

Light shapes the city of tomorrow.

PUBLIC LIGHTING · ROAD · CONNECTED

SMART CITY

WIRELESS MESH NETWORK



LOTUS CATALOGUE D-SLS-14

2026

LOTUS D-SLS-14 20-250 W · LED road luminaire

D-SLS
Digital Smart Lighting Solutions

OVERVIEW · LOTUS LED ROAD LUMINAIRE

20 → 250 W range · three sizes, one optical, electronic and remote management platform



LOTUS 1 — same optic, same driver and same Zhaga Book 18 · 20 base across all three sizes

46 750 lm

max. luminaire flux · 250 W

187 lm/W

luminaire efficacy · T_q 25 °C

ULOR 0 %

no upward light · class G*6

DALI-2 · D4i

programmable driver · NFC

100 000 h

L90B10 · IES TM-21

7 years

warranty · 10 years optional

One platform, every road

The **LOTUS** covers 20 to 250 W with three body sizes and a single architecture. Its indirect **MIRO-SILVER** inter-reflection optic (reflectance $\rho \geq 98 \%$, EN 10204 3.1 material certificate) in a "dark-light" architecture — recessed source, not visible beyond 70° — achieves optical efficiency $\geq 95 \%$ with **ULOR 0 %**, class G*6 and TI $\leq 10 \%$. Underdriven ceramic **LUSO-5050AUX** LED chip — **187 lm/W** at luminaire —, **DALI-2 / D4i** driver programmable via NFC, integrated **SPD 10 kV / 10 kA** and **Zhaga Book 18 · 20** socket ready for the LiDAR node: an **ENEC**-certified road luminaire, fully repairable on site.



Urban & extra-urban roads

Classes M, C and P (UNI 11248 / EN 13201) — wide roads, wet surfaces, motorway interchanges and very narrow urban streets.



Cycle & pedestrian paths

Enhanced pedestrian crossings, soft-mobility routes, car parks — A / B / C photometries and CCT from 1800 to 5000 K.



Sensitive & dark-sky areas

ULOR 0 %, class G*6 and warm CCTs: compatible with IDA protected areas, observatories and migration corridors.

LOTUS · NEW ON-BOARD TECHNOLOGIES

Indirect reflector by inter-reflection, LiDAR node, D4i · DALI-2 · Thread — the range's connected platform

Indirect reflector (inter-reflection) — reflectance $\geq 98\%$



Satin aluminium reflector optics, the LED is never seen directly: reflected, anti-glare light, no PMMA lens. Reflectance $\geq 98\%$, ULOR 0 %, asymmetric road distribution. One-piece LED matrix, screw-removable.

New technologies used



LiDAR node
presence detection, counting, Zhaga D4i socket underneath



Static detection
built-in mmWave radar — presence without motion



Thread mesh network
IPv6, self-healing, TALQ 2.7.1



Tunable White
1800 → 6500 K controlled via D4i + DT8



Certified interfaces

THREAD

TALQ 2.7.1

ZHAGA BOOK 18

NFC

DALI-2

D4i



D4i
Intelligence serving urban lighting

Interoperability

D4i-compliant for open ecosystems

Power and data on the same cable

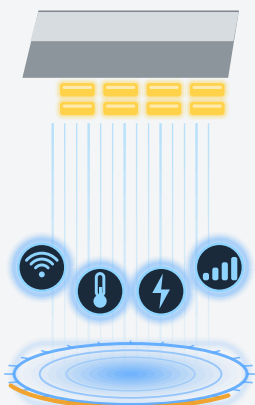
standardised interface

Smart sensors

detection, counting, energy monitoring

Predictive maintenance

real-time diagnostics and remote management



DALI+
Advanced, scalable management

Precise control

dimming and lighting scenarios

Multi-device

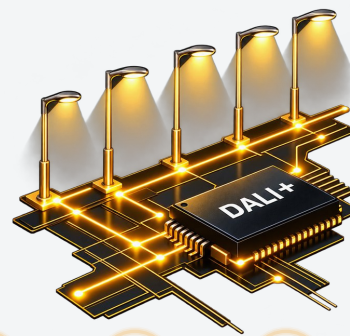
group and address management

Interoperability

certified multi-brand DALI+ ecosystem

Flexibility

suited to current and future projects



Scenarios



Schedules



Regulation



Supervision

LOTUS — the six connected functions



TUNABLE WHITE



LiDAR AI



MESH NETWORK



SECURE VPN



OTA SELF-HEALING



AI ANTI-THEFT

PRODUCT ARCHITECTURE · SIX KEY POINTS

A fully dismantlable luminaire: everything is replaced on site, no special tools



LOTUS 3

20 – 50 W



LOTUS 2

60 – 110 W



LOTUS 1

120 – 250 W

LOTUS 3 · LOTUS 2 · LOTUS 1 — same optic, LED module and driver plate accessible tool-free

1

MIRO-SILVER optics

Indirect reflector $\rho \geq 98\%$ · AR glass
 $\tau_v > 98\%$ · ULOR 0 %, class G*6



2

Zhaga Book 18 · 20 socket

LiDAR node clips on at any time,
without opening the luminaire



3

Plug-in driver

Tool-free replacement · integrated 10
kV / 10 kA SPD · NFC programmable



4

Ø33 – 76 mm fixing

Post top or side entry Ø60 mm · tilt
 $\pm 20^\circ$



5

Tool-free opening

Die-cast aluminium hooks · fast
maintenance from the aerial platform



6

LUSSO-5050AUX LED module

187 lm/W
luminaire · L90B10 $\geq 100\,000$ h



LOTUS 3

20 – 50 W

LOTUS 2

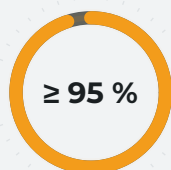
60 – 110 W

LOTUS 1

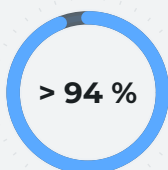
120 – 250 W

Same optical platform, electronics and remote management across the range.

PERFORMANCE & SAVINGS · DASHBOARD



optical efficiency

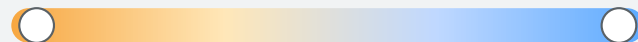


driver efficiency



energy (LiDAR)

TUNABLE WHITE — CCT RANGE



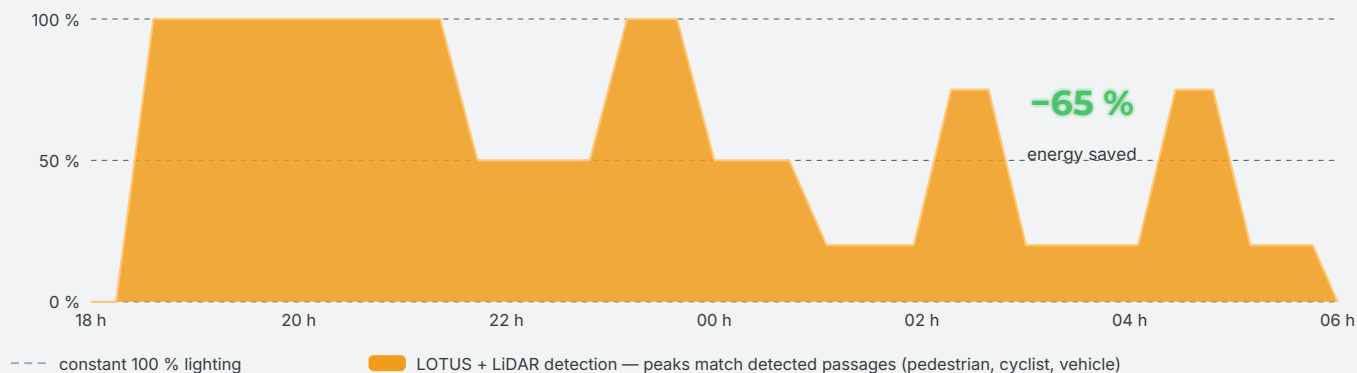
2200 K WARM

COOL 6500 K

D4i + DT8 control — CRI 70 · 80 · 90 · 99, MacAdam < 3 SDCM

Fixed CCT: 1800 · 2700 · 3000 · 4000 · 5000 K

LiDAR ADAPTIVE DIMMING — TYPICAL NIGHT PROFILE



ANNUAL CONSUMPTION PER LIGHT POINT — 4 200 h/yr · 0.25 €/kWh

HPS 250 W (existing) 1 155 kWh/yr · €289

LOTUS 80 W 336 kWh/yr · €84 -71 %

LOTUS 80 W + LidarMesh 144 kWh/yr · €36 -88 %

Assumptions: 250 W HPS (275 W system, ballast included) replaced by a LOTUS 80 W that exceeds the required EN 13201 levels.

< 2.5 years

return on investment*

-252 kg

CO2 avoided per point per year

zero

relamping — L90B10 ≥ 100 000 h

100 %

remotely controllable (TALQ 2.7.1)

Reading the dashboard

* Based on the energy price above, avoided relamping and an indicative investment of €550 per point — excluding installation, exact costing on study. Savings shown combine three levers: the efficacy of the LED platform (187 lm/W luminaire), the dark-light optic that sends no flux outside the carriageway, and on-demand dimming by the LiDAR node, which only lights at full power when a user is detected.

KEY FEATURES · 8 REASONS TO CHOOSE THE D-SLS-14



« Dark-light » indirect reflector

Indirect reflector (inter-reflection) in aluminium $\rho \geq 98\%$ (ISO 7668 / DIN 5036-3, EN 10204 3.1 material certificate), recessed source not visible beyond 70° : optical efficiency $\geq 95\%$, ULOR 0 %, class G*6, TI $\leq 10\%$.



Tool-free maintenance

Cover opening via die-cast aluminium hooks, removable wiring plate, pluggable driver and LED module: all work is done from the aerial platform, without removal.



Zhaga Book 18 LED module

Removable, field-replaceable module, under-driven LUSO-5050AUX LEDs — $\geq 100\,000$ h L90B10 (TM-21).



NFC-programmable driver

DALI-2 and Zhaga-certified D4i: wirelessly adjustable output current (AOC), dim-to-off < 0.5 W, 3 timer modes, OLC compensation, 24 V DC auxiliary.



Remote-management ready

Zhaga Book 18 · 20 socket fitted as standard: the LiDAR node and the LidarMesh CMS platform can be added later, without opening or removing the luminaire.



Full protection

SPD 10 kV / 10 kA type II with end-of-life indicator, IP66, IK09 overall, class II or I, stainless steel IP68 cable gland.



Three sizes, one platform

LOTUS 3 (20 – 50 W), LOTUS 2 (60 – 110 W) and LOTUS 1 (120 – 250 W) share optics, driver, Zhaga socket and accessories — a single spare-parts stock for the whole fleet.



7-year warranty · ENEC certified

Extension to 10 years (W10 option). ENEC certificate HN 69290740 (TÜV Rheinland) and TÜV SÜD attestation — repairable luminaire, ecodesign compliant.

COMPONENTS · HOUSING, WIRING, LED MATRIX, DRIVER

Modern design: easy to install and maintain — LOTUS 3 photos, platform shared by all three sizes

HOUSING & CONNECTION



LED matrix and disconnect-on-opening connector



IP66 network connector, double fixing



Stainless steel pressure-equalisation valve — hydrophobic membrane

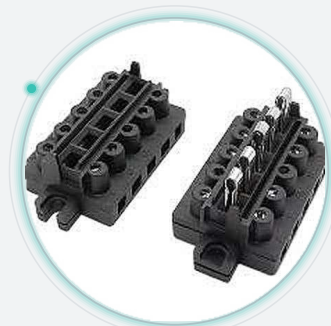
WIRING & CONNECTION



Cable 2 x 1.5 mm², ≥ 300 mm, exiting through the arm



Toggle latch — smooth cover, internal fins



Screw terminal block, 2 x 5 poles — removable wiring plate

PROGRAMMABLE DRIVER & ZHAGA SOCKET



DALI-2 / D4i driver, NFC when de-energised



Driver compartment — removable wiring plate



Zhaga D4i socket underneath — LiDAR node or sensor

1 / 3

CPS

MATERIALS & CONSTRUCTION

CPS technical file — 1 / 3: luminaire body materials & construction

LED module	Removable / replaceable — Zhaga Book 18 standard · Zhaga Book 18 · 20 sensor socket fitted as standard
Housing / cover	Die-cast aluminium — production alloy EN AC-46100 (AlSi11Cu2(Fe)) high-pressure die-cast to UNI EN 1706 — thermal conductivity $\approx 100 \text{ W/m}\cdot\text{K}$ (dissipation via internal fins) · no corrosion or pitting of the material: outdoor-grade polyester powder coating, UV-resistant, rated for C1 – C3 zones (ISO 9223), C5 as option
Reflector	High-reflectance aluminium MIRO-SILVER $\rho \geq 98 \%$ (ISO 7668 / DIN 5036-3) — anti-iridescence textured surface, sealed optical chamber, EN 10204 3.1 material certificate per batch
Closing hooks	Die-cast aluminium, stainless-steel spring — tool-free opening
Optical block	Treated aluminium indirect reflector — reflectance $\geq 98 \%$, sealed optical chamber
Screen	5 mm extra-clear flat tempered glass, anti-reflective — transmission $> 97 \%$ · AR glass screen
Sealing	EPDM gasket (luminaire) · silicone reserved for external cable connectors · stainless M20 $\times$ 1.5 cable gland IP68
Anti-corrosion treatment	Housing surface preparation before painting: alkaline degreasing, pickling and chemical conversion passivation , then oven-cured polyester powder coating $\geq 70 \mu\text{m}$ — salt spray 500 h (ISO 9227), C3 corrosivity standard, C5-M seaside optional (MAR)
Finish	Colour of choice (RAL chart) — C5 coastal anti-corrosion treatment as option (MAR)
Driver	Programmable DALI-2 / D4i electronics, ENEC certified — tool-free plug-in

A fully dismountable luminaire

Tool-free opening cover, removable wiring plate, pluggable driver and LED module: all wearing parts are replaced on site, from the aerial platform, without removing the luminaire or returning it to the workshop.

COMPONENTS

Sources and electronics from world-class suppliers, integrated and qualified by D-SLS. LED LM-80 files and driver datasheets available on request.

EN AC-46100

die-cast aluminium

$\rho \geq 98 \%$

MIRO-SILVER reflector

IP68

stainless cable gland

$\approx 100 \text{ W/m}\cdot\text{K}$

body thermal conductivity

C1 – C3

corrosion resistance ISO 9223 · C5 option

$\tau > 97 \%$

AR glass transmission



LOTUS — platform common to all three sizes

2 / 3

CPS

TECHNICAL SPECIFICATIONS · MECHANICS & OPTICS

CPS technical file — 2 / 3: technical characteristics to compare point by point with the CPS

Applications	Street lighting — extra-urban roads, urban roads, cycle and pedestrian paths, wide and wet carriageways, motorway interchanges, pedestrian crossings · classes M, C and P (UNI 11248 / EN 13201)
Optical block	Indirect reflector (inter-reflection) in MIRO-SILVER satin aluminium — total reflectance $\rho \geq 98\%$ (ISO 7668 / DIN 5036-3), anti-iridescence structured surface, EN 10204 type 3.1 material certificate · « dark-light » architecture: recessed source, not visible beyond 70°
Optical efficiency	$\geq 95\%$ — ULOR 0 % (0 cd/klm at $\geq 90^\circ$), class G*6, TI $\leq 10\%$
Screen	5 mm extra-clear flat tempered glass, double-sided anti-reflective — tv $> 98\%$ (EN 410)
Photobiological safety	EN 62471 — EXEMPT group · automatic power disconnection when the cover is opened
Insulation class	EU: class II or class I US: class 1
Anti-corrosion treatment	Housing surface preparation before painting: alkaline degreasing, pickling and chemical conversion passivation , then oven-cured polyester powder coating $\geq 70\ \mu\text{m}$ — salt spray 500 h (ISO 9227), C3 corrosivity standard, C5-M seaside optional (MAR)
Ingress protection	IP 66 (IEC 60529 — powerful water jets) · IK 09 overall (IEC 62262)
Pressure equalisation	Stainless steel pressure-equalisation valve with hydrophobic membrane — lets air and water vapour through, never liquid water or dust: no internal condensation, no thermal pumping · ingress protection fully maintained
Tilt	Post top: 0°, +5°, +10°, +15°, +20° · Side entry: 0°, -5°, -10°, -15°, -20°
Mounting	Bracket or Ø60 mm pole top — adapters Ø33 ÷ Ø60 mm (option M33) and Ø60 ÷ Ø76 mm (option M76) · top mounting
Exposed surface	Side: 0.05 m ² · Plan: 0.18 m ² · SCx: 0.04 m ² (LOTUS 1)
Dimensions	LOTUS 1: length 922 mm · width 362 mm · head 289 mm — LOTUS 2 / 3 dimensioned drawings on request
Weight	5 kg — 15 kg depending on size and configuration
Wiring	Removable wiring plate — tool-free opening and maintenance · M20 × 1.5 stainless cable gland IP68
Temperatures	Operation: -40 °C / +50 °C (ta 50 °C attested) · Storage: -40 °C / +80 °C
Colour temperatures	1800 K · 2700 K · 3000 K · 4000 K · 5000 K · Tunable White 2200 – 6500 K (TW option)
CRI	70 (standard) · 80 · 90 · 99
MacAdam ellipse	< 3 SDCM (standard)
LED	LUSSO-5050AUX CSP TECHNOLOGIES ceramic LED chip — source efficacy LED CSP · luminaire efficacy 187 lm/W (4000 K / CRI 70, Tq 25 °C) · Rth 0.9 °C/W · under-driven LEDs, LED count matched to each power · programmable NTC-ETM DIGITAL thermal controller
Power & flux	20 · 30 · 40 · 50 · 60 · 80 · 100 · 120 · 150 · 180 · 200 · 250 W — up to 46 750 lm (4000 K / CRI 70, Tq 25 °C) · other wattages on request
Power supply	220 – 240 V AC · 50 / 60 Hz — 90 – 305 V AC optional
Driver	DALI-2 · D4i + DT8 programmable via NFC · efficiency $> 94\%$ · power factor > 0.95 · dim-to-off $< 0.5\text{ W}$
Surge protection	Integrated type II SPD 10 kV common mode / 6 kV differential mode (10 kA), end-of-life indicator — external 20 kV SPD optional (SP20)
Thermal controller	NTC-ETM DIGITAL thermal controller — NTC probe on LED matrix and driver, digital threshold programmable via NFC, automatic current reduction when threshold is exceeded
Lifetime	L90B10 $\geq 100\ 000\text{ h}$ (IES LM-80 / TM-21) — maintenance factor 0.80 used in studies
Dimming & remote management	DALI-2 · D4i + DT8 · autonomous profiles · Zhaga Book 18 · 20 socket — LidarMesh CMS TALQ 2.7.1 (LD option)
Warranty	7 years — 10 years optional (W10)

ENEC

TÜV SÜD

RoHS

IP66

IK09

DALI-2

D4i + DT8

Zhaga Book 18

Standards framework

Reference standards: EN IEC 60598-1:2021/A11:2022, EN 60598-2-3, EN 62493, EN 62471, EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3, EN 13201, IEEE 1789 — ENEC-certified driver (EN 61347-1 / EN 61347-2-13). The published references correspond to the types in ENEC certificate HN 69290740.

3 / 3

CPS

CERTIFICATIONS & STANDARDS

CPS technical file — 3 / 3: certificates, tests and standards framework

ENEC certificate no. HN 69290740

Test body	TÜV Rheinland InterCert Kft. (MEEI, Budapest)
Standards	EN IEC 60598-1:2021 + EN 60598-2-3
Holder	D-SLS SRL — Via Bocchetto 6, 20123 Milano (MI), Italia
Covered types	D-SLS-a-b-cd families — series 14 (LOTUS road), all wattages from 20 to 250 W
ENEC parameters	AC 220 – 240 V · class I · IP66 · ta 45 °C
TÜV SÜD	Attestation N8A 08132 0101 — class II · IP66 · IK09 · ta 50 °C

Copy of certificate and test report supplied with every bid.

Additional tests

- **IP66** — IEC 60529 (dust · powerful water jets)
- **IK09** — IEC 62262 (impact resistance, 10 J)
- **EN 62471** — photobiological safety RG0
- **EN 61000-4-5** — surge immunity 10 kV / 6 kV
- **EMC** — EN 55015 · EN 61547 · EN 61000-3-2 / -3-3
- **LM-80 / TM-21** — lifetime ≥ 100 000 h L90B10

Standards framework

Luminaire safety

EN IEC 60598-1 · EN 60598-2-3 · EN 60598-2-5

Electromagnetic compatibility

EN 55015 · EN 61547 · EN 61000-3-2 · EN 61000-3-3 · EN
61000-4-5

Application

EN 13201 (street lighting) · UNI 11248 (classes M, C, P) · CIE 150
(light pollution)

Lifetime

IES LM-80 · IES TM-21 · IES LM-79 · UNI EN 13032-1

Photobiology

EN 62471

Protection

EN 60529 (IP) · EN 62262 (IK)

Control & interoperability

IEC 62386 (DALI-2 · D4i) · Zhaga Book 18 · TALQ 2.7.1

European directives

2014/35/EU (low voltage) · 2014/30/EU (EMC) · 2011/65/EU
(RoHS)

ENEC

TÜV SÜD

RoHS

IP66

IK09

DALI-2

D4i + DT8

Zhaga Book 18

Compliance file

The parameters above are those on the current ENEC certificate; the product characteristics on previous pages correspond to the luminaire's current commercial definition. Published product references correspond to the ENEC certificate types. Compliance with directives 2014/35/EU, 2014/30/EU and 2011/65/EU; EU declaration of conformity, ENEC certificate, IP / IK reports and photometric files attached to each tender file.

Documents supplied with every offer

ENEC certificate	Certificate no. HN 69290740 and test report — TÜV Rheinland InterCert
EU Declaration	EU Declaration of Conformity — directives 2014/35/EU · 2014/30/EU · 2011/65/EU
IP / IK reports	IP66 per IEC 60529 · IK09 per IEC 62262 on assembled luminaire
LED lifetime	LM-80 report of 18 000 h (0 failures) and IES TM-21 projection
Photometry	Measured photometric curve · LDT / IES files per wattage and CCT
Lighting study	DIALux / Relux calculation report to EN 13201 — classes M, C and P

TYPE TESTS & ROBUSTNESS

TYPE TESTS

Temperature rise	ta 50 °C — EN 60598-1 § 12: driver tc and LED module tp, values corrected to the reference ambient.
Sealing	IP 66 — IEC 60529 (dust · powerful water jets).
Mechanical impact	IK 09 overall — IEC 62262 (10 joules), on assembled luminaire.
Vibration	IEC 60068-2-6 — road mounting, post-top and console.
Surges	10 kV / 10 kA — EN 61000-4-5; replaceable type II SPD with end-of-life indicator — external 20 kV SPD optional.
Photometry	EN 13032 / LM-79 — LDT and IES files per reference and per CCT; LM-79 reports with standard optic: in progress.
Long-term flux	LM-80 + TM-21 — L90B10 ≥ 100 000 h.
Corrosion	Salt spray ISO 9227 — 500 h on coating and fasteners.

ROBUST PRODUCT — DESIGN CHOICES

Body / cover	Die-cast aluminium (high-pressure) EN AC-46100 (AlSi11Cu2(Fe)) to UNI EN 1706 — EN 10204 type 3.1 material certificate.
Coating	Exterior-grade polyester powder coating: thickness ≥ 70 µm (ISO 2360), adhesion class 0 (ISO 2409), salt spray 500 h (ISO 9227), UV resistant.
Reflector	High-reflectance aluminium ρ ≥ 98 % (ISO 7668 / DIN 5036-3), anti-iridescence textured surface, sealed optical chamber.
Screen	5 mm extra-clear flat tempered glass: EN 12150-1, heat-soak test EN 14179, double-sided anti-reflective coating (EN 410).
Closure	Die-cast aluminium hooks + stainless-steel springs — A2 stainless fasteners, tool-free opening.
Wiring	Removable wiring plate, plug-in connectors — tool-free driver and SPD replacement.
Pressure-equalisation valve	Stainless steel valve with hydrophobic membrane — equalises internal pressure at every day / night cycle without affecting sealing; replaceable without opening the luminaire.

Repairability

The luminaire is designed to be **repairable on site**: LED module, driver and SPD are replaced individually, without removing the luminaire or using special tools. This architecture meets the circular-economy requirements of European ecodesign and extends the installation's useful life well beyond the warranty.

ta 50 °C

certified ambient temperature

10 J

IK09 on assembled luminaire

500 h

salt spray ISO 9227

10 kV / 10 kA

surge immunity

LED MODULE LIFETIME · IES TM-21 PROJECTION

LM-80-21 report · 18 000 h · 180 samples · 0 failures · 55 to 105 °C · 160 mA operation per LED

An under-driven LED, an over-sized warranty

D-SLS luminaires use a high-power ceramic **LUSSO-5050AUX** LED chip driven at only **160 mA**, i.e. 19 % of the test current: the junction works far from its limits, heat to dissipate is reduced and ageing becomes almost imperceptible. The chip manufacturer's LM-80 tests, conducted at 850 mA and up to 105 °C, still give **96 % of initial flux after 100 000 hours**; under real operating conditions, flux loss over ten years of operation is below 2 %. This performance reserve allows D-SLS to commit the company to **7 years parts, labour and travel, extendable to 10 years**, with 90 % guaranteed flux (L90).

PROJECTED LED MODULE LIFETIME

SOLDER POINT TEMPERATURE T_s	FLUX AT 100 000 h	L97	L96	L90	L80
55 °C	97,8 %	≈ 130 000 h	≈ 170 000 h	≈ 418 000 h	≈ 868 000 h
85 °C	97,4 %	≈ 114 000 h	≈ 150 000 h	≈ 372 000 h	≈ 779 000 h
100 °C	96,8 %	≈ 94 000 h	≈ 124 000 h	≈ 312 000 h	≈ 655 000 h

TM-21 reportable values (cap 6 × 18 000 h): L96 · L90 · L80 > 108 000 h at all temperatures; L97 > 108 000 h at 55 and 85 °C. Highlighted row: envelope operating condition used for the warranty — **L96B10 at 100 000 h**. 100 °C obtained by Arrhenius interpolation between the 85 °C and 105 °C datasets.

Reading note

An LED does not 'burn out': it slowly loses light. Its lifetime is therefore measured as the **number of hours after which it still retains a given percentage of its initial light**. That is what the figure after the 'L' indicates:

- **L97** = operating hours before the LED drops to 97 % of its initial light (3 % loss).
- **L96** = 96 % of light remaining (4 % loss).
- **L90** = 90 % of light remaining (10 % loss) — the usual specification reference.
- **L80** = 80 % of light remaining (20 % loss) — the conventional "end-of-life" threshold of an LED.

T_s is the temperature measured at the LED solder point on its board: the lower it is, the longer the LED lasts. A well-cooled luminaire runs at around 55 – 85 °C; 100 °C is the worst case used for the warranty.

Reading example: at T_s 100 °C, after **100 000 hours** (about 23 years at 12 h per night), the LED still delivers **96.8 %** of its initial light; it would take **312 000 hours** (over 70 years) to fall to 90 %.

CALCULATION CHAIN — LUSSO-5050AUX LED + ALUMINIUM REFLECTOR

LED CSP

LED source · 160 mA · T_q 25 °C

× 92 %

thermal factor T_s 85 °C

× 78 %

reflector 86.26 % · AR glass

× 93 %

driver efficiency

= 187 lm/W

published luminaire · 180 lm/W at t_a 50 °C

187 lm/W calculated and published at T_q 25 °C · 180 lm/W at t_a 50 °C — 250 W → 46 750 lm · 80 W → 14 960 lm · tolerance ±7 % on flux.

ELECTRICAL SPECIFICATIONS · PROGRAMMABLE DRIVER

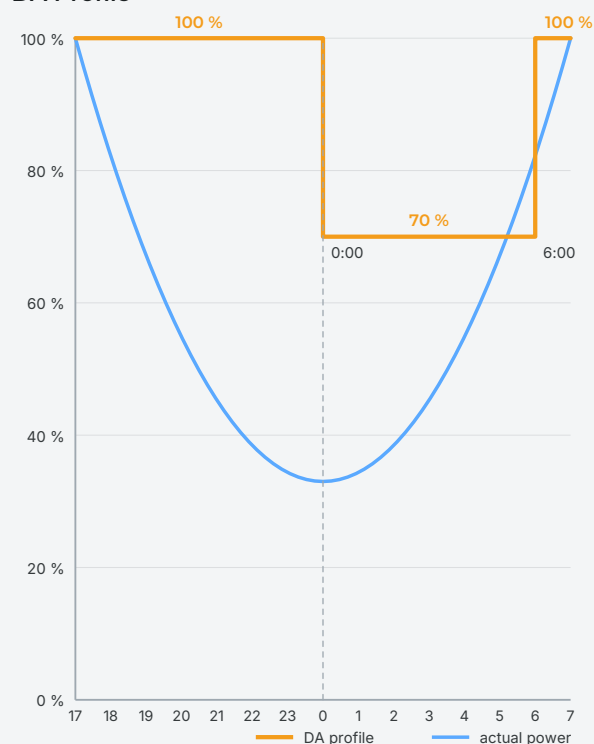
Power supply	90 – 305 V AC · 50 / 60 Hz (tolerance $\pm 10\%$ — other voltages and tolerances on request)
LED current	350 – 1 000 mA — wirelessly adjustable via NFC (AOC: programmable output current)
Power factor	> 0.95 (full load — PLM) > 0.98 (full load — F, DA, DAC)
Efficiency	$> 94\%$
Interfaces	DALI-2 · D4i Zhaga-certified · NFC · PWM · 0 – 10 V
Auxiliary supply	24 V DC / 125 mA / 3 W always on (12 V DC optional A12) · integrated 16 V DC bus (DALI-2)
Surge protection	Integrated SPD 10 kV / 10 kA type II — 10 kV common mode / 6 kV differential mode — LED signal and thermal fuse: load disconnected at end of life · external 20 kV SPD (option SP20)
Lifetime	$\geq 100\,000$ h L90B10 · $\geq 100\,000$ h L90 (IES TM-21)
Warranty	7 years (10 years with W10 option)

Built-in smart functions

- **Dim-to-off** — smart board standby < 0.5 W
- **3 timer modes** (Timer setup) — scheduled consumption reduction
- **OLC** Output Lumen Compensation — constant flux over lifetime
- **OTP — NTC-ETM DIGITAL** built into driver and LED matrix, programmable digital threshold
- Digital thermal sensing (NTC): driver and LED module protection, programmable
- End-of-life indicator · output light compensation
- Modes **F** (fixed) · **DA** (autonomous dimming) · **DAC** (autonomous + control)
- Astronomical clock and calendar profiles (option LD)

DA profile — autonomous dimming

DA Profile



Example of an NFC-programmed profile: 100 % at dusk, reduced to 70 % from 0:00 to 6:00, back to 100 % before dawn — no control wiring, matched to the actual power curve (blue).

REMOTE MANAGEMENT · LidarMesh CMS & D-SLS LiDAR NODE (OPTION LD)

D-SLS smart node — Zhaga Book 18 / D4i

- **LiDAR presence detection** — pedestrians, cyclists, vehicles: switching and dimming on demand
- **GPS location** · astronomical clock · calendar
- **D4i interface**: the node powers, meters and controls the driver (energy, diagnostics)
- **Thread** mesh network (IPv6) · **TALQ 2.7.1** gateway · LoRaWAN 3 – 15 km · HD-PLC 0 – 10 km
- Peripherals: CCTV camera, audio / video, environmental sensors, Internet access
- **DMX / Art-Net** dynamic lighting for façades and ceremonies

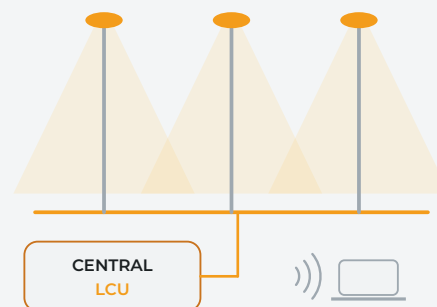
Protocols:

D4i DALI-2 TALQ 2.7.1 Thread
LoRaWAN HD-PLC PWM 0 – 10 V
DMX Art-Net



HD-PLC architecture — powerline

HD-PLC



Communication over the existing supply cable to the LCU — no additional network to deploy on the poles.



LidarMesh CMS — D-SLS remote-management platform (D-SLS Cloud Infrastructure)

- GIS mapping of light points and cabinets
- Alarms and diagnostics: driver, SPD, temperature, voltage
- Predictive maintenance and work-order management
- Dimming scenarios by zone, calendar and detection
- D4i energy metering, reports and export
- Open TALQ 2.7.1 API — interoperable with third-party CMS

Role-based secure access, European hosting on the D-SLS Cloud Infrastructure — control from smartphone, tablet or supervision workstation.



Road scenario — four levels, zero intervention

100 %

Evening

from sunset to 11 pm — full level per EN 13201

50 %

Quiet night

calendar-scheduled dimming

20 %

Standby

empty road — instant ramp-up on LiDAR detection

0 %

Dawn

astronomical switch-off, driver < 0.5 W

Implementation

The LiDAR node mounts on the luminaire's Zhaga Book 18 socket — in the factory or retrofitted on an existing installation, without opening the luminaire. The D4i driver powers it and reports energy consumed, operating hours and diagnostics. Each luminaire becomes an individual measurement and control point of the LidarMesh CMS platform.

IPv6

Thread mesh network

3 – 15 km

LoRaWAN range

0 – 10 km

HD-PLC powerline

TALQ 2.7.1

CMS interoperability

NETWORK, UPDATES & SUPERVISION · LD OPTION

Functions of the LidarMesh CMS platform and the D-SLS LiDAR node — optional, not included in the standard supply.

MESH NETWORK & CONNECTIVITY

Architecture	Each luminaire is an identical TALQ 2.7.1 gateway — exposed TALQ API, DALI D4i functions, IPv6 addressing.
Mesh network	Self-organising, self-healing mesh — sized for over 10 000 nodes: if a node fails, traffic is rerouted automatically.
Internet access	At the owner's choice: WiFi, 4G/LTE, Ethernet or fibre — a single link serves a whole segment, instant failover if it drops.
Network sobriety	A single download per segment: updates propagate node to node across the mesh.
Stand-alone mode	Full offline operation: lighting, DALI dimming, LiDAR detection, astronomical calendar (RTC + GPS) and local log — synchronisation resumes when the network returns.
Network security	End-to-end encrypted link (WireGuard, ChaCha20-Poly1305) to the platform.

REMOTE UPDATES (OTA) — SELF-HEALING

Principle	Firmware update of the entire installed base remotely, without field intervention — dual A/B partition: a healthy version is always available.
Probation	Each new version must prove correct operation (network, DALI, supervision) within 10 minutes — otherwise automatic rollback to the previous version.
Rollback guards	Hardware watchdog, reboot loop, network or routing loss, silent DALI, memory anomaly — every guard triggers rollback.
Canary deployment	In controlled waves 1 % → 10 % → 50 % → 100 % of the installed base — automatic halt and operator alert at the slightest rollback.
OTA security	Images signed and verified by a hardware secure element before flashing — secure boot, encrypted memory, SHA-256 integrity check, anti-rollback.

SUPERVISION & AI COPILOT

Dashboard	GPS map of every luminaire · real-time status, consumption, alarms and history · one-click DALI configuration.
AI copilot	Plain-language fault diagnosis, deployment recommendations and automatic campaign report.
Predictive maintenance	Pre-failure alert for LED module / driver / SPD — optional sensors: light level, temperature, air quality, noise.
Energy budget	Cap set by the operator, never exceeded: self-regulation if spending drifts, per-luminaire monitoring, savings and CO2 report.

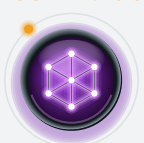
LOTUS — the six connected functions



TUNABLE WHITE



LIDAR AI



MESH NETWORK



SECURE VPN



OTA SELF-HEALING



AI ANTI-THEFT

LidarMesh CMS · D-SLS PROPRIETARY REMOTE-MANAGEMENT PLATFORM

D-SLS proprietary cloud platform — no dependence on any third-party supplier.

Each luminaire is a TALQ 2.7.1 gateway. The installed base is managed from a browser, no software to install: multi-user access with differentiated permissions, open API, cloud or on-premises deployment on request.

SMART MESH NETWORK

Technology	Self-organising, self-healing mesh — over 10 000 nodes per network
Protocols	IPv6 SLAAC · Thread · TALQ 2.7.1 · DALI-2 D4i + DT8
Safety	End-to-end encrypted tunnel · secure boot · signed firmware
Connectivity	WiFi · 4G/LTE · Ethernet · fibre — a single link per segment

ENERGY & SOLAR BUDGET

Energy budget	Cap in euros or kWh set by the operator — never exceeded: real-time self-regulation, luminaire by luminaire
Solar integration	Monitoring of PV production, storage and grid injection — adaptive control based on weather and reserve
Savings report	Dashboard of kWh saved / CO2 avoided / euros invoiced — automatic monthly report
Dynamic pricing	Lighting programme matched to grid tariff (off-peak / peak hours)

TALQ 2.7.1 INTEROPERABILITY

TALQ standard	TALQ 2.7.1 API exposed on every node — compatible with any third-party TALQ-certified CMS
DALI D4i functions	The 8 mandatory D4i functions (Part 102/103/251/252/253/304/306/351) + diagnostics
Calendars	True astronomical calendars (GPS sunrise / sunset + RTC) · scenarios · manual override
Autonomy	The operator remains owner of its data · CSV / JSON export · portability to any other TALQ CMS

ACCESS & SERVICE

Client access	Multi-browser web interface · iOS and Android mobile app
Multi-site	Multi-municipality and multi-district management · delegation of rights · full operation traceability
Hosting	D-SLS Cloud Infrastructure (European Union) · 99.9 % availability · 24/7 technical support

10 000+

nodes per mesh network

99,9 %

platform availability

24/7

technical support

0

software to install

Stand-alone mode — no Internet

The fleet remains controllable even without a connection: lighting, DALI dimming, LiDAR detection, astronomical calendar and local log work offline. Synchronisation with the platform resumes automatically when the network returns — no permanent connection is required for daily operation.

OPTIONS · COMBINABLE ORDER CODES



LD LidarMesh remote management

D4i LiDAR node on Zhaga Book 18 · 20 socket: presence detection, GPS, astronomical clock, TALQ 2.7.1 gateway, access to the LidarMesh CMS platform.



M33 / M76 Ø adapters

Mounting adapters Ø33 – Ø60 mm and Ø60 – Ø76 mm — reuse of the existing poles and brackets.



SP20 External 20 kV SPD

External surge protection device cascaded with the integrated 10 kV / 10 kA SPD — areas with high storm activity, overhead networks.



W10 10-year warranty

Extension of the standard warranty from 7 to 10 years, subject to project registration and compliant operating conditions.



MAR C5 coastal anti-corrosion

Reinforced surface treatment for marine or industrial atmospheres (ISO 12944 C5), stainless steel fasteners.



RAL Colour of choice

Custom RAL colour — municipal marking and co-branding on request.



TW Tunable White

Dynamic white 2200 – 6500 K controlled via D4i + DT8 — circadian and event scenarios.



A12 12 V DC auxiliary

12 V DC auxiliary output instead of the standard 24 V DC — powers sensors and third-party nodes.



CAP Expandable sensors

Air quality, noise, weather — add-on modules on the LiDAR node, data fed into LidarMesh CMS.



S3 CRI 80 · 90 · 99 · 3 SDCM

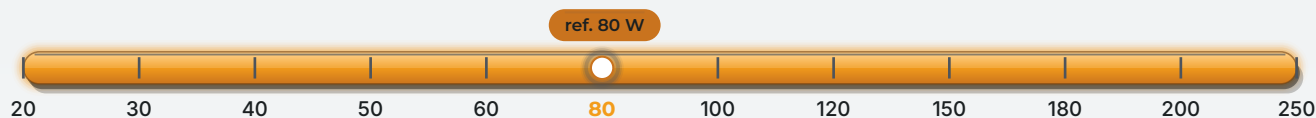
Colour rendering above the CRI 70 standard and tighter colour binning — enhancement of historic buildings.

Control

All options are cumulative and declared at the end of the reference, in the order of the coding table — e.g. **D-SLS-14-100-80A-740-LD-SP20-W10**. Mechanical options are delivered fitted; the LD option is installed and configured at the factory or added later on the Zhaga Book 18 · 20 socket, without opening the luminaire.

RANGE & DIMENSIONS

12 certified wattages — 20 to 250 W



Three sizes — LOTUS 3 (20 – 50 W) · LOTUS 2 (60 – 110 W) · LOTUS 1 (120 – 250 W): same optics, same driver, same socket

Order reference: D-SLS-14-{size}-{power}{photometry}-{CCT/CRI}-{options} — see Coding page

Main dimensions

LOTUS 1	length 922 mm · width 362 mm · head 289 mm
LOTUS 2	length 738 mm · width 289 mm · height 118 mm
LOTUS 3	length 621 mm · width 287 mm · height 118 mm
Fixing	post-top or Ø60 mm side entry — adaptors Ø33 – 60 / Ø60 – 76 · tilt $\pm 20^\circ$
Weight	range: 5 → 15 kg by model and configuration
Exposed surface	lateral 0.05 m ² · plan 0.18 m ² · SCx 0.04 m ² (LOTUS 1)



LOTUS 3

621 × 287 × 118 mm
20 – 50 W



LOTUS 2

738 × 289 × 118 mm
60 – 110 W



LOTUS 1

922 × 362 × 140 mm
120 – 250 W

Three footprints, one platform



LOTUS 3
20 – 50 W



LOTUS 2
60 – 110 W



LOTUS 1
120 – 250 W

Profiles to relative scale — dimensioned drawings of the three models on the next page.

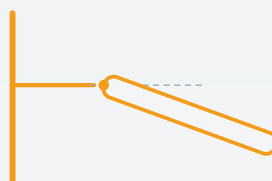
Post top Ø60 mm



$0^\circ \rightarrow +20^\circ$

Tilt 0° , $+5^\circ$, $+10^\circ$, $+15^\circ$, $+20^\circ$ — fixed by stainless screws on the shaft, wiring via removable plate.

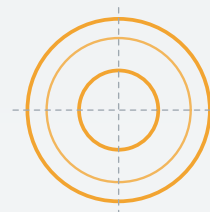
Side bracket



$0^\circ \rightarrow -20^\circ$

Tilt 0° , -5° , -10° , -15° , -20° — re-uses existing brackets during a retrofit.

Ø33 – Ø76 adapters



Ø33 · Ø60 · Ø76 mm

M33 (Ø33 – 60 mm) and M76 (Ø60 – 76 mm) options — compatible with the existing pole stock.

THE THREE MODELS · DIMENSIONS

LOTUS 3 · LOTUS 2 · LOTUS 1 — same optical, electronic and remote-management platform, three sizes



LOTUS 3

20 – 50 W

Length	621 mm
Width	287 mm
Height	118 mm
Weight	≈ 5 kg
Fixing	Ø60 mm · post-top / side entry



LOTUS 2

60 – 110 W

Length	738 mm
Width	289 mm
Height	118 mm
Weight	≈ 9 kg
Fixing	Ø60 mm · post-top / side entry

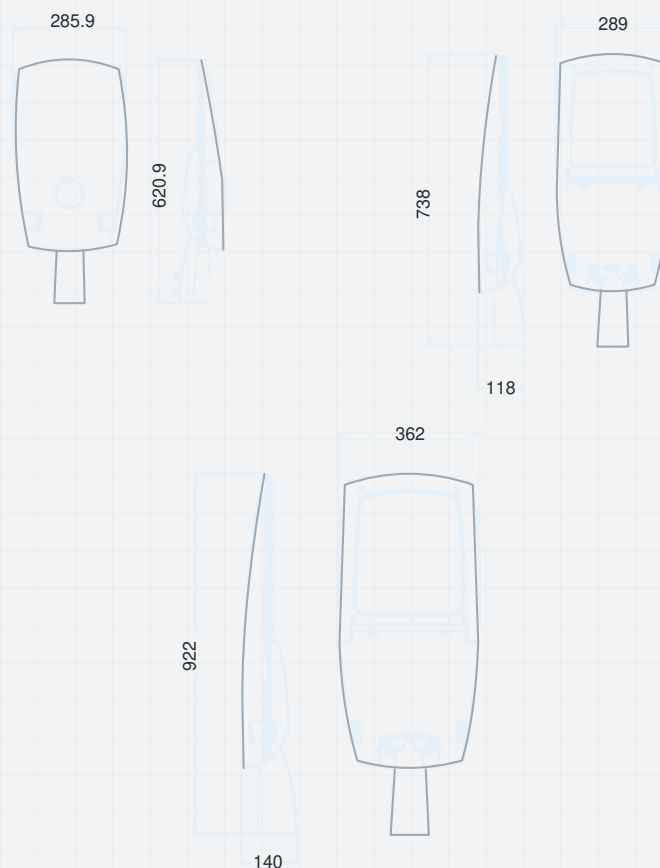


LOTUS 1

120 – 250 W

Length	922 mm
Width	362 mm
Height	140 mm
Weight	≈ 15 kg
Fixing	Ø60 mm · post-top / side entry

DIMENSIONED DRAWINGS — LOTUS 3 · LOTUS 2 · LOTUS 1



Dimensioned drawings LOTUS 3 (621 × 287), LOTUS 2 (738 × 289) and LOTUS 1 (922 × 362) — dimensions in mm, Ø60 mm arm included

APPLICATIONS & CASE STUDY



Roads & extra-urban

Classes M and C (EN 13201) — wide roads, wet surfaces, interchanges: photometries A / B / C, pole spacing kept in retrofit.



Urban & soft mobility

Class P — cycle paths, footpaths, squares and car parks: CCT 3000 K, CRI 80, ULOR 0 % to protect façades.



Sensitive areas

Parks, reserve surroundings and observatories: CCT 1800 – 2700 K, LiDAR dimming, scheduled reduction during migration periods.

CASE STUDY — TYPICAL MUNICIPALITY: 10 000 HPS 250 W LIGHT POINTS TO REPLACE

(indicative example)

-88 %

energy with LiDAR detection

10.1 GWh

saved per year across the stock

2 527 500 €

of bills avoided every year

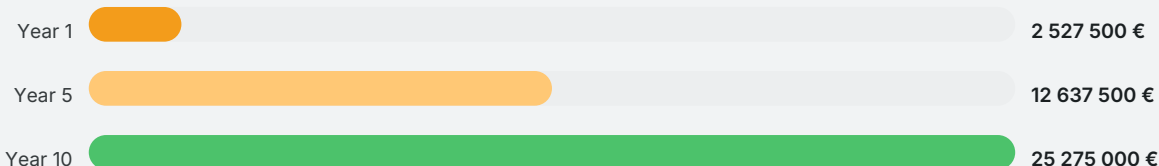
Existing base — HPS 250 W

- 10 000 points · 275 W system per point
- 11 550 000 kWh/yr · €2 887 500 billed
- Relamping every 3 to 4 years from aerial platform
- Orange sky, high ULOR, no dimming
- No metering or remote diagnostics

LOTUS 80 W solution

- 10 000 × D-SLS-14-100-80A-740
- 1 440 000 kWh/yr · €360 000 with LidarMesh
- Zero relamping — L90B10 ≥ 100 000 h
- ULOR 0 %, class G*6 — dark sky preserved
- D4i metering per point, monthly report

CUMULATIVE SAVINGS — LOTUS + LidarMesh vs HPS 250 W (in €)



Energy only — excluding avoided relamping. Indicative investment ≈ 5 500 000 € (luminaires + nodes + platform), excl. installation: payback < 2.5 years · -2 520 t CO2 per year.

Calculation assumptions

Assumptions: 4 200 h/year · 0.25 €/kWh · 0.25 kg CO2/kWh — the LOTUS 80 W exceeds the required EN 13201 levels replacing a 250 W HPS. DIALux / Relux study on request.

THE D-SLS-14 & THE ENVIRONMENT

Responsible street lighting — respectful of biodiversity, the night sky and neighbours

Light the carriageway — and nothing else.

Every technical choice — optics, spectrum, control — aims to reduce light trespass and impact on wildlife: compliance with European directives, ecodesign (EU) 2019/2020, photobiological group RG0, zero UVA radiation.

INTRUSIVE LIGHT & NEIGHBOURS

Asymmetric optics	Recessed-source architecture, not visible beyond 70°: the flux is directed onto the road, not towards windows or neighbouring gardens.
Upward flux	Dark-light architecture: ULOR 0 % (0 cd/klm at $\geq 90^\circ$) — no light above the horizontal, suitable for IDA protected areas and observatories.
Environmental zones	Sizing to CIE 150 and EN 13201 (zones E1 to E4): façade luminance, glare and upward flux verified in DIALux study.
Scheduled switch-off	Astronomical switch-off and dimming, per-district scenarios: no street lit at full power when deserted.

NOCTURNAL WILDLIFE

Adapted spectrum	1800 K and 2700 K versions: warm wavelengths attract far fewer insects than cool white sources or discharge lamps.
Zero UV	LEDs emit no UVA / UVB radiation — insects are not attracted to the source, even at close range.
LiDAR dimming	Lighting on demand: outside sessions, intensity drops to 10 – 30 %, limiting the attraction effect and preserving nocturnal flight cycles.
Migratory birds	Beam directed downwards and warm CCTs: remotely scheduled reduction during heavy migration nights (Mar – May, Sep – Nov).
Logarithmic dimming	Smooth 0.1 – 100 % transitions compliant with EN 62386 — no flashes or abrupt gradients disrupting the navigation of insects and bats.

ECODESIGN & LIFE CYCLE

EU ecodesign	Compliant with Regulation (EU) 2019/2020: $PstLM \leq 1$ · $SVM \leq 0.4$ · light sources and drivers replaceable without tools.
Longevity	L90B10 $\geq 100\,000$ h — nearly 25 years at 4 200 h/yr: no relamping, zero lamp waste, zero mercury contamination.
CO2 avoided	Replacement of 2 000 HPS 150 W luminaires with D-SLS-14 50 W with LidarMesh: approx. 312 t of CO2 avoided per year.

RG0

photobiological group — EN 62471

0 UVA

no ultraviolet radiation

1800 K

warm “wildlife” spectrum option

References & project study

References: CIE 150 (limiting light pollution) · EN 13201 and UNI 11248 (lighting classes) · Ecodesign Regulation (EU) 2019/2020 · International Dark-Sky Association · BirdLife International and LPO for migration corridors. Obtrusive light study supplied with every project.

PHOTOMETRY · « DARK-LIGHT » INDIRECT REFLECTOR

MIRO-SILVER indirect reflector (inter-reflection) — reflectance $\geq 98\%$, ULOR 0 %

The source is recessed and not visible beyond 70°: the flux is redirected to the road by inter-reflection on a high-reflectance satin aluminium reflector ($\rho \geq 98\%$, ISO 7668 / DIN 5036-3) with structured anti-iridescence surface, then passes through double-sided anti-reflective tempered glass ($\tau_v > 98\%$). No light is emitted above the horizontal: ULOR 0 % (0 cd/klm at $\geq 90^\circ$), class G*6, TI $\leq 10\%$.

MEASURED PHOTOMETRIC CURVE — REFLECTOR OPTICAL BLOCK

Goniophotometric measurement of the optical unit with aluminium reflector — optical platform common to all three LOTUS sizes, validated by test. Flux fully directed downwards, wide distribution along the road axis (C0 – C180).

Optics	Aluminium reflector $\geq 98\%$ · tempered glass
Measured module	143 × 54 mm
C planes	— C0 – C180 — C90 – C270
ULOR	0.00 % — no flux towards the sky
DLOR	86.26 % — optical block efficiency
Unit	cd/klm (intensity per 1 000 lm)

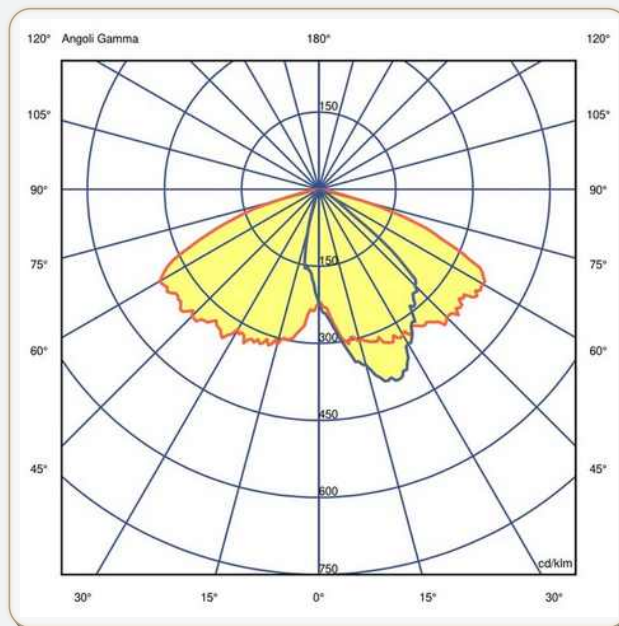
0,00 %

ULOR

86,26 %

Measured DLOR

LDT / IES files and full measurement report supplied on request.



Measurement conditions

Data measured in accordance with **UNI EN 13032-1** and **IES LM-79-08**. The following tables give, for each wattage, the luminaire flux and efficacy at $T_q = 25^\circ\text{C}$ (laboratory) and at $t_a = 50^\circ\text{C}$ (operating ambient). Calculation chain: LUSO-5050AUX source LED CSP × thermal factor 92 % ($T_s 85^\circ\text{C}$) × adopted optical efficiency 78 % (reflector optical unit 86.26 % measured) × driver $\geq 93\%$ = **187 lm/W** luminaire at $T_q 25^\circ\text{C}$ · 180 lm/W at $t_a 50^\circ\text{C}$; tolerance $\pm 7\%$. LDT / IES files per reference and per CCT, LM-79 reports with standard optic on request.

A

Road asymmetric
standard — classes M and C

B

Wide asymmetric
wide carriageways, junctions

C

Pedestrian / cycle
class P, soft-mobility paths

$\geq 95\%$

optic efficiency

ULOR 0 %

class G*6 · TI $\leq 10\%$

EXEMPT

photobiological group EN 62471

PHOTOMETRIC TABLES · 5000 K & 4000 K · CRI 70

REFERENCE	POWER* W · Tq 25 °C	EFFICACY lm/W · Tq 25 °C	FLUX* lm · Tq 25 °C	POWER* W · ta 50 °C	EFFICACY lm/W · ta 50 °C	FLUX* lm · ta 50 °C
-----------	------------------------	-----------------------------	------------------------	------------------------	-----------------------------	------------------------

5000 K · CRI 70 · Vin 230 V AC · modes F / DA / DAC · Rev. 10/2026

Tq 25 °C: laboratory | ta 50 °C: operating ambient

D-SLS-14-40-20A	20	187	3 740	20	180	3 600
D-SLS-14-40-30A	30	187	5 610	30	180	5 400
D-SLS-14-50-40A	40	187	7 480	40	180	7 200
D-SLS-14-50-50A	50	187	9 350	50	180	9 000
D-SLS-14-50-60A	60	187	11 220	60	180	10 800
D-SLS-14-100-80A	80	187	14 960	80	180	14 400
D-SLS-14-100-100A	100	187	18 700	100	180	18 000
D-SLS-14-200-120A	120	187	22 440	120	180	21 600
D-SLS-14-200-150A	150	187	28 050	150	180	27 000
D-SLS-14-200-180A	180	187	33 660	180	180	32 400
D-SLS-14-200-200A	200	187	37 400	200	180	36 000
D-SLS-14-250-250A	250	187	46 750	250	180	45 000

REFERENCE	POWER* W · Tq 25 °C	EFFICACY lm/W · Tq 25 °C	FLUX* lm · Tq 25 °C	POWER* W · ta 50 °C	EFFICACY lm/W · ta 50 °C	FLUX* lm · ta 50 °C
-----------	------------------------	-----------------------------	------------------------	------------------------	-----------------------------	------------------------

4000 K · CRI 70 · Vin 230 V AC · modes F / DA / DAC · Rev. 10/2026

Tq 25 °C: laboratory | ta 50 °C: operating ambient

D-SLS-14-40-20A	20	187	3 740	20	180	3 600
D-SLS-14-40-30A	30	187	5 610	30	180	5 400
D-SLS-14-50-40A	40	187	7 480	40	180	7 200
D-SLS-14-50-50A	50	187	9 350	50	180	9 000
D-SLS-14-50-60A	60	187	11 220	60	180	10 800
D-SLS-14-100-80A	80	187	14 960	80	180	14 400
D-SLS-14-100-100A	100	187	18 700	100	180	18 000
D-SLS-14-200-120A	120	187	22 440	120	180	21 600
D-SLS-14-200-150A	150	187	28 050	150	180	27 000
D-SLS-14-200-180A	180	187	33 660	180	180	32 400
D-SLS-14-200-200A	200	187	37 400	200	180	36 000
D-SLS-14-250-250A	250	187	46 750	250	180	45 000

* Luminaire power and flux measured at Vin = 230 V AC, modes F / DA / DAC, CRI 70. CCT/CRI order codes: **750** and **740**. Respective efficacies: 187 / 187 lm/W at Tq 25 °C and 180 / 180 lm/W at ta 50 °C. The highlighted row is the 80 W reference configuration. Other CRI (80, 90, 99) and Tunable White: flux on request — values derived from the source × optic × driver chain, tolerance ±7 %.

PHOTOMETRIC TABLES · 3000 K & 2700 K · CRI 70

REFERENCE	POWER* W · Tq 25 °C	EFFICACY lm/W · Tq 25 °C	FLUX* lm · Tq 25 °C	POWER* W · ta 50 °C	EFFICACY lm/W · ta 50 °C	FLUX* lm · ta 50 °C
-----------	------------------------	-----------------------------	------------------------	------------------------	-----------------------------	------------------------

3000 K · CRI 70 · Vin 230 V AC · modes F / DA / DAC · Rev. 10/2026

Tq 25 °C: laboratory | ta 50 °C: operating ambient

D-SLS-14-40-20A	20	177	3 540	20	170	3 400
D-SLS-14-40-30A	30	177	5 310	30	170	5 100
D-SLS-14-50-40A	40	177	7 080	40	170	6 800
D-SLS-14-50-50A	50	177	8 850	50	170	8 500
D-SLS-14-50-60A	60	177	10 620	60	170	10 200
D-SLS-14-100-80A	80	177	14 160	80	170	13 600
D-SLS-14-100-100A	100	177	17 700	100	170	17 000
D-SLS-14-200-120A	120	177	21 240	120	170	20 400
D-SLS-14-200-150A	150	177	26 550	150	170	25 500
D-SLS-14-200-180A	180	177	31 860	180	170	30 600
D-SLS-14-200-200A	200	177	35 400	200	170	34 000
D-SLS-14-250-250A	250	177	44 250	250	170	42 500

REFERENCE	POWER* W · Tq 25 °C	EFFICACY lm/W · Tq 25 °C	FLUX* lm · Tq 25 °C	POWER* W · ta 50 °C	EFFICACY lm/W · ta 50 °C	FLUX* lm · ta 50 °C
-----------	------------------------	-----------------------------	------------------------	------------------------	-----------------------------	------------------------

2700 K · CRI 70 · Vin 230 V AC · modes F / DA / DAC · Rev. 10/2026

Tq 25 °C: laboratory | ta 50 °C: operating ambient

D-SLS-14-40-20A	20	171	3 420	20	165	3 300
D-SLS-14-40-30A	30	171	5 130	30	165	4 950
D-SLS-14-50-40A	40	171	6 840	40	165	6 600
D-SLS-14-50-50A	50	171	8 550	50	165	8 250
D-SLS-14-50-60A	60	171	10 260	60	165	9 900
D-SLS-14-100-80A	80	171	13 680	80	165	13 200
D-SLS-14-100-100A	100	171	17 100	100	165	16 500
D-SLS-14-200-120A	120	171	20 520	120	165	19 800
D-SLS-14-200-150A	150	171	25 650	150	165	24 750
D-SLS-14-200-180A	180	171	30 780	180	165	29 700
D-SLS-14-200-200A	200	171	34 200	200	165	33 000
D-SLS-14-250-250A	250	171	42 750	250	165	41 250

* Luminaire power and flux measured at Vin = 230 V AC, modes F / DA / DAC, CRI 70. CCT/CRI order codes: **730** and **727**. Respective efficacies: 177 / 171 lm/W at Tq 25 °C and 170 / 165 lm/W at ta 50 °C. The highlighted row is the 80 W reference configuration. Other CRI (80, 90, 99) and Tunable White: flux on request — values derived from the source × optic × driver chain, tolerance ±7 %.

PHOTOMETRIC TABLE 1800 K & REPLACEMENT EQUIVALENCES

REFERENCE	POWER* W · Tq 25 °C	EFFICACY lm/W · Tq 25 °C	FLUX* lm · Tq 25 °C	POWER* W · ta 50 °C	EFFICACY lm/W · ta 50 °C	FLUX* lm · ta 50 °C
1800 K · CRI 70 · Vin 230 V AC · modes F / DA / DAC · Rev. 10/2026				Tq 25 °C: laboratory ta 50 °C: operating ambient		
D-SLS-14-40-20A	20	140	2 800	20	135	2 700
D-SLS-14-40-30A	30	140	4 200	30	135	4 050
D-SLS-14-50-40A	40	140	5 600	40	135	5 400
D-SLS-14-50-50A	50	140	7 000	50	135	6 750
D-SLS-14-50-60A	60	140	8 400	60	135	8 100
D-SLS-14-100-80A	80	140	11 200	80	135	10 800
D-SLS-14-100-100A	100	140	14 000	100	135	13 500
D-SLS-14-200-120A	120	140	16 800	120	135	16 200
D-SLS-14-200-150A	150	140	21 000	150	135	20 250
D-SLS-14-200-180A	180	140	25 200	180	135	24 300
D-SLS-14-200-200A	200	140	28 000	200	135	27 000
D-SLS-14-250-250A	250	140	35 000	250	135	33 750

REPLACEMENT EQUIVALENCES — DISCHARGE LAMPS → D-SLS-14

Existing lamp	System power	Equivalent LOTUS	Luminaire flux (4000 K)	Energy saving
Mercury vapour 80 W	90 W	D-SLS-14-40-30A	5 610 lm	-67 %
HPS 70 W	84 W	D-SLS-14-50-40A	7 480 lm	-52 %
HPS 100 W	115 W	D-SLS-14-50-50A	9 350 lm	-57 %
HPS 150 W	170 W	D-SLS-14-50-60A	11 220 lm	-65 %
HPS 250 W	275 W	D-SLS-14-100-80A	14 960 lm	-71 %
Metal halide 250 W	280 W	D-SLS-14-100-100A	18 700 lm	-64 %
HPS 400 W	430 W	D-SLS-14-200-150A	28 050 lm	-65 %

Indicative equivalences at maintained illuminance (EN 13201) — to be confirmed by a DIALux / Relux study accounting for road geometry, mounting height and the chosen maintenance factor.

* Luminaire power and flux measured at Vin = 230 V AC, modes F / DA / DAC, CRI 70. CCT/CRI order code: 718. Efficacy of 140 lm/W at Tq 25 °C and 135 lm/W at ta 50 °C. The highlighted row is the 80 W reference configuration. Other CRI (80, 90, 99) and Tunable White: flux on request.

EN 13201

illuminance level maintained

-52 → -71 %

energy on retrofit

DIALux / Relux

study supplied with every project

CODING · BUILD AN ORDER REFERENCE

Reference structure

D-SLS-14

Series

100

Size

80

Power

A

Photometry

740

CCT · CRI

LD

Option

Example: *D-SLS-14-100-80A-740-LD* = LOTUS 2, 80 W, photometry A, 4000 K / CRI 70, with LidarMesh remote management node.

Model & size

ENEC-certified type **D-SLS-a-b-cd** — a = series (14: LOTUS road), b = size, c = wattage, d = photometry A / B / C.

Sizes: **40 · 50** (LOTUS 3) · **100** (LOTUS 2) · **200 · 250** (LOTUS 1).

Power

Certified types: 20 · 30 · 40 · 50 · 60 · 80 · 100 · 120 · 150 · 180 · 200 · 250 W (ENEC certificate HN 69290740)

Luminaire power at $V_{in} = 230 \text{ V AC } (\pm 5 \%)$.

CCT · CRI

718 · 727 · 730 · 740 · 750 | 827 · 830 · 840 | 927 · 930 · 940

First digit = CRI / 10, next two = CCT / 100 — e.g. 940 = 4000 K / CRI 90 · **TW** = Tunable White 2200 – 6500 K (D4i + DT8)

Options

LD LiDAR node · **SP20** external 20 kV SPD · **W10** 10-year warranty · **MAR** C5 anti-corrosion · **A12** 12 V auxiliary · **M33 / M76 Ø** adaptors · **TW** Tunable White · **RALxxxx** colour

Combinable options, appended in this order at the end of the reference.

Reference examples

D-SLS-14-100-80A-740-LD-SP20 80 W · 4000 K · photometry A · LiDAR node · external 20 kV SPD.

D-SLS-14-40-30A-727-MAR 30 W · 2700 K · photometry A · C5 seaside treatment.

D-SLS-14-250-250A-TW-LD-W10 250 W · Tunable White 2200 – 6500 K · LiDAR node · 10-year warranty.

Quotes & purchase orders

Each reference fully describes the configuration — to be copied as is onto quotes, purchase orders and price schedules. For a specific configuration (special photometry, intermediate wattage, adaptation to an existing support), the D-SLS design office issues a dedicated reference after survey: sa@d-sls.com.

WARRANTY & SERVICES



7-year warranty

Standard **7-year** warranty on the complete luminaire — LED module, optic, driver and SPD — for a compliant installation and an operating ambient temperature ≤ 50 °C.



10-year extension (W10)

On project registration at commissioning: warranty extended to **10 years**, including flux maintenance (L90) and spare-part availability.



Lighting studies

DIALux / Relux photometric study to EN 13201 / UNI 11248, LDT / IES files, LED LM-80 reports and calculation notes for tender files (LM-79 reports in progress).



Factory configuration

LED current (NFC), DA / DAC dimming profiles, DALI-2 addresses, OTP thresholds and D4i parameters factory-set per project sheet — luminaires ready to install.



LidarMesh commissioning

Integration of light points into **LidarMesh CMS**, scenario creation, operator training and remote assistance.



Spare parts & after-sales

Zhaga Book 18 LED modules, drivers, glass and gaskets available throughout the warranty period — on-site replacement without special tools.

Sales & technical contact

E-mail

sa@d-sls.com

WhatsApp

+39 333 765 0586

Web

www.d-sls.it

Head office

D-SLS SRL — Via Bocchetto 6, 20123 Milano (MI), Italia — P.IVA IT14260650966

PROJECT ROADMAP · FROM ORDER TO OPERATION

Survey & study

01

DIALux / Relux · EN 13201 classes · project sheet

Validation

02

references · options · RAL colour

Manufacturing

03

factory driver configuration · NFC

Installation

04

ready to install · Ø60 mm · M33 / M76 adaptors

Commissioning

05

LidarMesh CMS · scenarios · training

Operation

06

7 → 10 years · after-sales parts available



LOTUS D-SLS-14 • 20-250 W

D-SLS SRL — Digital Smart Lighting Solutions

Via Bocchetto 6 • 20123 Milano (MI) • Italia • P.IVA IT14260650966
sa@d-sls.com • WhatsApp +39 333 765 0586 • www.d-sls.it

LOTUS Catalogue D-SLS-14 2026 • Rev. 10/2026 • Non-contractual document: D-SLS reserves the right to modify specifications without notice.



www.d-sls.it



Direct WhatsApp



sa@d-sls.com