solving light control at the top of the mast solves most of the problem in one step.

Full output from one position. 51,200 to 307,800 lumens on the same reflector technology, so a project can dimension per mast without changing the light distribution or the calculation.

Cut off without adding masts. On a high mast project the mast, the foundation, the trench and the cabling cost more than the luminaires. At 171 lumens per watt with the cut off in place, no extra mast is needed.

WHERE IT IS USED

- Container and intermodal terminal high masts
- Port and quay areas with a residential boundary
- Tower cranes, on the tower crane frame
- Sports fields and training grounds
- Logistics and distribution high mast lighting
- Vehicle storage and compound lighting
- Large car parks and park and ride sites
- Rail yards and marshalling areas
- Bulk storage and laydown yards
- Waste and recycling facilities
- Large agricultural and horticultural sites

VERSIONS

	DarkLicht One
Flux	51,200 to 102,600 lm
Power	320 · 400 · 600 W
Size	365 × 550 × 160
Weight	14.0 to 15.0 kg
Driver	Internal to 400 W

From 600 W the driver goes up the mast with the luminaire. Its mass and wind area must be counted, see the wind load table.

Light output and optics

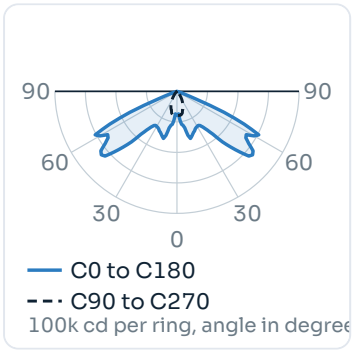
Values apply to the Three at Ta 25 °C with the cut off in the standard position. The whole DarkLicht line shares one light distribution, so the diagrams below apply to every type at its own luminous flux.

BEAM CHARACTERISTICS

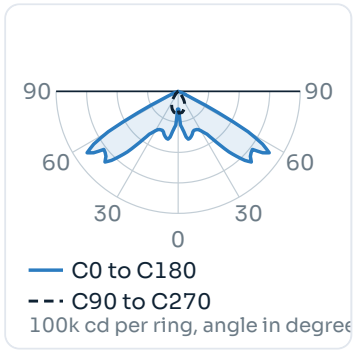
Setting	Distribution	Cut off	Beam angle 50 % of peak	Typical use
63°	Full cut off, asymmetric	63°	–	Tight boundaries, a site directly against housing or a carriageway
66° and 69°	Full cut off, asymmetric	66° and 69°	–	The usual settings for a yard or a car park
72°	Full cut off, asymmetric	72°	123°	Wider cover where the boundary allows it
75°	Full cut off, asymmetric	75°	132°	Maximum reach, sites without a sensitive boundary

The DarkLicht does not use lenses. A patented parabolic reflector throws the light forward and down and cuts it off completely above the set angle, which is set at the factory to the shield position given on the order, between 63 and 75 degrees. The two diagrams show the two shielding positions of the reflector. The whole DarkLicht line shares one light distribution, so one measured set covers every type in the range and a lighting designer works with one photometric behaviour at every mounting height.

LIGHT DISTRIBUTION



Shielding position 1



Shielding position 2

OBTRUSIVE LIGHT

ULOR at 0° tilt	**0 %**
Cut off angle	Factory set, shield position S1 to S5, 63° to 75°
Standards	NSVV guideline · DarkSky DS-1 · EN 12464-2 · EN 12193

A conventional floodlight lights everything in front of it, including the sky, the neighbour and the driver approaching the site. The DarkLicht range is built the other way around: a patented parabolic reflector, not a lens, cuts the light off completely above an angle that is set at the factory between 63 and 75 degrees and specified with the order. Upward light output ratio is 0 %, and the luminaires have been third party tested against the DarkSky DS-1 requirements at colour temperatures between 1700 and 2200 K.

COLOUR AND CONSISTENCY

Colour temperatures	5700 K, 5000 K, 4000 K, 3000 K, 2700 K, amber 2200 K, 1800 K, 1700 K
Tuneable white	4000 K with 2200 K and 1700 K, switchable in operation
DarkSky DS-1	Met at 1700 to 2200 K, third party tested
Colour rendering	Ra > 70 standard, optionally 80 or 90
Colour consistency	MacAdam step 3 or better
LED service life	TM-21 L90B05 > 103,500 h

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.

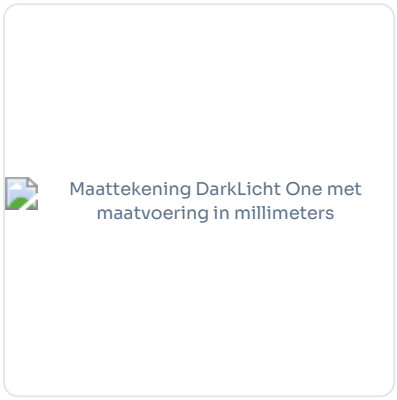
	DarkLicht One
PERFORMANCE	
Luminous flux	51,200 lm at 320 W · 68,400 lm at 400 W · 102,600 lm at 600 W
Efficacy	160 lm/W at 320 W, 171 lm/W above
Upward light output ratio	0 % at 0° tilt
Cut off angle	63°, 66°, 69°, 72° or 75°, factory set, shield position S1 to S5
ELECTRICAL AND DRIVER	
Supply voltage range	90–305 VAC at 320 W, internal BLD320. 180–528 VAC or 250–740 VDC at 400 and 600 W, 50/60 Hz
Current draw	1.5 to 2.7 A at 220 V · 0.8 to 1.6 A at 380 V
Power factor at full load	> 0.9 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	Internal BLD320 at 320 W · internal TLD400 at 400 W · external TLD600 at 600 W
Driver life	≥ 100,000 h at Tc 75 °C, MTBF ≥ 320,000 h
CONSTRUCTION	
Housing	Cast aluminium, less than 0.08 % copper
Optic	Patented parabolic reflector, no lens
Bracket	High tensile 316L stainless steel, unlimited rotation from -20° to +20°
Front	Impact resistant glass. The luminaire is classified IK07
Protection class	Class I
Ingress protection	IP66 and IP67
Impact resistance	IK07 (IEC 62262). The construction is in practice IK08 but there is no test report for it
Corrosion class	C5 industrial and marine (ISO 9223)
DURABILITY, DIMENSIONS AND WIND LOAD	
Ambient temperature	−45 to +50 °C
LED service life	TM-21 L90B05 > 103,500 h
Dimensions	365 × 550 × 160 mm
Weight, luminaire	14.0 to 15.0 kg
Weight, with external driver	23.0 kg at 600 W
Wind load, frontal at 0°	75,400 mm²
Wind load, frontal at 20°	88,400 mm²
Wind load, side, luminaire	32,775 mm²
Wind load, side, with driver	73,275 mm²
Drag coefficient	Cd 1.22 luminaire, Cd 1.23 with driver
Warranty	5 years, extendable to 10 years under a maintenance agreement

Wind load data is from the DarkLicht wind rating report. The rows with the external driver are the ones that matter for a mast calculation: at 600 W and above the driver goes up the mast, which adds about nine kilograms and more than doubles the side area. A calculation that uses only the luminaire row is not conservative.

Mechanics, mounting and driver

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

HOUSING AND BRACKET



Dimensions	365 × 550 × 160 mm, 14.0 to 15.0 kg
Bracket	High tensile 316L, unlimited from -20° to +20°
Front	Impact resistant glass, luminaire classified IK07
Optic	Patented parabolic reflector

WIND LOAD FOR THE MAST

Frontal at 0°	75,400 mm²
Frontal at 20°	88,400 mm²
Side, luminaire only	32,775 mm²
Side, with external driver	73,275 mm², at 600 W
Cd	1.22 luminaire, 1.23 with driver
Count the driver	At 600 W it goes up the mast

MOUNTING AND ACCESSORIES

Standard bracket	High tensile 316L, supplied as standard
Tower crane frame	Available. Separate datasheet
DRB-2 driver box	For the external drivers at 600 W and above
High masts	JEL supplies masts to 50 m with engineering and foundations. Separate datasheet
Ten year warranty	Under a maintenance agreement with JEL or an appointed party
Smaller version	DarkLicht D and DarkLicht M

DRIVER

320 W	Internal BLD320, 90–305 VAC only
400 W	Internal TLD400
600 W	External TLD600
Enclosure	DRB-2 or a tray, up the mast with the luminaire

From 600 W the driver goes up the mast. That is nine kilograms and more than twice the side area, and it is the single most common omission in a high mast calculation. Both rows are in the wind load table for that reason.

DRB-2 DRIVER BOX



Use	Housing for the external drivers
DRB-2	Systems up to 2,000 W. 441 × 290 × 145 mm, 10.4 kg, IP66 and IP67
Ingress protection	IP66 and IP67
Alternative	Open tray, where the mast head allows it

Ordering, standards and documents

ORDER CODE

Example **DL1-40K-600W**

DarkLicht One, 4000 K, 600 W

DARK01 · DARK02 · DARK03	DarkLicht One at 320, 400 and 600 W
320W · 400W · 600W	The three power levels of the One. 320 W is 90–305 VAC only
57K · 50K · 40K · 30K · 27K · 22K · 18K · 17K	Colour temperature, including the DarkSky DS-1 range
TW	Tuneable white, 4000 K with 2200 K and 1700 K

The cut off angle is a factory setting: give the shield position S1 to S5 with the order. Driver placement, control protocol and the tower crane frame are confirmed at order.

COMBINATIONS

Tuneable white with DS-1 colours	Possible
Tower crane frame	Available on this type
DALI-2 and NFC	Standard
Ten year warranty	Under a maintenance agreement
IP68 or IP69K	Not on these types
DC supply	Not available

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	TÜV on the 600 W AC, third party test on 320 and 400 W
Ingress	IEC 60529 and ISO 20653. IP66, IP67	In-house test
Impact	IEC 62262 IK07	In-house test
Corrosion	ISO 9223 class C5, industrial and marine	In-house test
Obtrusive light	NSVV guideline · DarkSky DS-1 at 1700 to 2200 K · EN 12464-2 · EN 12193	Third party test
Photometry	IES LM-79, IES files per optic	In-house test
Substances	RoHS, REACH	Self-declaration

BEFORE YOU ORDER

A DIALux calculation and a mast schedule from our engineers, on your site drawing.

Masts to 50 m with engineering and foundations, from one supplier.

Five years warranty, extendable to ten under a maintenance agreement.

WHERE IT EARNS ITS PLACE

The large DarkLicht types earn their place on projects that would otherwise not be permitted. The high mast decides whether a site meets its obtrusive light condition, and it is also the position where compensating with extra masts is most expensive. Solving the light control in the reflector at the top of the mast is the cheapest place in the entire project to solve it.

QR-code naar de productpagina van de DarkLicht One, Two and

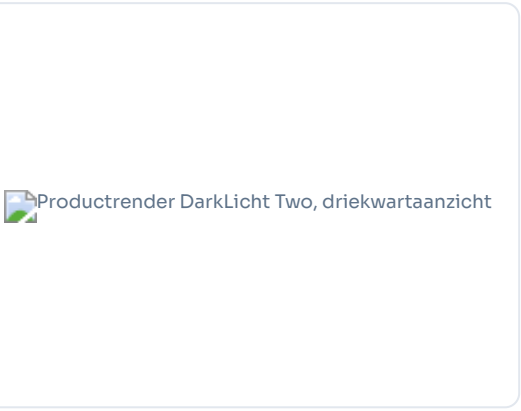
PRODUCT PAGE

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

Notes. Values are for the standard configuration. The cut off angle is a factory setting and does not change the luminous flux, only where the light lands. The stated LED service life of L90B05 > 103,500 hours is the figure for the DarkLicht range and is lower than the 360,000 hours of the floodlight range; that is a property of this reflector platform. The JEL range is not ATEX or Ex certified.

GLARE FREE LED AREA LIGHT

DarkLicht Two



Shown: DarkLicht Two, 205,200 lm, cut off set to 69°.

CE | IP67 | IK07 | Class I | C5 ISO 9223 | Ta −45 … +50 °C | 180–528 VAC | up to 205,200 lm | ULOR 0 % | DarkSky DS-1 | EN 12193 | NSVV

Two power levels, 136,800 to 205,200 lumens out of a single luminaire, with 0 % upward light. The high mast decides whether a site meets its obtrusive light condition.

LUMINOUS FLUX	POWER	EFFICACY
205,200 lm	1,200 W	171 lm/W

ULOR	CUT OFF	IMPACT
0 %	63–75°	IK07

Values apply to the standard version at 4000 K, Ta 25 °C, including reflector losses and driver consumption, with the cut off set to the standard position.

WHY IT IS SPECIFIED

The high mast is where obtrusive light is created. It is the highest, brightest and most visible source on a site and it is seen from the greatest distance. Solving light control at the top of the mast solves most of the problem in one step.

Full output from one position. 51,200 to 307,800 lumens on the same reflector technology, so a project can dimension per mast without changing the light distribution or the calculation.

Cut off without adding masts. On a high mast project the mast, the foundation, the trench and the cabling cost more than the luminaires. At 171 lumens per watt with the cut off in place, no extra mast is needed.

WHERE IT IS USED

- Container and intermodal terminal high masts
- Port and quay areas with a residential boundary
- Tower cranes, on the tower crane frame
- Sports fields and training grounds
- Logistics and distribution high mast lighting
- Vehicle storage and compound lighting
- Large car parks and park and ride sites
- Rail yards and marshalling areas
- Bulk storage and laydown yards
- Waste and recycling facilities
- Large agricultural and horticultural sites

VERSIONS

	DarkLicht Two
Flux	136,800 to 205,200 lm
Power	800 · 1,200 W
Size	635 × 550 × 160
Weight	24.8 kg
Driver	External

From 600 W the driver goes up the mast with the luminaire. Its mass and wind area must be counted, see the wind load table.

Light output and optics

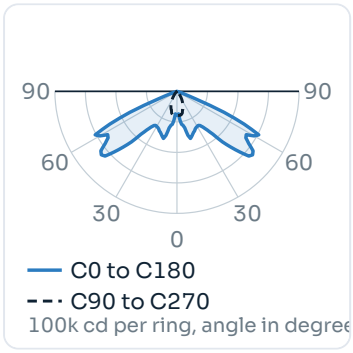
Values apply to the Three at Ta 25 °C with the cut off in the standard position. The whole DarkLicht line shares one light distribution, so the diagrams below apply to every type at its own luminous flux.

BEAM CHARACTERISTICS

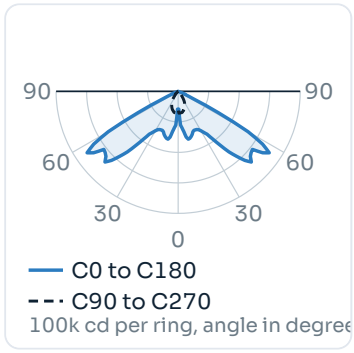
Setting	Distribution	Cut off	Beam angle 50 % of peak	Typical use
63°	Full cut off, asymmetric	63°	–	Tight boundaries, a site directly against housing or a carriageway
66° and 69°	Full cut off, asymmetric	66° and 69°	–	The usual settings for a yard or a car park
72°	Full cut off, asymmetric	72°	123°	Wider cover where the boundary allows it
75°	Full cut off, asymmetric	75°	132°	Maximum reach, sites without a sensitive boundary

The DarkLicht does not use lenses. A patented parabolic reflector throws the light forward and down and cuts it off completely above the set angle, which is set at the factory to the shield position given on the order, between 63 and 75 degrees. The two diagrams show the two shielding positions of the reflector. The whole DarkLicht line shares one light distribution, so one measured set covers every type in the range and a lighting designer works with one photometric behaviour at every mounting height.

LIGHT DISTRIBUTION



Shielding position 1



Shielding position 2

OBTRUSIVE LIGHT

ULOR at 0° tilt	**0 %**
Cut off angle	Factory set, shield position S1 to S5, 63° to 75°
Standards	NSVV guideline · DarkSky DS-1 · EN 12464-2 · EN 12193

A conventional floodlight lights everything in front of it, including the sky, the neighbour and the driver approaching the site. The DarkLicht range is built the other way around: a patented parabolic reflector, not a lens, cuts the light off completely above an angle that is set at the factory between 63 and 75 degrees and specified with the order. Upward light output ratio is 0 %, and the luminaires have been third party tested against the DarkSky DS-1 requirements at colour temperatures between 1700 and 2200 K.

COLOUR AND CONSISTENCY

Colour temperatures	5700 K, 5000 K, 4000 K, 3000 K, 2700 K, amber 2200 K, 1800 K, 1700 K
Tuneable white	4000 K with 2200 K and 1700 K, switchable in operation
DarkSky DS-1	Met at 1700 to 2200 K, third party tested
Colour rendering	Ra > 70 standard, optionally 80 or 90
Colour consistency	MacAdam step 3 or better
LED service life	TM-21 L90B05 > 103,500 h

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.

	DarkLicht Two
PERFORMANCE	
Luminous flux	136,800 lm at 800 W · 205,200 lm at 1,200 W
Efficacy	171 lm/W
Upward light output ratio	0 % at 0° tilt
Cut off angle	63°, 66°, 69°, 72° or 75°, factory set, shield position S1 to S5
ELECTRICAL AND DRIVER	
Supply voltage range	180–528 VAC or 250–740 VDC, 50/60 Hz
Current draw	3.7 to 5.5 A at 220 V · 2.2 to 3.2 A at 380 V
Power factor at full load	> 0.9 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	External TLD800, or 2 × TLD600 in the DRB-2 or on a tray
Driver life	≥ 100,000 h at Tc 75 °C, MTBF ≥ 320,000 h
CONSTRUCTION	
Housing	Cast aluminium, less than 0.08 % copper
Optic	Patented parabolic reflector, no lens
Bracket	High tensile 316L stainless steel, unlimited rotation from -20° to +20°
Front	Impact resistant glass. The luminaire is classified IK07
Protection class	Class I
Ingress protection	IP66 and IP67
Impact resistance	IK07 (IEC 62262). The construction is in practice IK08 but there is no test report for it
Corrosion class	C5 industrial and marine (ISO 9223)
DURABILITY, DIMENSIONS AND WIND LOAD	
Ambient temperature	−45 to +50 °C
LED service life	TM-21 L90B05 > 103,500 h
Dimensions	635 × 550 × 160 mm
Weight, luminaire	24.8 kg
Weight, with external driver	36.6 kg at 1,200 W
Wind load, frontal at 0°	75,400 mm²
Wind load, frontal at 20°	135,200 mm²
Wind load, side, luminaire	63,825 mm²
Wind load, side, with driver	104,325 mm²
Drag coefficient	Cd 1.22 luminaire, Cd 1.23 with driver
Warranty	5 years, extendable to 10 years under a maintenance agreement

Wind load data is from the DarkLicht wind rating report. The rows with the external driver are the ones that matter for a mast calculation: at 600 W and above the driver goes up the mast, which adds about nine kilograms and more than doubles the side area. A calculation that uses only the luminaire row is not conservative.

Mechanics, mounting and driver

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

HOUSING AND BRACKET



Dimensions	635 × 550 × 160 mm, 24.8 kg
Bracket	High tensile 316L, unlimited from -20° to +20°
Front	Impact resistant glass, luminaire classified IK07
Optic	Patented parabolic reflector

WIND LOAD FOR THE MAST

Frontal at 0°	75,400 mm²
Frontal at 20°	135,200 mm²
Side, luminaire only	63,825 mm²
Side, with external driver	104,325 mm²
Cd	1.22 luminaire, 1.23 with driver
Count the driver	The driver always goes up the mast

MOUNTING AND ACCESSORIES

Standard bracket	High tensile 316L, supplied as standard
Tower crane frame	Available on the DarkLicht One. Separate datasheet
DRB-2 driver box	For the external drivers at 600 W and above
High masts	JEL supplies masts to 50 m with engineering and foundations. Separate datasheet
Ten year warranty	Under a maintenance agreement with JEL or an appointed party
Smaller version	DarkLicht D and DarkLicht M

DRIVER

800 W	External TLD800
1,200 W	External, 2 × TLD600
Enclosure	DRB-2 or a tray, up the mast with the luminaire

From 600 W the driver goes up the mast. That is nine kilograms and more than twice the side area, and it is the single most common omission in a high mast calculation. Both rows are in the wind load table for that reason.

DRB-2 DRIVER BOX



Use	Housing for the external drivers
DRB-2	Systems up to 2,000 W. 441 × 290 × 145 mm, 10.4 kg, IP66 and IP67
Ingress protection	IP66 and IP67
Alternative	Open tray, where the mast head allows it

Ordering, standards and documents

ORDER CODE

Example **DL2-40K-1200W**

DarkLicht Two, 4000 K, 1,200 W

DARK04 · DARK05	DarkLicht Two at 800 and 1,200 W
800W · 1200W	The two power levels of the Two
57K · 50K · 40K · 30K · 27K · 22K · 18K · 17K	Colour temperature, including the DarkSky DS-1 range
TW	Tuneable white, 4000 K with 2200 K and 1700 K

The cut off angle is a factory setting: give the shield position S1 to S5 with the order. Driver placement and control protocol are confirmed at order.

COMBINATIONS

Tuneable white with DS-1 colours	Possible
Tower crane frame	On the DarkLicht One only
DALI-2 and NFC	Standard
Ten year warranty	Under a maintenance agreement
IP68 or IP69K	Not on these types
DC supply	Not available

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	In-house test
Impact	IEC 62262 IK07	In-house test
Corrosion	ISO 9223 class C5, industrial and marine	In-house test
Obtrusive light	NSVV guideline · DarkSky DS-1 at 1700 to 2200 K · EN 12464-2 · EN 12193	Third party test
Photometry	IES LM-79, IES files per optic	In-house test
Substances	RoHS, REACH	Self-declaration

BEFORE YOU ORDER

A DIALux calculation and a mast schedule from our engineers, on your site drawing.

Masts to 50 m with engineering and foundations, from one supplier.

Five years warranty, extendable to ten under a maintenance agreement.

QR-code naar de productpagina van de DarkLicht One, Two and

PRODUCT PAGE

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

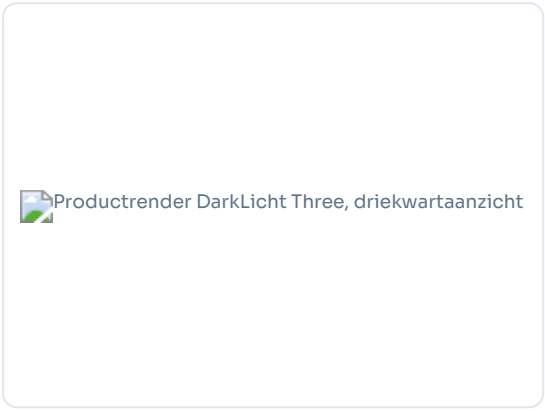
WHERE IT EARNS ITS PLACE

The large DarkLicht types earn their place on projects that would otherwise not be permitted. The high mast decides whether a site meets its obtrusive light condition, and it is also the position where compensating with extra masts is most expensive. Solving the light control in the reflector at the top of the mast is the cheapest place in the entire project to solve it.

Notes. Values are for the standard configuration. The cut off angle is a factory setting and does not change the luminous flux, only where the light lands. The stated LED service life of L90B05 > 103,500 hours is the figure for the DarkLicht range and is lower than the 360,000 hours of the floodlight range; that is a property of this reflector platform. The JEL range is not ATEX or Ex certified.

GLARE FREE LED AREA LIGHT

DarkLicht Three


Productrender DarkLicht Three, driekwartaanzicht

Shown: DarkLicht Three, 307,800 lm, cut off set to 69°.

CE | IP67 | IK07 | Class I | C5 ISO 9223 | Ta −45 … +50 °C | 180–528 VAC | 307,800 lm | ULOR 0 % | DarkSky DS-1 | EN 12193 | NSVV

The largest full cut off luminaire in the range, 307,800 lumens out of a single housing, with 0 % upward light. The high mast decides whether a site meets its obtrusive light condition.

LUMINOUS FLUX	POWER	EFFICACY
307,800 lm	1,800 W	171 lm/W
ULOR	**CUT OFF**	**IMPACT**
0 %	63–75°	IK07

Values apply to the standard version at 4000 K, Ta 25 °C, including reflector losses and driver consumption, with the cut off set to the standard position.

WHY IT IS SPECIFIED

The high mast is where obtrusive light is created. It is the highest, brightest and most visible source on a site and it is seen from the greatest distance. Solving light control at the top of the mast solves most of the problem in one step.

Full output from one position. 51,200 to 307,800 lumens on the same reflector technology, so a project can dimension per mast without changing the light distribution or the calculation.

Cut off without adding masts. On a high mast project the mast, the foundation, the trench and the cabling cost more than the luminaires. At 171 lumens per watt with the cut off in place, no extra mast is needed.

WHERE IT IS USED

- Container and intermodal terminal high masts
- Port and quay areas with a residential boundary
- Tower cranes, on the tower crane frame
- Sports fields and training grounds
- Logistics and distribution high mast lighting
- Vehicle storage and compound lighting
- Large car parks and park and ride sites
- Rail yards and marshalling areas
- Bulk storage and laydown yards
- Waste and recycling facilities
- Large agricultural and horticultural sites

VERSIONS

	DarkLicht Three
Flux	307,800 lm
Power	1,800 W
Size	905 × 550 × 160
Weight	35.0 kg
Driver	External

From 600 W the driver goes up the mast with the luminaire. Its mass and wind area must be counted, see the wind load table.

Light output and optics

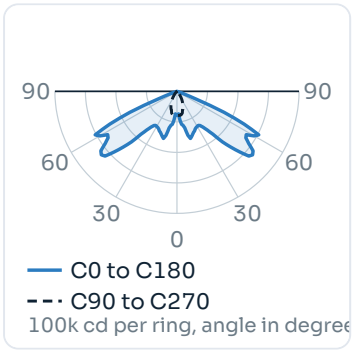
Values apply to the Three at Ta 25 °C with the cut off in the standard position. The whole DarkLicht line shares one light distribution, so the diagrams below apply to every type at its own luminous flux.

BEAM CHARACTERISTICS

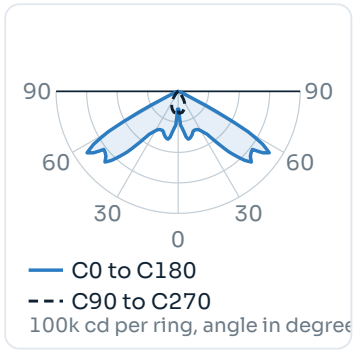
Setting	Distribution	Cut off	Beam angle 50 % of peak	Typical use
63°	Full cut off, asymmetric	63°	–	Tight boundaries, a site directly against housing or a carriageway
66° and 69°	Full cut off, asymmetric	66° and 69°	–	The usual settings for a yard or a car park
72°	Full cut off, asymmetric	72°	123°	Wider cover where the boundary allows it
75°	Full cut off, asymmetric	75°	132°	Maximum reach, sites without a sensitive boundary

The DarkLicht does not use lenses. A patented parabolic reflector throws the light forward and down and cuts it off completely above the set angle, which is set at the factory to the shield position given on the order, between 63 and 75 degrees. The two diagrams show the two shielding positions of the reflector. The whole DarkLicht line shares one light distribution, so one measured set covers every type in the range and a lighting designer works with one photometric behaviour at every mounting height.

LIGHT DISTRIBUTION



Shielding position 1



Shielding position 2

OBTRUSIVE LIGHT

ULOR at 0° tilt	**0 %**
Cut off angle	Factory set, shield position S1 to S5, 63° to 75°
Standards	NSVV guideline · DarkSky DS-1 · EN 12464-2 · EN 12193

A conventional floodlight lights everything in front of it, including the sky, the neighbour and the driver approaching the site. The DarkLicht range is built the other way around: a patented parabolic reflector, not a lens, cuts the light off completely above an angle that is set at the factory between 63 and 75 degrees and specified with the order. Upward light output ratio is 0 %, and the luminaires have been third party tested against the DarkSky DS-1 requirements at colour temperatures between 1700 and 2200 K.

COLOUR AND CONSISTENCY

Colour temperatures	5700 K, 5000 K, 4000 K, 3000 K, 2700 K, amber 2200 K, 1800 K, 1700 K
Tuneable white	4000 K with 2200 K and 1700 K, switchable in operation
DarkSky DS-1	Met at 1700 to 2200 K, third party tested
Colour rendering	Ra > 70 standard, optionally 80 or 90
Colour consistency	MacAdam step 3 or better
LED service life	TM-21 L90B05 > 103,500 h

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.

	DarkLicht Three
PERFORMANCE	
Luminous flux	307,800 lm at 1,800 W
Efficacy	171 lm/W
Upward light output ratio	0 % at 0° tilt
Cut off angle	63°, 66°, 69°, 72° or 75°, factory set, shield position S1 to S5
ELECTRICAL AND DRIVER	
Supply voltage range	180–528 VAC or 250–740 VDC, 50/60 Hz
Current draw	8.2 A at 220 V · 4.8 A at 380 V
Power factor at full load	> 0.9 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	External, 3 × TLD600 in the DRB-2 or on a tray
Driver life	≥ 100,000 h at Tc 75 °C, MTBF ≥ 320,000 h
CONSTRUCTION	
Housing	Cast aluminium, less than 0.08 % copper
Optic	Patented parabolic reflector, no lens
Bracket	High tensile 316L stainless steel, unlimited rotation from -20° to +20°
Front	Impact resistant glass. The luminaire is classified IK07
Protection class	Class I
Ingress protection	IP66 and IP67
Impact resistance	IK07 (IEC 62262). The construction is in practice IK08 but there is no test report for it
Corrosion class	C5 industrial and marine (ISO 9223)
DURABILITY, DIMENSIONS AND WIND LOAD	
Ambient temperature	−45 to +50 °C
LED service life	TM-21 L90B05 > 103,500 h
Dimensions	905 × 550 × 160 mm
Weight, luminaire	35.0 kg
Weight, with external driver	On request
Wind load, frontal at 0°	75,400 mm²
Wind load, frontal at 20°	182,000 mm²
Wind load, side, luminaire	94,875 mm²
Wind load, side, with driver	On request
Drag coefficient	Cd 1.22 luminaire, Cd 1.23 with driver
Warranty	5 years, extendable to 10 years under a maintenance agreement

Wind load data is from the DarkLicht wind rating report. The rows with the external driver are the ones that matter for a mast calculation: at 600 W and above the driver goes up the mast, which adds about nine kilograms and more than doubles the side area. A calculation that uses only the luminaire row is not conservative.

Mechanics, mounting and driver

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

HOUSING AND BRACKET



Dimensions	905 × 550 × 160 mm, 35.0 kg
Bracket	High tensile 316L, unlimited from -20° to +20°
Front	Impact resistant glass, luminaire classified IK07
Optic	Patented parabolic reflector

WIND LOAD FOR THE MAST

Frontal at 0°	75,400 mm²
Frontal at 20°	182,000 mm²
Side, luminaire only	94,875 mm²
Side, with external driver	On request
Cd	1.22 luminaire, 1.23 with driver
Count the driver	The driver always goes up the mast

MOUNTING AND ACCESSORIES

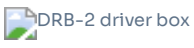
Standard bracket	High tensile 316L, supplied as standard
Tower crane frame	Available on the DarkLicht One. Separate datasheet
DRB-2 driver box	For the external drivers at 600 W and above
High masts	JEL supplies masts to 50 m with engineering and foundations. Separate datasheet
Ten year warranty	Under a maintenance agreement with JEL or an appointed party
Smaller version	DarkLicht D and DarkLicht M

DRIVER

1,800 W	External, 3 × TLD600
Enclosure	DRB-2 or a tray, up the mast with the luminaire

From 600 W the driver goes up the mast. That is nine kilograms and more than twice the side area, and it is the single most common omission in a high mast calculation. Both rows are in the wind load table for that reason.

DRB-2 DRIVER BOX



Use	Housing for the external drivers
DRB-2	Systems up to 2,000 W. 441 × 290 × 145 mm, 10.4 kg, IP66 and IP67
Ingress protection	IP66 and IP67
Alternative	Open tray, where the mast head allows it

Ordering, standards and documents

ORDER CODE

Example **DL3-40K-1800W**

DarkLicht Three, 4000 K, 1,800 W

DARK06	DarkLicht Three at 1,800 W
1800W	The single power level of the Three
57K · 50K · 40K · 30K · 27K · 22K · 18K · 17K	Colour temperature, including the DarkSky DS-1 range
TW	Tuneable white, 4000 K with 2200 K and 1700 K

The cut off angle is a factory setting: give the shield position S1 to S5 with the order. Driver placement and control protocol are confirmed at order.

COMBINATIONS

Tuneable white with DS-1 colours	Possible
Tower crane frame	On the DarkLicht One only
DALI-2 and NFC	Standard
Ten year warranty	Under a maintenance agreement
IP68 or IP69K	Not on these types
DC supply	Not available

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	In-house test
Impact	IEC 62262 IK07	In-house test
Corrosion	ISO 9223 class C5, industrial and marine	In-house test
Obtrusive light	NSVV guideline · DarkSky DS-1 at 1700 to 2200 K · EN 12464-2 · EN 12193	Third party test
Photometry	IES LM-79, IES files per optic	In-house test
Substances	RoHS, REACH	Self-declaration

BEFORE YOU ORDER

A DIALux calculation and a mast schedule from our engineers, on your site drawing.

Masts to 50 m with engineering and foundations, from one supplier.

Five years warranty, extendable to ten under a maintenance agreement.

QR-code naar de productpagina van de DarkLicht One, Two and

PRODUCT PAGE

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

WHERE IT EARNS ITS PLACE

The large DarkLicht types earn their place on projects that would otherwise not be permitted. The high mast decides whether a site meets its obtrusive light condition, and it is also the position where compensating with extra masts is most expensive. Solving the light control in the reflector at the top of the mast is the cheapest place in the entire project to solve it.

Notes. Values are for the standard configuration. The cut off angle is a factory setting and does not change the luminous flux, only where the light lands. The stated LED service life of L90B05 > 103,500 hours is the figure for the DarkLicht range and is lower than the 360,000 hours of the floodlight range; that is a property of this reflector platform. The JEL range is not ATEX or Ex certified.