

OUTDOOR LED LIGHTING · PROTECTION & CONTROL

Interfaces that keep the lights on.

NEMA receptacles, Zhaga Book-18 sockets and surge protection devices — designed and manufactured in-house, verified to ANSI and IEC standards, and deployed across 50+ countries.

NEMA C136.41

ZHAGA BOOK-18

SPD TYPE 1 / 2

IP66 / IP67



15+

YEARS IN OUTDOOR LIGHTING

50+

COUNTRIES SERVED

2

PRODUCTION SITES

ISO 9001

QUALITY MANAGEMENT

100%

OUTGOING INSPECTION

WHO WE ARE



A specialist manufacturer

The interface between a luminaire and the grid.

XGW has spent **15+ years** doing a narrow thing properly — the connectors, sockets and surge protectors that decide whether a street light lasts three years or twenty.

Everything we ship is designed, tooled and assembled in our own facilities in Shenzhen and Huizhou. We run injection moulding, SMT, terminal plating and final assembly under one quality system, which is why we can hold ANSI C136.41 dimensional tolerance and Zhaga Book-18 interface geometry across production volumes without drift.

We are a Zhaga Consortium participant and build to the standards our customers

are audited against — ANSI C136.41, IEC 61643-11, UL 1449, ENEC and RoHS / REACH. Test reports, material declarations and PPAP-style documentation are available on request.

Today our components sit in municipal road lighting, highway and tunnel projects, port and industrial areas, and smart-city deployments across Europe, the Middle East, South America, Africa and Asia-Pacific.


15+

YEARS

50+

COUNTRIES

6

 PRODUCT
LINES

01

NEMA Receptacles

3 / 5 / 7-pin, ANSI C136.41 & C136.10

02

Zhaga Book-18

Sockets and D4i-ready controllers

03

Surge Protection

Type 1 / Type 2 / Type 1+2 to 20 kV

04

Photocontrols

Twist-lock, DALI and 0–10 V dimming

05

OEM / ODM

Tooling, plating and private-label programmes

WHY XGW



Six reasons the specification stays with us.

Not a spec sheet. The engineering decisions behind a 20-year service life outdoors.



Gold-plated signal terminals

Phosphor-bronze contacts, nickel underplated and gold flashed to ASTM B 488. Stable contact resistance after 20 years of thermal cycling — no fretting, no intermittent dimming faults.

ASTM B 488



UV-stabilised, 20-year materials

UV-stabilised polycarbonate enclosure over a high-impact PBT base. Verified against 1 000 h QUV-B exposure with no measurable chalking, cracking or loss of dielectric strength.

QUV-B 1000 H



ANSI-certified geometry

Receptacle dimensions held to ANSI C136.41 so any compliant photocontrol or Zhaga module seats and locks correctly. Third-party interchangeability checked, not assumed.

ANSI C136.41



Protection up to 20 kV

GDT + MOV hybrid with a thermal disconnect. Suppresses the MOV leakage current that ages conventional SPDs, and fails safe rather than failing hot.

IEC 61643-11



Tool-free, fast installation

Twist-bar enclosure and centre-ground-hole design let a contractor finish a pole-top swap in under a minute — the labour saving on a 10 000-point rollout is the real number.

UNDER 60 S



Interchangeable by design

One socket accepts a Ø40 mm photocell, a Ø80 mm LEX-M module or a Zhaga controller. Upgrade from stand-alone to networked without retooling the luminaire.

ZHAGA BOOK-18

COMPLIANCE



Certified to the standards you are audited against.

Full test reports, material declarations and compliance files available under NDA on request.

CE EU CONFORMITY	RoHS HAZARDOUS SUBSTANCES	REACH CHEMICAL SAFETY
ISO 9001 QUALITY MANAGEMENT	UL 1449 SPD RECOGNITION	IP66 INGRESS PROTECTION
IP67 IMMERSION RATED	IK08 IMPACT RESISTANCE	ENEC EUROPEAN LIGHTING

ANSI C136.41	Dimming & smart receptacle interface
ANSI C136.10	Twist-lock photocontrol, 3-pin
Zhaga Book-18	Smart interface between luminaire & module
Zhaga Book-20	Data reporting & asset identification
IEC 61643-11	Surge protective devices, low-voltage
UL 1449	SPD safety, 4th edition
IEC 60529	IP enclosure classification
IEC 62262	IK mechanical impact code
ASTM B 488	Electrodeposited gold plating
DALI-2 / IEC 62386	Digital dimming interface

Documentation pack. Every part number ships with a datasheet, installation instruction, RoHS / REACH declaration and an IP test report. Type-test reports to IEC 61643-11 (1.2/50 μ s & 8/20 μ s combination wave) and QUV weathering data are provided for project tenders.

INSIDE THE FACTORY



Two sites, one quality system.

Shenzhen — assembly, test & logistics. Huizhou —
injection moulding, plating and SMT.

01

Injection workshop

In-house tooling for PC enclosures and PBT bases. Material lots traceable to resin batch, with melt-flow verification before each run.

02

Terminal plating line

Controlled nickel underplate and gold flash to ASTM B 488. Plating thickness measured by XRF on every batch.

03

SMT & electronics

PCB assembly for Zhaga controllers and smart receptacles. AOI plus in-circuit test on 100% of boards.

04

SPD assembly

GDT + MOV stacks assembled in a humidity-controlled cell. Every unit receives a surge impulse test before potting.

05

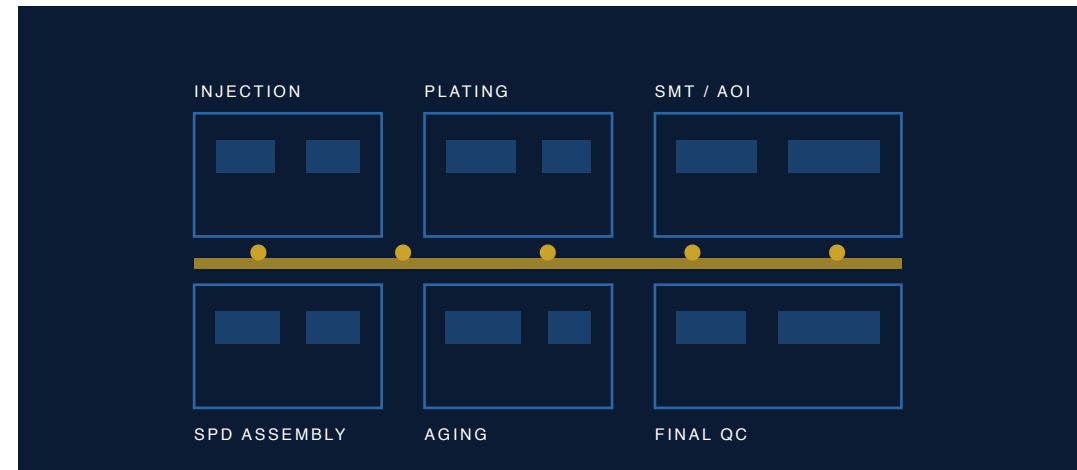
Aging & burn-in

Powered aging at rated load and elevated temperature. Thermal-fuse and over-temperature behaviour verified on sample basis per lot.

06

Final QC & packing

Dimensional go/no-go to ANSI C136.41, dielectric withstand, IP water-spray sample test, then outgoing AQL inspection.



100%

OUTGOING INSPECTION

100%

DIELECTRIC WITHSTAND TEST

AQL 0.65

SAMPLING STANDARD

ISO 9001

CERTIFIED QMS

Traceability. Every carton carries a lot code linking back to resin batch, plating bath, board revision and test station. Retained samples are held for 24 months for failure analysis.

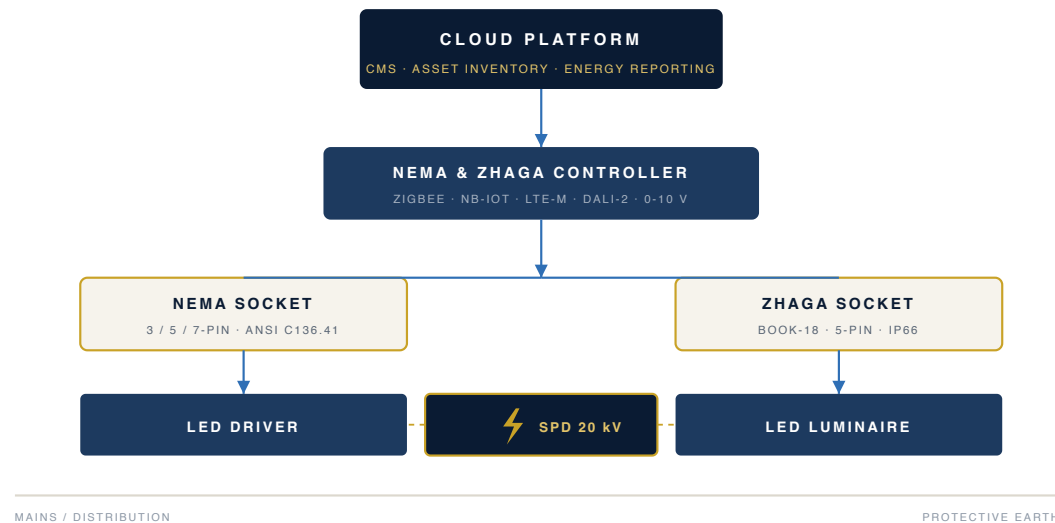
One interface, from the grid to the cloud.

NEMA and Zhaga platforms share the same protection and control backbone.

DUAL PLATFORM SUPPORT

Fit either standard on the same luminaire.

A single housing accepts a NEMA twist-lock control or a Zhaga Book-18 module, so a luminaire platform can be sold into both North American and European specifications without a second tooling investment.



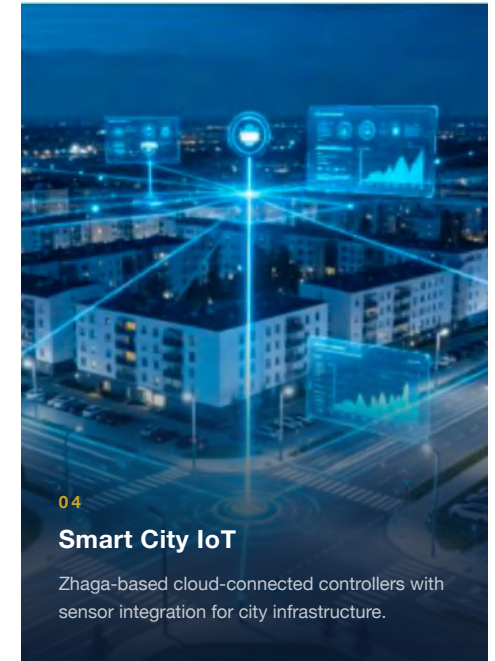
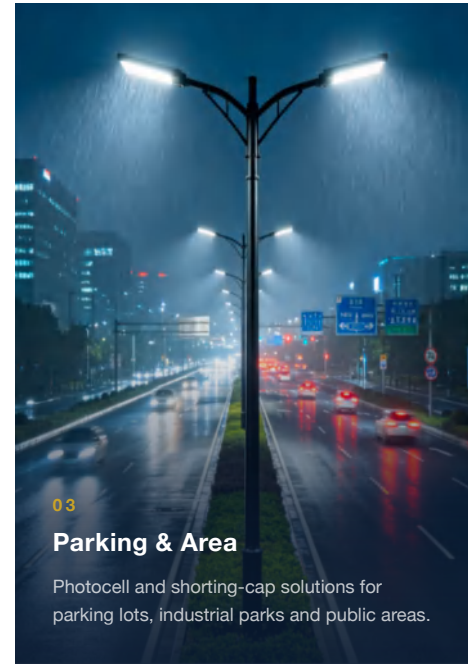
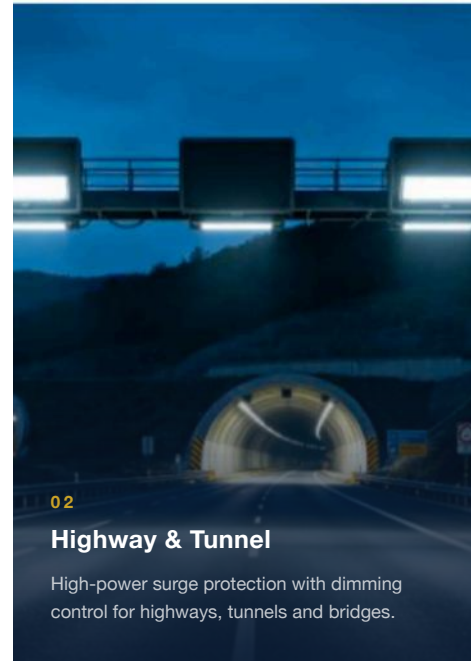
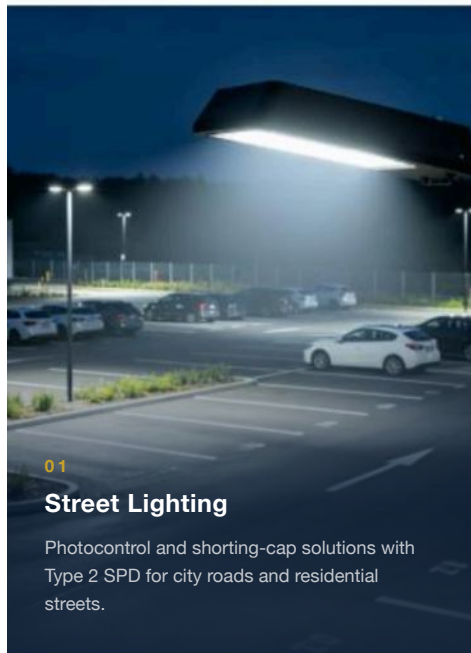
Control interface	NEMA / Zhaga
Dimming	DALI-2 · 0–10 V
Connectivity	Zigbee · NB-IoT
Surge protection	up to 20 kV / 10 kA
Protection modes	L-N · L-G · N-G
Operating range	–40 ... +70 °C
Ingress rating	IP66 · IP67 opt.
Service life	20 years design

Protection at every level. SPD is applied at the pole base, the luminaire inlet and across the control electronics — coordinated so the upstream device takes the energy and the downstream unit protects the driver.

WHERE IT IS INSTALLED

Four environments, one interface family.

From a car-park photocell to a highway tunnel with networked dimming and Type 1 protection.



MUNICIPAL ROAD LIGHTING

HIGHWAY & TUNNEL

PORT & INDUSTRIAL

CAMPUS & CAR PARK

SMART CITY RETROFIT

UTILITY STREET-LIGHT PROGRAMMES

NEMA Photocontrol Receptacle Series

ANSI C136.41 · NON-ROTATABLE
XE-3B · XE-5B · XE-7B

- IP66 WATERPROOF
- UV RESISTANT
- 40 ... +70 °C
- ANSI C136.41
- GOLD-PLATED CONTACTS
- NON-ROTATABLE BASE



3-PIN · TWIST LOCK

XE-3B

Classic switched receptacle for photocell control. Line, load and neutral with no dimming circuit — the lowest-cost way to keep a luminaire standard-compliant.

Voltage	120–347 V
Current	6 A / 1 800 W
Type	Twist-lock
Pins	3
Standard	ANSI C136.41

SWITCHED ON / OFF CONTROL



5-PIN · POWER MONITORING

XE-5B

Adds a dimming pair plus power-metering conductors, so the luminaire reports real consumption back to the CMS without an extra gateway.

Voltage	120–347 V
Current	10 A
Type	Smart receptacle
Pins	5
Feature	Power monitoring

0–10 V DIMMING + METERING



7-PIN · FULL SMART CONTROL

XE-7B

Full ANSI C136.41 implementation with DALI and sensor bus. Supports networked dimming, motion sensing and asset data on a single interface.

Voltage	120–480 V
Current	10 A
Type	Full smart
Pins	7
Feature	Dimming + sensing

DALI · SENSOR BUS · 480 V

JL-250F + SPD Module



20 KV / 10 KA

10 KV / 5 KA

DIAGNOSTIC LED

CENTRE GROUND HOLE

A 7-pin smart receptacle with the surge protective device built into the same housing. One part number replaces a receptacle plus a separate SPD — fewer seals, fewer failure points, faster pole-top assembly.

Protection to 20 kV / 10 kA

Two levels available — 10 kV/5 kA and 20 kV/10 kA — to match the exposure class of the site.

Differential + common mode

Protects L-N, L-G and N-G simultaneously, covering both surge paths seen on long street-lighting runs.

Tested on 1.2/50 μ s & 8/20 μ s

Verified on the IEC 61643-11 combination wave, not a single-wave bench figure.

GDT + MOV hybrid

The gas tube blocks the leakage current that ages a bare MOV — the single biggest cause of premature SPD failure.

Thermal fuse, over-temperature cut-off

Disconnects safely at end of life. Diagnostic LED shows protection status at a glance from the ground.

Gold-plated terminals, ASTM B 488

Phosphor bronze, nickel underplated, gold flashed. Stable contact resistance over 20 years outdoors.

Flat, low wind-resistance profile

Reduced sail area and a mechanical handshake design that makes rotation easier with gloved hands.

High-strength PC enclosure

UV stabilised, impact resistant, with a copper plug and centre ground hole for reliable earthing.

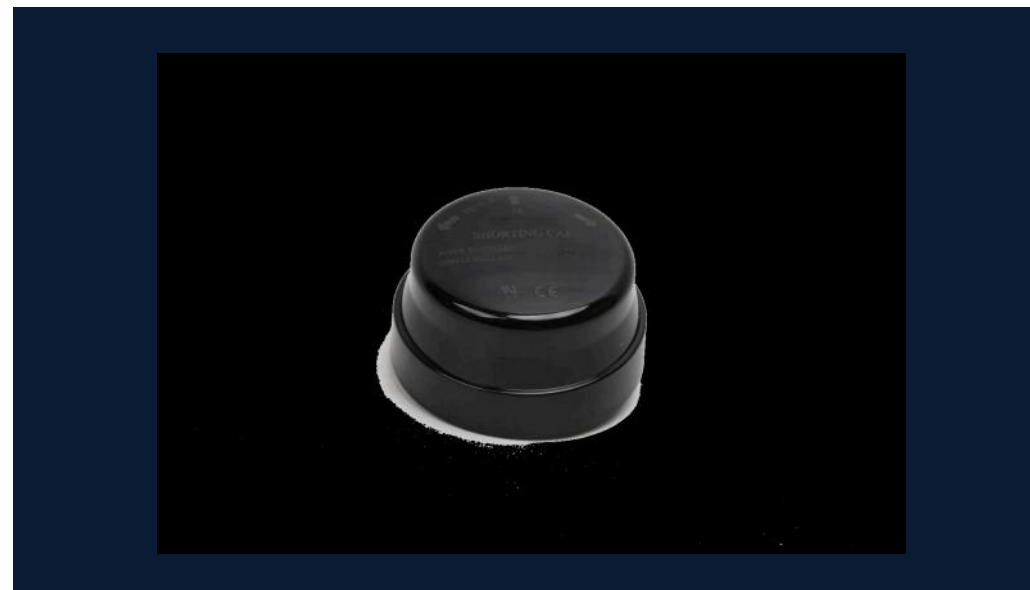
NEMA Photocontrol & Short Cap

XE-2B • XE-2A



XE-2B — Twist-lock photocontrol

- ▶ **MOV 40 kA surge arrester built in**
On-board protection means no separate SPD is needed for standard street-lighting duty.
- ▶ **DALI dimming**
Constant on/off and stepped dimming profiles configurable for municipal curfews.
- ▶ **IR-filtered phototransistor**
Ignores the luminaire's own light output — no flicker loop, no false dawn switch-off.
- ▶ **IP65 ready, IP67 optional**
Optional sandwich cover extends service life in coastal and high-solar-load regions.
- ▶ **Multi-voltage application**
One part number covers 120–347 V, simplifying stocking across markets.



XE-2A — Shorting cap

- ▶ **Safe maintenance bypass**
Shorts a twist-lock photocontrol receptacle while the control is removed for service.
- ▶ **Fits ANSI C136.10**
Applicable with both ANSI C136.10 and C136.41 receptacle geometries.
- ▶ **IP66 when installed**
Maintains the luminaire's ingress rating while the photocontrol is off the pole.
- ▶ **UV-stabilised PC, PBT base**
High-impact base resists the torque crews actually apply in the field.
- ▶ **Twist-bar enclosure**
Easy to grip and turn with work gloves, in the dark, from a bucket truck.

Zhaga Book-18 Interface



Book-18 socket

Standardised interface

Geometry defined by Zhaga Book-18 — any compliant module seats and seals correctly.

IP66 with no mounting screws

Advanced sealing removes four screws and four potential leak paths from the assembly.

Single integrated gasket

Seals to luminaire and module at once — measurably shorter assembly time per luminaire.

Mounts up, down or sideways

Flexible orientation without compromising the ingress rating.

Ø40 mm to Ø80 mm on one seat

Same connection interface for a compact photocell or a full LEX-M management module.

ZHAGA BOOK-18 INTELLIGENT CONTROLLERS

Three tiers, one socket.



STANDARD

JL-701A

Interface	5-pin Zhaga
Dimming	DALI-2 ready
Voltage	24 V DC
Rating	IP66



ENHANCED

JL-711A

Interface	5-pin Zhaga
Dimming	0–10 V / DALI
Voltage	120–277 V
Rating	IP66



PREMIUM

JL-712

Interface	5-pin Zhaga
Sensors	Light + motion
Connectivity	Zigbee / NB-IoT
Rating	IP67

Future-proof the luminaire. A Zhaga socket fitted today accepts a photocell now and a networked sensor module later. No rewiring, no new tooling, no re-certification of the housing.

Surge Protection Devices



IEC 61643-11 · UL 1449 · TYPE 1 / 2 / 1+2

MS · MK · ML series

TYPE 2

MS Series



Models	MS-10KV / MS-20KV
Imax	10 kV / 5 kA
Modes	L-N, L-PE
Mounting	Luminaire internal
Standard	IEC 61643-11

Application: Street light. Installed inside the luminaire or pole junction box to protect the LED driver from induced transients.

TYPE 1+2

MK Series



Models	MK-20KV / MK-10KV
Imax	20 kV / 10 kA
Modes	L-N, L-PE, N-PE
Mounting	Panel / DIN rail
Standard	IEC 61643-11 · UL 1449

Application: Critical LED and control electronics. Combined Type 1+2 for distribution boards feeding lighting circuits.

TYPE 1

ML Series



Models	ML-20KV / ML-10KV
Imax	20 kV / 10 kA
Modes	L-N, L-PE
Mounting	Pole-top
Standard	IEC 61643-11

Application: Pole-top mounting. Handles direct lightning current at the point of exposure, before it reaches the luminaire.

Tested, not asserted. All devices are type-tested on the 1.2/50 μ s & 8/20 μ s combination wave to IEC 61643-11, with UL 1449 recognition on the MK series. GDT + MOV hybrids include a thermal disconnect, so end-of-life is a controlled open circuit — never a short to earth.



REFERENCE DEPLOYMENTS

In service, in more than 50 countries.

Representative project types. Customer names withheld under NDA — full references available on request.

GERMANY

Municipal street lighting retrofit

Zhaga Book-18 sockets and DALI-2 controllers across a city-wide LED retrofit, with energy reporting back to the municipal CMS.

Scope	Zhaga + CMS
Rating	IP66

SPAIN

Highway & tunnel lighting

Type 1+2 surge protection with stepped dimming control on motorway approaches and tunnel portals.

Scope	SPD + dimming
Rating	20 kV / 10 kA

SAUDI ARABIA

Smart city infrastructure

Cloud-connected Zhaga controllers with light and motion sensing, specified for high ambient temperature operation.

Scope	NB-IoT sensors
Rating	IP67 · +70 °C

CHILE

Road lighting programme

NEMA 7-pin receptacles with integrated SPD on a national road lighting rollout across coastal and high-altitude zones.

Scope	NEMA + SPD
Rating	347 V

SOUTH AFRICA

Municipal & area lighting

Photocontrol and shorting-cap programme with Type 2 protection, prioritising surge resilience on a lightning-exposed grid.

Scope	Photocell + SPD
Rating	10 kV / 5 kA

50+

COUNTRIES SERVED

5

CONTINENTS

1M+

UNITS IN SERVICE

15+

YEARS EXPORTING

0

FIELD RECALLS

LET'S SPECIFY IT TOGETHER

Send us your luminaire drawing. We'll send back a compliant interface.

Samples ship within 5 working days. Full documentation packs, test reports and PPAP-style files are available for project tenders.

WEBSITE

www.xgwtech.com

Product data, downloads & certification files

E-MAIL

info@xgwtech.com

Quotations, samples & technical enquiries

PROGRAMMES

OEM · ODM · Private label

Tooling, plating and packaging to your specification