D-SERIES

Advanced
LIGHTING TECHNOLOGIES

D-SERIES

HOLOPHANE®
An Acuity Brands Company

Advanced
LIGHTING TECHNOLOGIES

D-SERIES

The modern styling of the **D-Series** is striking yet unobtrusive - making a bold, progressive statement as it blends seamlessly with its environment. **D-Series** takes all the benefits of LED technology and moulds it into a high performance, high efficacy and long life area lighting luminaire.

With its exceptional 'finned' thermal management system, **D-Series** is capable of delivering over 100,000 hours LED module life. Offering a wide range of lumen packages and optical distributions, **D-Series** delivers optimised lighting application designs.

With the integrated ZD4i compatibility **D-Series** delivers a controllable luminaire that helps you realise energy consumption goals and demonstrate environmental responsibility. With its unique optics placed below each LED it ensures light is delivered where it needs to be, providing a uniform Nightime Friendly environment with minimal light pollution.

DSX1

Applications

- Amenity Areas
- Car Parks
- Retail Parks
- Truck Yards
- Warehousing Exterior Areas

Optics / Light Source

- Lumen packages ranging from 2,000 - 50,000 in 3 different luminaire variants
- Fully soak tested light engines ensuring LED reliability and eliminating early failures.
- 2700K/3000K/4000K colour temperature.
- RA 70.

TM66 CEAM-Make Rating

Rating: 2.6 Excellent Circularity.

2.6 EXCELLENT TM66 Assured Score

Approvals

Complies with EN60598

CE UK CA

IP IP65 luminaire and LED optic

Ta -40˚C to +40˚C

![Advanced Lighting Technologies logo]

AN ENVIABLE REPUTATION
THROUGHOUT THE WORLD

125 years of Innovation & Excellence

When Holophane was founded in 1896 in London, headed by Pelham Trotter, it marked the start of an incredible history that has now seen Holophane become a global business revered throughout the world for its expertise, quality, innovation and excellence in lighting.

Holophane's first product was the famous patented globe in 'white' or 'rose crystal' that sold for around 2 shilling (10p). Today, Holophane continues this proud tradition with our values deeply rooted in the dedication to creating luminaires, with exceptional lighting performance, innovative patented technologies, and delivering added customer value beyond illumination.

What does it mean for our customers?

A Trusted & Reliable UK Manufacturer

From Royalty all the way to small residential projects, Holophane has been a trusted manufacturer over the decades for all manner of projects. You can be sure you are in good hands and can rely on the collective knowledge and expertise we have gathered since our inception in 1896.

Development of Innovative Products

As part of our design philosophy, Holophane are always trying to push boundaries in the development of unique product innovations. As such many of our luminaires hold UK and International design patents.

Products That Deliver Added Value

In today's world, sustainability and added value are becoming increasingly important. As such our products and solutions go further than just lighting. Many of our innovations include integrated smart connected solutions to help customers achieve further energy savings and can also enable remote monitoring.

Delivering excellent customer service

Over our 125-year history we have always been committed to delivering the best service to our customers and supporting in a myriad of ways to ensure the best possible outcomes. This goes as far as offering a free lighting design service to one-off products/ solutions to meet customers unique needs.

THE D-SERIES RANGE
3 LUMINAIRES, ONE COMPLETE PROJECT SOLUTION

The **D-Series** range has been designed not only for super optical quality and performance but also to have a cohesive family aesthetic.

Available in 3 luminaire sizes, the D-Series range offers a full outdoor lighting solution for any environment.

DSX2

30,000 - 50,000 lumens
8m mounting heights and above

DSX1

22,000 - 36,000 lumens
between 6m and 10m mounting heights

DSX0

2,000 to 22,000 lumens
up to 6m mounting heights

PRODUCT FEATURES

ZD4i ready

0% ULOR

Enhanced Performance

The **D-Series** range features the very latest LED technologies. In conjunction with silicone optics this delivers the best lighting performance coupled with low-energy consumption and high efficacy. This also means D-Series meets BREEAM compliance.

Class leading optics

The **D-Series** range has the flexibility of 4 optimised optical distributions. Through using individual bubble optics per LED D-Series controls the light exactly where it's needed. This results in a luminaire that provides best in class spacings and uniformity.

Easy maintenance

The **D-Series** range has an easily accessible gear compartment ensuring fast and simple component changes if required.

DSX1

DSX2

Connected

The **D-Series** range is ZD4i compatible when specified with the 4-pin Zhaga socket options (TZ01 or TZ02) enabling a future proof luminaire that can be used in conjunction with Controlux Air or a expanding ecosystem of third party devices and sensors.

Note: Post Top Bracket for The D-Series range is sold separately. Please enquire with your Holophane representative for the full range of mounting options.

Advanced
LIGHTING TECHNOLOGIES

DSXO

Advanced
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The reliability and performance of an LED luminaire is dependent on a combination of factors. Keeping the temperature of the drivers, LEDs and electronic components as low as possible is critical to maintaining the luminaire's efficiency.

One of Holophane's key luminaire design principles ensures that the **D-Series** family utilises all three heat transfer principles of conduction, convection and radiation.

Conduction

Taking heat away from electronic components, LEDs and drivers.

The **D-Series** range has drivers and LEDs that are mounted directly to thermally efficient, LM6 Aluminium to promote efficient transfer of heat from these critical components.

Convection

From luminaire heat sink chassis and LED module to ambient air.

The **D-Series** range is designed to have drivers and LEDs that are mounted separately to avoid compound heating of components. This ensures critical components are kept as cool as possible to ensure long system life.

THERMAL
MANAGEMENT

Radiation

Surface finish and form designed to maximise heat radiation.

The **D-Series** range incorporates a large finned casting design which increases the total surface area of the luminaire and in turn helps to promote cooling through radiation.
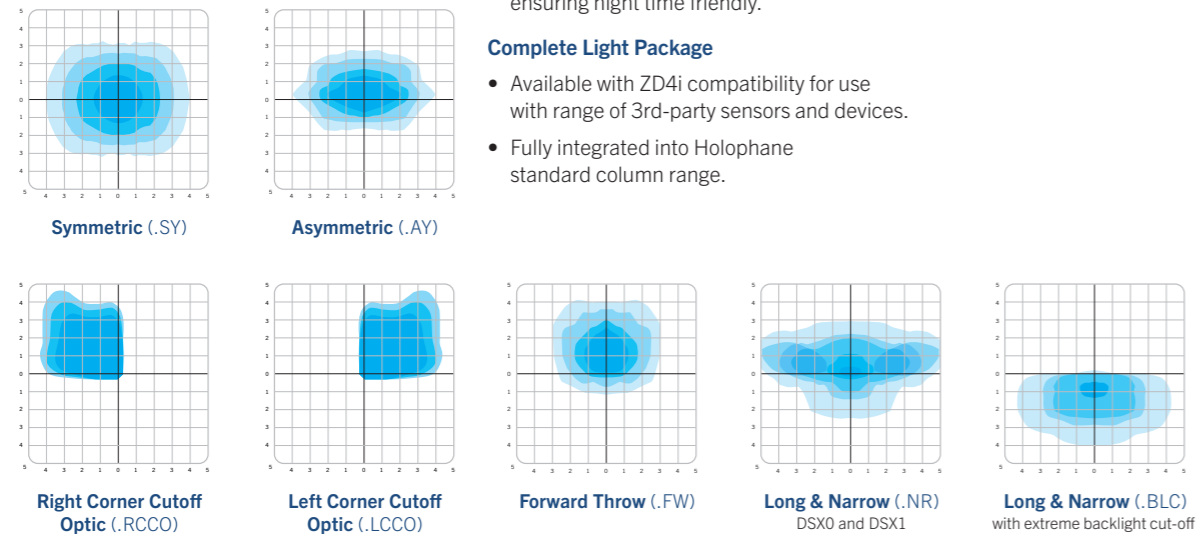
SPECIFICATION

Specification

Single-piece die-cast aluminium housing, that conforms to EN1706 AC-46500, with integral heat sink fins to optimise thermal management through conductive cooling. LED modules are IP65 with individual lenses, and high grade aluminium housing to transfer heat away from the LEDs and dissipate through the finned housing for cooling. The LED driver is mounted in direct contact with the finned housing for cooling to promote low operating temperature and long system life. Housing is completely sealed against moisture and environmental contaminants (IP65). Installation is via the integrated mounting block and integral arm that facilitate a quick and easy installation.

3000K or warmer must be selected for IDA dark sky certification.

Light Distributions

Symmetric (.SY)   Asymmetric (.AY)

Right Corner Cutoff Optic (.RCCO)   Left Corner Cutoff Optic (.LCCO)   Forward Throw (.FW)   Long & Narrow (.NR) DSX0 and DSX1   Long & Narrow (.BLC) with extreme backlight cut-off

Features and benefits

System Longevity

- The D-Series's diecast aluminium housing acts as its primary heat sink. Its longitudinal fins employ conductive cooling techniques to dissipate heat away from the key LED components and driver that extends the life of the luminaire.
- Light engine(s) consist of either 20 or 30 high efficacy LEDs (subject to chosen configuration) mounted to a metal-core circuit board to maximize heat dissipation and promote long life.

Exceptional Performance

- Offering six lumen packages ranging from 2000 lm to 50,000 lm with efficiencies of up to 143 lpw (Lumens Per Watts).
- Four optimised distributions (Symmetric, asymmetric, forward throw and long and narrow) delivered by quality LEDs and bespoke UV stabilised optics.
- LED light engines with 0% ULOR ensuring night time friendly.

Complete Light Package

- Available with ZD4i compatibility for use with range of 3rd-party sensors and devices.
- Fully integrated into Holophane standard column range.

DIMENSIONS & PERFORMANCE

Typical luminaire performance

Configuration	Delivered Lumens	Circuit Power (W)	Driver output current (mA)	Luminaire total number of LEDs	Luminaire efficacy (Lm/W)
DSX0.1.LA02X	2,000	15	450	20	133
DSX0.1.LA03X	3,000	21	650	20	143
DSX0.1.LA04X	4,000	29	450	20	138
DSX0.1.LA05X	5,000	37	570	20	135
DSX0.1.LA06X	6,000	45	700	20	133
DSX0.1.LA08X	8,000	64	990	20	125
DSX0.1.LA10X	10,000	81	1250	20	123
DSX0.1.LA11X	11,000	88	700	40	133
DSX0.1.LA13X	13,000	107	850	40	127
DSX0.1.LA15X	15,000	133	1050	40	120
DSX0.4.LA16X	16,000	114	932	40	140
DSX0.4.LA18X	18,000	130	1050	40	138
DSX0.4.LA22X	22,000	169	1385	40	130
DSX1.2.LA30X	30,000	286	1400	60	105
DSX1.4.LA36X	36,000	256	1400	60	128
DSX2.2.LA30X	30,000	282	1050	80	115
DSX2.2.LA36X	36,000	328	1000	100	121
DSX2.4.LA40X	40,000	268	883	100	136
DSX2.4.LA45X	45,000	339	1016	100	133
DSX2.4.LA50X	50,000	386	1157	100	130

Weight (with control gear)

DSX 0   8.0 kg
DSX 1   12.2 kg
DSX 2   15.0 kg

Windage (effective projected area)

DSX 0   0.09 m²
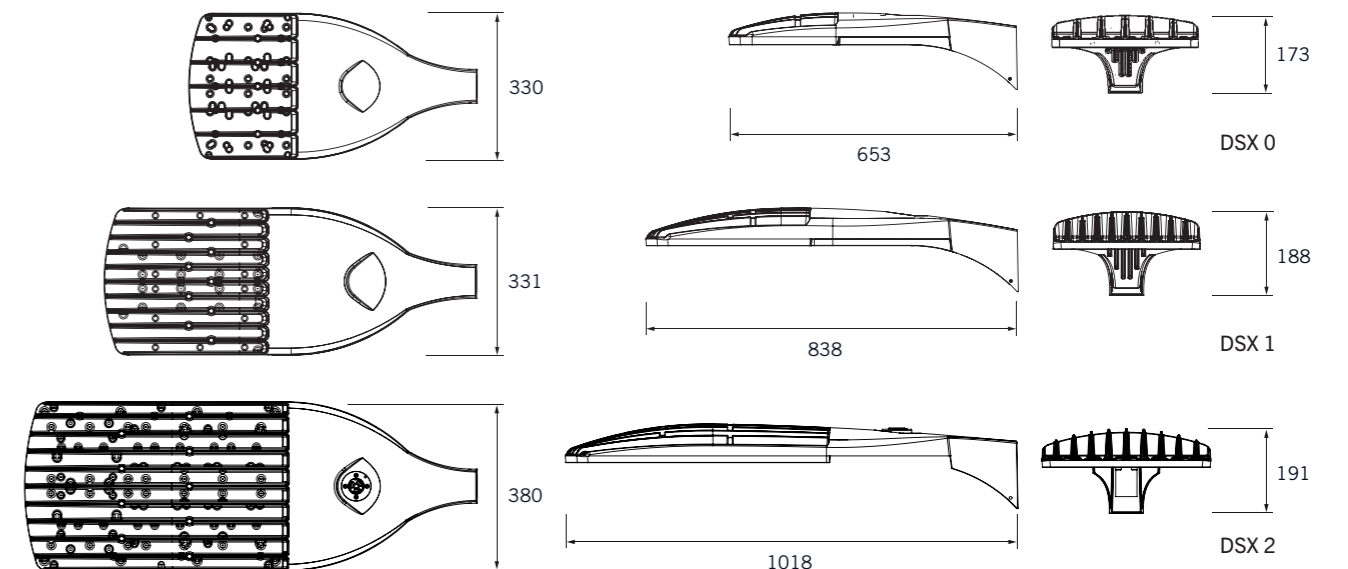DSX 1   0.09 m²
DSX 2   0.10 m²

TA

-40ºC to 40ºC

X - Denotes colour temperature (replace X with 2 for 2700K, 3 for 3000K and 4 for 4000K)

Note: Data is correct at time of print. * For other life metric data in line with IEC PAS62722-2-1 and 62717 contact your Holophane Representative for details.

dimensions in mm

330

331

380

653   173   DSX 0

838   188   DSX 1

1018   191   DSX 2

DSX2

Page 18 — DSX0 D-Series 1 Luminaire

Luminaire (required)

Code	
DSX0	D-Series 1 Luminaire

Lamp Type (required)

Code	
.LA02X	LED light engine producing c.2,000 lm
.LA03X	LED light engine producing c.3,000 lm
.LA04X	LED light engine producing c.4,000 lm
.LA05X	LED light engine producing c.5,000 lm
.LA06X	LED light engine producing c.6,000 lm
.LA08X	LED light engine producing c.8,000 lm
.LA10X[1]	LED light engine producing c.10,000 lm
.LA11X	LED light engine producing c.11,000 lm
.LA13X	LED light engine producing c.13,000 lm
.LA15X	LED light engine producing c.15,000 lm
.LA16X	LED light engine producing c.16,000 lm
.LA18X	LED light engine producing c.18,000 lm
.LA22X[1]	LED light engine producing c.22,000 lm

Replace 'X' in lamp type code with either:
2 for 2700K
3 for 3000K
4 for 4000K

[1]TZ01, TZ02 & TZ03 Not available with lumen codes LA10X and LA22X

Distribution (required)

Code	
.SY	Symmetric light distribution
.AY	Asymmetric light distribution
.FW	Forward Throw distribution
.NR	Long and Narrow distribution
.BLC	Long and Narrow distribution with extreme backlight cut-off
.RCCO	Right Corner Cutoff
.LCCO	Left Corner Cutoff

Colour (required)

Code	
.C1	Smooth White (RAL9016)
.C4	Graphite (RAL 7011)
.C6	Smooth Grey (RAL7035)
.C7	Black (RAL9005)
.C9	Metallic Silver (RAL9006)
.RAL****	RAL Colour (Customer choice)

Voltage Electrical Class (option)

Code	
.CII	Class II

Photocell (option)

Code	
.TSZ	Complete with miniature 70 lux factory fitted photocell. (Zodion SS12)
.T1	Complete with NEMA socket. (To accept standard NEMA Photocell, available from Holophane).
.T5	Complete with 5-pin dimming NEMA ANSI C136.41 socket (photocell/node supplied by others) without locking top
.T7	Complete with 7-pin dimming NEMA ANSI C136.41 socket (photocell/node supplied by others) without locking top
.T5T	Complete with 5-pin dimming NEMA ANSI C136.41 socket (photocell/node supplied by others) with weather proof locking top
.T7T	Complete with 7-pin dimming NEMA ANSI C136.41 socket (photocell/node supplied by others) with weather proof locking top
.TZ01	Complete with 4-Pin Zhaga Socket - 'Top' (suitable photocell/node supplied by others) with weather proof locking cap
.TZ02	Complete with 4-Pin Zhaga Socket - 'Bottom' (suitable photocell/node supplied by others) with weather proof locking cap
.TZ03	Complete with 4-Pin Zhaga Socket - 'Top & bottom' (suitable photocell/node supplied by others) with weather proof locking cap

Controls (option)

Code	
.PH1	PIR on a Zhaga socket, suitable up to 12m. Dims to 30% after 10 minutes of inactivity - switches off after further 10 minutes. Remotely re-programmable with accessory HEL.PRG (purchased separately). Requires option TZ02 or TZ03.
.PH2	Groupable PIR on a Zhaga socket, suitable up to 12m. Dims to 30% after 10 minutes of inactivity - switches off after further 10 minutes. Remotely re-programmable with accessory HEL.PRG.G (purchased separately). Requires option TZ02 or TZ03.
.CA	Wireless lighting node (top socket) for use with Holophane Controlux Air System. Requires option TZ01 or TZ03. (Includes subscription package for two years)
.CAP	Wireless lighting node (top socket) & PIR (bottom socket) for use with Holophane Controlux Air System. Requires option TTZ03. (Includes subscription package for two years). Suitable up to 12m.

Control Gear (option)

Code	
.CL7	Programmed to deliver 70% of the initial lumens over the life of the luminaire
.CL8	Programmed to deliver 80% of the initial lumens over the life of the luminaire
.CL9	Programmed to deliver 90% of the initial lumens over the life of the luminaire
.CL****	Customer specified programming

Dimming outputs (option)

Code	
.LRD	DALI
.LRT56	pre-set to dim to 50% between 12am to 6am
.LRT66	pre-set to dim to 60% between 12am to 6am
.LRT76	pre-set to dim to 70% between 12am to 6am
.LRT******	Customer specified pre-set dimming

Paint finish (option)

Code	
.C	Enhanced Paint Finish

Example

DSX0	.LA02X	.AY	.C7	.CII	.TSZ	.CL7	.LRD	.C

Page 19 — DSX1 / DSX2 D-Series Luminaire

Luminaire (required)

Code	
DSX1	D-Series 1 Luminaire
DSX2	D-Series 2 Luminaire

Lamp Type (required)

Code	
.LA22X*	LED light engine producing c 22,000 lumens
.LA30X+	LED light engine producing c 30,000 lumens
.LA36X**	LED light engine producing c 36,000 lumens
.LA40X+	LED light engine producing c 36,000 lumens
.LA45X**	LED light engine producing c 45,000 lumens
.LA50X**	LED light engine producing c 50,000 lumens

With a nominal 3000K or 4000K colour temperature.
Replace X with 2 for 2700K, 3 for 3000K, 4 for 4000K
TZ01, TZ02 & TZ03 Not available with lumen codes LA30X & LA36X when configured with DSX1. Also not available with lumen codes LA45X and LA50X

Distribution (required)

Code	
.AY	Asymmetric
.SY	Symmetric
.FW	Forward throw
.BLC	Long and Narrow distribution with extreme backlight cut-off
.NR	Long and Narrow distribution

Colour (required)

Code	
.C1	Smooth White (RAL9016)
.C4	Graphite (RAL 7011)
.C6	Smooth Grey (RAL7035)
.C7	Black (RAL9005)
.C9	Metallic Silver (RAL9006)
.RAL****	RAL Colour (Customer choice)

Photocell (option)

Code	
.T	Mini Photocell
.T1	Complete with NEMA socket (To accept standard NEMA Photocell, available from Holophane)
.T5	Complete with 5-pin dimming NEMA ANSI C136.41 socket (suitable photocell/node supplied by others) without locking top
.T7	Complete with 7-pin dimming NEMA ANSI C136.41 socket (suitable photocell/node supplied by others) without locking top
.T5T	Complete with 5-pin dimming NEMA ANSI C136.41 socket (photocell/node supplied by others) with weather proof locking top
.T7T	Complete with 7-pin dimming NEMA ANSI C136.41 socket (photocell/node supplied by others) with weather proof locking top
.TZ01	Complete with 4-Pin Zhaga Socket - Top (suitable photocell/node supplied by others) with weather proof locking top*†
.TZ02	Complete with 4-Pin Zhaga Socket - Bottom (suitable node/presence detector supplied by others) with weather proof locking top*†
.TZ03	Complete with 4-Pin Zhaga Socket - 'Top & bottom' (suitable photocell/node supplied by others) with weather proof locking cap.

Control Gear (option)

Code	
.CL7	Programmed to deliver 70% of the initial lumens over the life of the luminaire
.CL8	Programmed to deliver 80% of the initial lumens over the life of the luminaire
.CL9	Programmed to deliver 90% of the initial lumens over the life of the luminaire
.CL****	Customer specified programming

Controls (option)

Code	
.PH1	PIR on a Zhaga socket, suitable up to 12m. Dims to 30% after 10 minutes of inactivity - switches off after further 10 minutes. Remotely re-programmable with accessory HEL.PRG (purchased separately). (Requires option TZ02 or TZ03).
.PH2	Groupable PIR on a Zhaga socket, suitable up to 12m. Dims to 30% after 10 minutes of inactivity - switches off after further 10 minutes. Remotely re-programmable with accessory HEL.PRG.G (purchased separately). (Requires option TZ02 or TZ03).
.CA	Wireless lighting node (top socket) for use with Holophane Controlux Air System (Includes subscription package for two years). (Requires option TZ01 or TZ03).
.CAP	Wireless lighting node (top socket) & PIR (bottom socket) for use with Holophane Controlux Air System. (Includes subscription package for two years). Suitable up to 12m. (Requires option TZ03).

Dimming outputs (option)

Code	
.LRD	DALI
.LRT56	Pre-set to dim to 50% between 12am to 6am
.LRT66	Pre-set to dim to 60% between 12am to 6am
.LRT76	Pre-set to dim to 70% between 12am to 6am

Paint finish (option)

Code	
.C	Enhanced Paint Finish

Example

DSX1	.LA30X	.AY	.C7	.T1	.CL7	.PH1	.LRT56	.C

*DSX1 only   +DSX1 & 2   **DSX2 only

Lumen data is considered to be representative of the configuration shown, and may vary, with a tolerance on flux of +/- 7% (typical of LED manufacturers data) and luminaire power of +/- 5%.

SUSTAINABILITY
ENVIRONMENTAL

EarthLIGHT

AN ECO DESIGN THAT IS SUSTAINABLE WITHIN.

Our products are just one part of our sustainability efforts, with the 4 pillars of our eco-design which constantly push us to create the most sustainable products that reduce our own environmental impact.

Pillar One
Sustainable
we make more with less

How are we doing it?

- To make use of recycled materials where we can
- Reducing unnecessary materials, weight and component count
- Only using components that can be used in other luminaries
- Reduce labour time and energy usage during the manufacturing process

Pillar Two
Scalable
we tailor the product for application

We offer:

- Products that are scalable to accommodate new features
- Form-factor sizing for each application to help reduce material waste
- Flexible mounting options

Pillar Three
Serviceable
we ensure product longevity

All of our products are:

- Upgradable
- Simple in design
- Ensure easy access to internal components
- Spares are easily available to enable customer servicing and repair

Pillar Four
Separable
we are committed to global sustainability

Our products are:

- Environmentally friendly
- Recyclable
- Easy to disassemble, making materials used easy to separate

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CIRCULAR ECONOMY TM66

Holophane's ambitious sustainability efforts have set us on the path to obtaining several accreditations with the LIA and CIBSE's TM66 which allows us to rate our products and follow a method that designs out waste.

The traditional resource sonsumption model is linear, where raw material is collected to make products, then often thrown away once they have served their purpose.

CIBSE's TM66 allows us to rate our products and follow a method to design out waste, maximise value and improve maintenance so that our luminaires can be repaired, recycled and re-used.

CIBSE

2.6 EXCELLENT
CIRCULAR ECONOMY ASSESSMENT METHOD

TM66 Assured Score

2.5 to 4.0	Excellent circularity
1.5 to 2.5	Definite/substantial progress to circularity
0.5 to 1.5	Some circular economy functionality
0 to 0.5	Very poor circular economy performance

CONTROLS
COMPATIBLE WITH CONTROLUX AIR

Controlux Air helps users transform their existing infrastructure into a wireless platform. With Controlux Air, you have full remote configuration or your site with an intuitive user interface which is map based and delivers accurate/update reporting.

Wireless Controller

Wireless communication, lighting control and external sensor interface.

External antenna allowing communication with 'Motion Sensor' and 'Wireless Gateway'.

Creates a wireless mesh type network when used with the 'Wireless Gateway'.

Available with option codes .CA or .CAP

Motion Sensor

Motion sensor and wireless communication triggering 1 to 10 luminaires (with Integral Wireless Controller) upon detection (user configurable).

Wireless communication with 'Gateway'.

Detects pedestrians, cyclists and cars range (range: 2.5 -75 mph)

Range: up to 15m on each side, 9m front and 3m behind at a mounting height of 5m (max).

Gateway

Wireless network and server communication (via SIM Card).

Suitable for pole, wall or inside cabinet mounting.

One Gateway required for up to 200 devices (Motion Sensors or Integrated Light Controllers)

with a range of up to 1km open field range.

Links all devices to web-based Customer Interface for remote management of luminaires and devices.
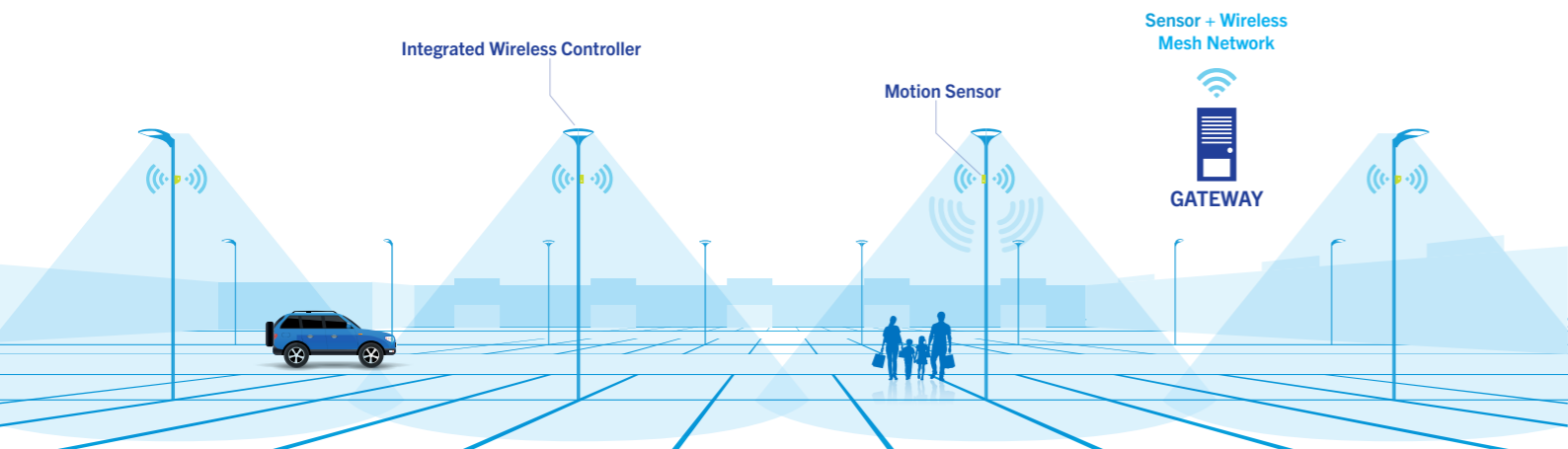
Integrated Wireless Controller

Motion Sensor

Sensor + Wireless Mesh Network

GATEWAY

Intuitive user interface
Gain in-depth insights into every single aspect of your lighting system. Smart analytics and simple charts will help you make the right decision about your lighting infrastructure.

Automatic failure reports
Lighting-related system faults are identified, and automatic failure reports are sent in real-time. This results in optimized maintenance, better planning, reduced costs and extended luminaire life.

Power metering
Dedicated hardware provides precise energy metering, which is converted into detailed energy usage and savings reports.

Accurate real-time data
Generation of analytics per an individual light point or their groups. Available data includes: notifications about lighting-related faults, number of triggers per light point, generated energy savings, heatmaps, and more.

Map-based visualizations
Outdoor lighting points are represented in a graphic interface on Google Maps, coordinated with GPS technology, which enables you to locate, monitor and control individual light points with ease.
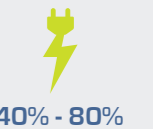
Continuous support
CityManager receives periodic security and feature upgrades. We do this to ensure optimum functionality and system performance.

Financial Benefits

By installing Controlux Air controls systems, you benefit financially, thanks to energy savings and reduced energy costs.

Energy savings of up to 80%

40% - 80%

- By using dynamic lighting, it is possible to generate energy savings of 40-80%, depending on the usage environment
- In dense urban environments, the Controlux Air solution has the potential to generate energy savings of 40-50% (in this case, actual savings depend on the traffic intensity)

Maintenance costs savings up to 50%

20% - 50%

- Automatic failure reporting
- No need for expensive visual inspections
- Extended luminaire lifetime
- Excellent preventive maintenance

⊃-SERIES

HOLOPHANE®

An Acuity Brands Company