

DW Windsor
L I G H T I N G

style with performance



KIRIUM

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The Kirium range delivers class-leading road lighting performance within a modular design to facilitate future upgradability as technology evolves.

Offering exceptional thermal performance, Kirium has been engineered to optimise the latest LED light sources and meet Local Authority requirements for improved efficiency and control, with reduced energy and maintenance costs.

Kirium's unique design and range of options enables tailored LED and drive current specifications to perfectly match project requirements; ensuring energy targets are met within financially viable payback periods.

Within the same attractively proportioned body to provide continuity throughout your scheme, Kirium is available with one, two or three light engines, a choice of three optical distributions and two colour temperatures (neutral white 4000K or warm white 3000K). Kirium achieves the residential and minor road P classes, through city centre and conflict area C classes to high traffic road lighting M classes.

Key advantages

- Unobtrusive design complementary to road lighting applications
- Exceptional thermal performance; product design optimised to ensure cool running of LEDs
- LED modules and temperature sensitive electronics are thermally separated; optimising efficiency for maximum driver life
- Class-leading optical performance; wider column spacings, better uniformity, more efficient schemes
- LED modules with no secondary glazing; minimising optical losses
- Separate gear and entry compartments; reduces risk of error at point of installation (access to the driver electronics is not required during installation)
- High efficiency, up to 127 lm/W (Kirium 3 : 700mA)
- Energy savings of up to 73% achievable (when compared to HID light sources)
- Choice of control options for further energy savings
- Single driver operation for all wattages across the Kirium range
- L70 > 75,000 hours (Kirium 3 : 700mA) to 93,000 hours (Kirium 1 : 700mA)
- Lightweight, low windage design with universal mounting adapter for easy retrofit onto existing columns and brackets
- Tool-less quick-release driver tray for ease of maintenance
- 98% recyclable

As technology improves we will continue to develop Kirium to provide the most energy efficient performance LED lighting solution.



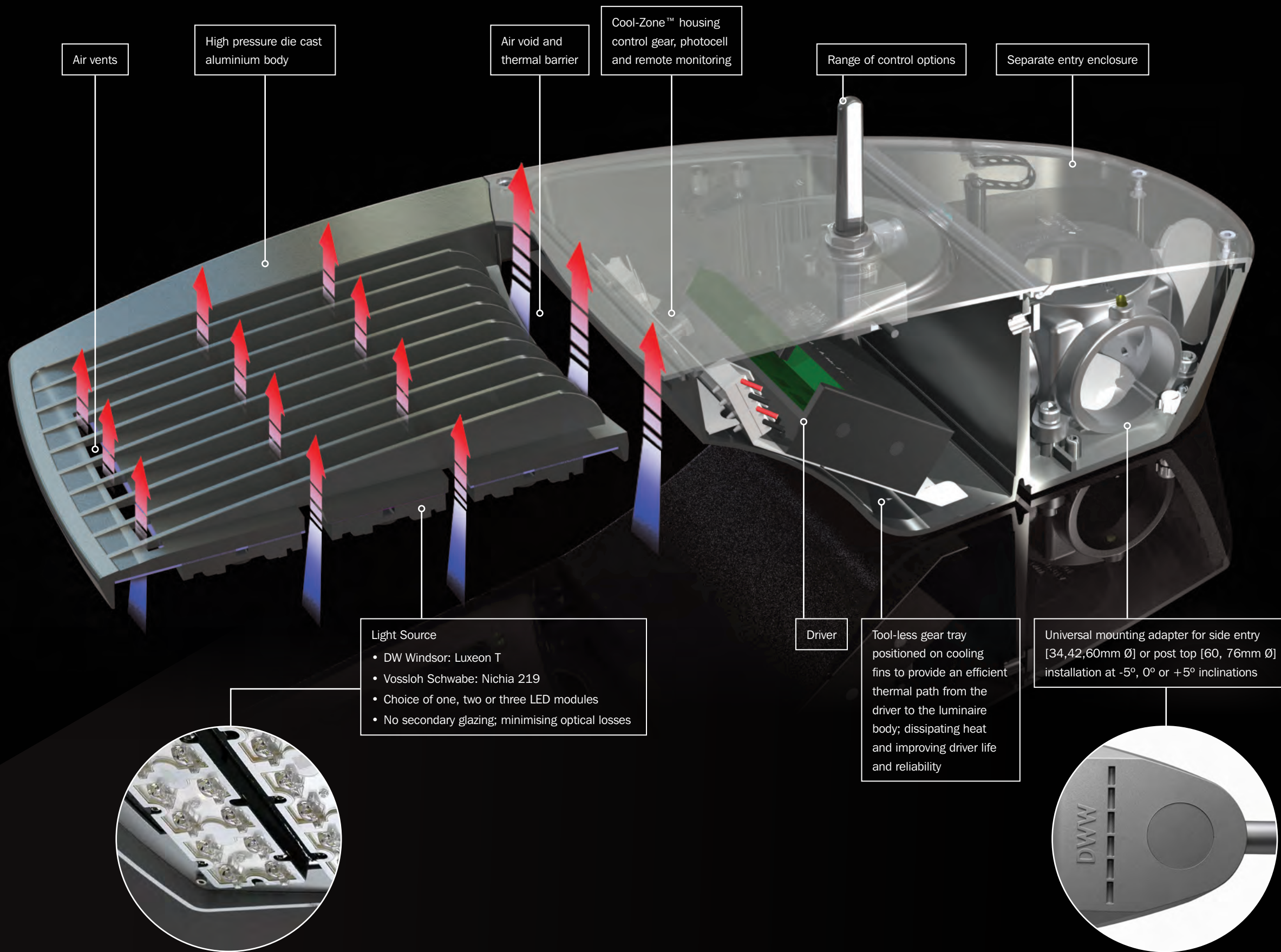
Kirium 1



Kirium 2

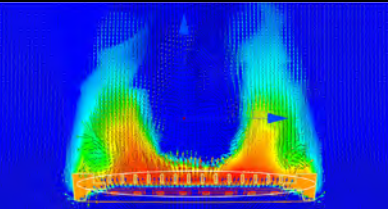
Kirium 3

EXCEPTIONAL THERMAL MANAGEMENT

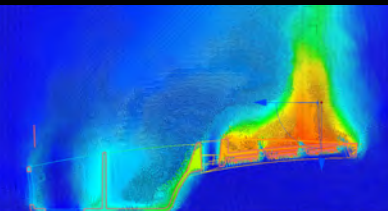


Thermal Management

Kirium has been engineered from its conception to provide exceptional thermal performance. Its superior thermal capabilities have been developed using advanced thermal simulation (CFD software) and validated through extensive testing. Kirium features air vents between the LED modules to facilitate air flow and aid heat dissipation.



CFD generated image (front-view)



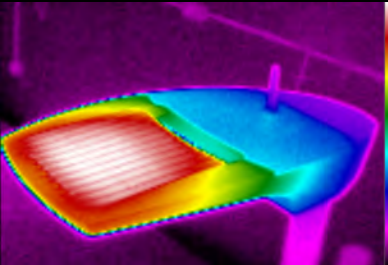
CFD generated image (side-view)

Cool-Zone™ thermal isolation

An air void between the LEDs and gear enclosure acts as an extremely effective thermal barrier, protecting the temperature-sensitive electronics which are isolated within the Cool-Zone™.

Separated from the heat source (LEDs) the electronic components operate significantly below permitted temperatures resulting in improved long-term performance and increased life expectancy of the driver.

It is widely regarded that a 10°C reduction in the temperature of the driver can increase service life by approximately 50%.



Thermal image demonstrating the Cool-Zone™ effectiveness

PERFORMANCE

Lumen output

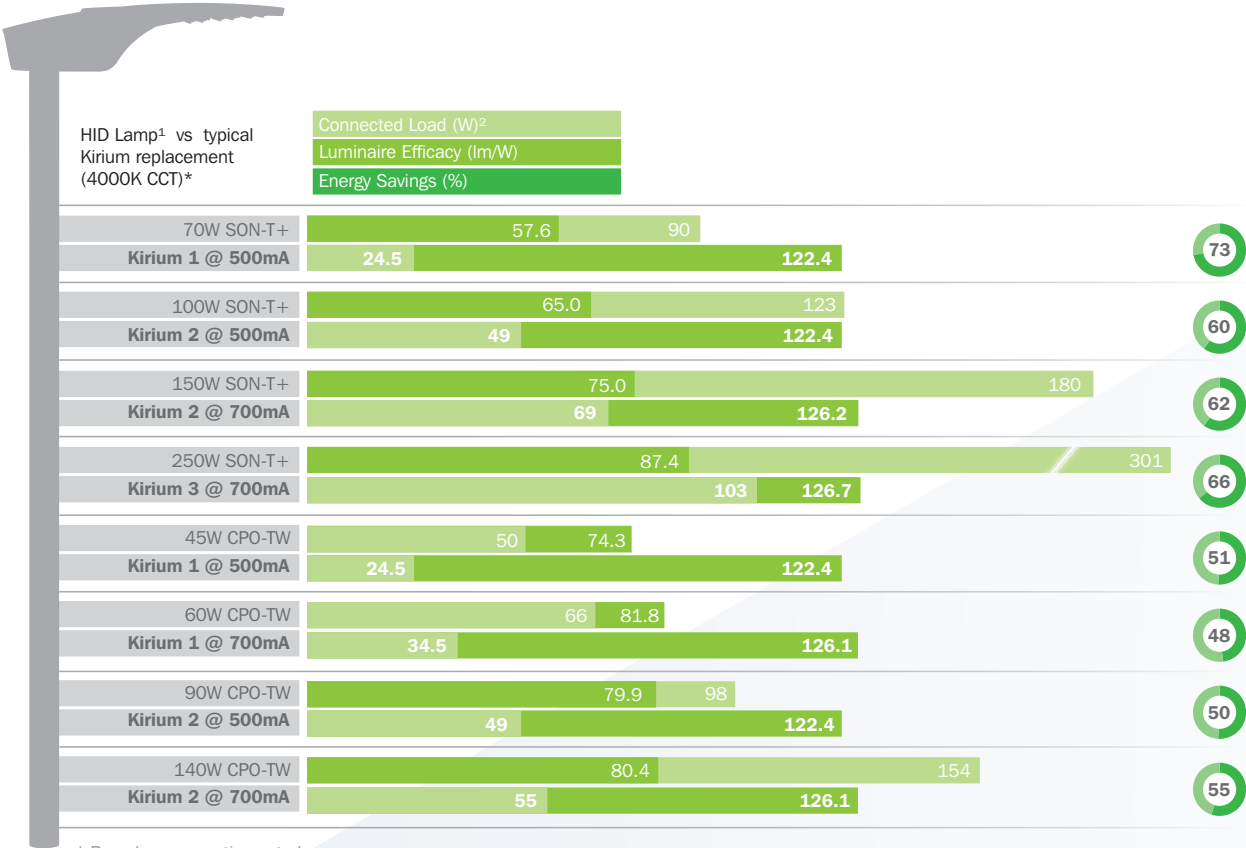
Kirium 4000K

Drive Current	Kirium 1 15 LED	Kirium 2 30 LED	Kirium 3 45 LED
350mA	2100	4200	6300
connected load	17.25W	34.5W	51.5W
500mA	3000	6000	9000
connected load	24.5W	49W	74W
700mA	4350	8700	13050
connected load	34.5W	69W	103W
1000mA	5400	10800	16200
connected load	49W	98W	148W

Kirium 3000K

Drive Current	Kirium 1 15 LED	Kirium 2 30 LED	Kirium 3 45 LED
350mA	1950	3900	5850
connected load	17.25W	34.5W	51.5W
500mA	2700	5400	8100
connected load	24.5W	49W	74W
700mA	3450	6900	10350
connected load	34.5W	69W	103W
1000mA	4350	8700	13050
connected load	49W	98W	148W

Energy efficiency



* Based on magnetic control gear
1 Assumed HID Luminaire LOR of 75%
2 Reference: ELEXON Unmetered Supplies Operational Charge Codes V17

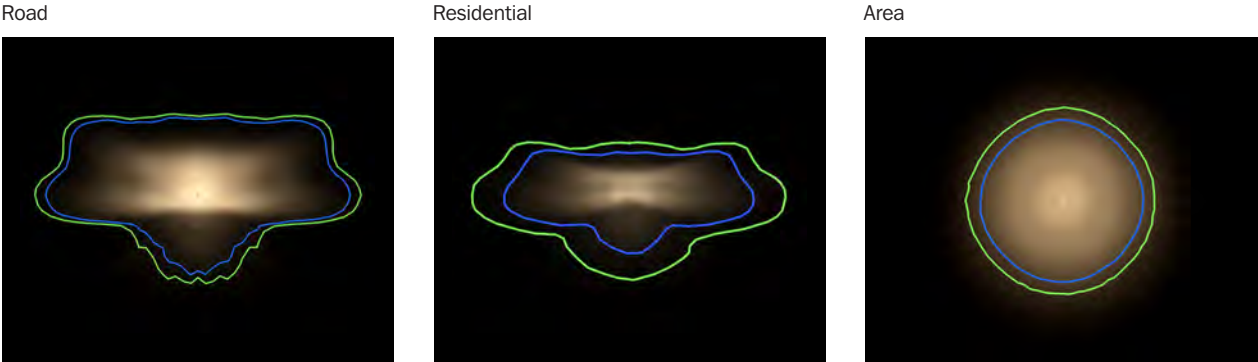
Scotopic / Photopic (SP) Ratio to BS 5489-1:2013

What is an S/P Ratio?
Our eyes respond differently at daytime and night-time lighting levels. These are commonly referred to as Photopic (day) and Scotopic (night) responses. For any artificial light source the ratio between these outputs is fixed and independent of the intensity (brightness) of that source.

When lighting to the residential and minor road P classes, as set out in CIE 115:2010 and the forthcoming BS EN13201-2:2013, the target illuminance can be adjusted in correlation with the S/P ratio.

Lighting Class	Benchmark Levels based on Ra <60		S/P ratio of 1.68 based on Kirium 4000K LED	
	E	Emin	E	Emin
P1	15.0	3.0	12.76	2.55
P2	10.0	2.0	8.06	1.61
P3	7.5	1.5	5.86	1.17
P4	5.0	1.0	3.66	0.73
P5	3.0	0.6	1.98	0.40
P6	2.0	0.4	1.20	0.40

LED Array Distribution

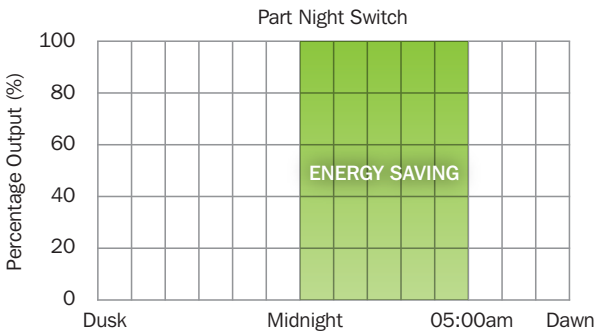
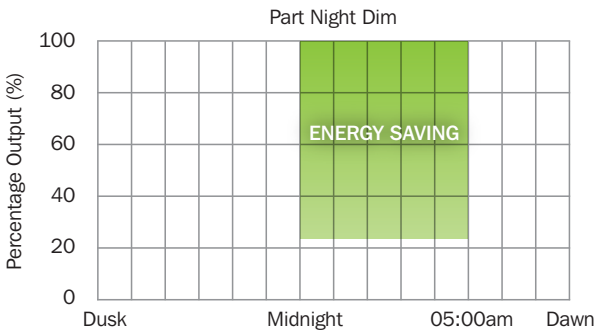


CONTROL

Intelligent Energy Management

Through the use of intelligent control systems, additional energy and cost savings and carbon reduction can be achieved. For energy saving calculations and advice please contact +44 (0)1992 474600.

Control type	Description	Potential saving
Photocell	Standard control option, switching light on/off at predetermined light levels. Further reductions achievable through trimming (reducing lux switch/off levels)	0
Part Night Switching	Using intelligent controls and control gear. Luminaires are switched off during hours of low traffic	Up to 50%
Part Night Dimming	Using intelligent controls and control gear. Luminaires are dimmed during hours of low traffic. Dimmed levels can change through the night to minimise the effect.	Up to 40%
Full CMS	A number of luminaires can be controlled from a central system. Dimming and switching regimes can be designed to suit individual situations. Luminaires can also feedback information on power consumption, operating conditions and life expectancy	Up to 50%



Kirium with miniature photocell

Kirium with Nema photocell

Kirium with CMS antenna

Full CMS/remote monitoring functionality; suitable for use with Harvard LeafNut, Mayflower, Philips Starsense, Telensa PLANet and Zodian Vizion systems



Features:

- Modular future-proof design
- Latest LED technology
- Class leading LED road lighting for P, C & M classes
- Exceptional thermal performance, increasing efficiency and life of LEDs
- Separate Cool-Zone™ for driver electronics
- Flexible optical, drive and control options for tailored performance
- Universal mounting adapter, for easy post top or side entry installation
- Contractor friendly installation

Options

Kirium 3 (three light engines) For mounting at 8-12 metres

Kirium 2 (two light engines) For mounting at 6-10 metres

Kirium 1 (one light engine) For mounting at 4-6 metres

Optical control:

Road

Residential

Area

Optional obtrusive light shield(s)

Light Engine:

DW Windsor or Vossloh Schwabe

Light Source:

Distribution	Road	Residential	Area
LEDs	Luxeon T	Luxeon T	Nichia 219
Number of LEDs per module	15	15	16

L70 Lifetime prediction:

75,000 hours (L70 for 3 modules at 700mA) to 93,000 hours (L70 for 1 module at 700mA).

Total circuit watts:

See detailed table on page 6

Colour temperature:

4000K (neutral white) or 3000K (warm white)

Colour rendering index:

>70Ra (4000K)

>80Ra (3000K)

Luminaire efficacy:

Up to 127 lm/W

Driver current:

350, 500, 700 & 1000mA options available

Glare rating:

G3-G4

Mounting:

Universal mounting adapter, for easy post top [60-76mm Ø] or side entry [34,42,60mm Ø] installation

Post top/side entry inclination: -5°, 0°, +5°

Gear, switching and control:

Switch: On/off through conventional PEC; miniature or Nema

Dim: Factory set dimmed / customer specified dimming

CMS: Compatible with all available CMS systems

Colours:

RAL 9005 Black

RAL 7046 Grey

RAL 7035 Light Grey

Other RAL colours available on special request

Materials

Body: High pressure die cast aluminium

Seals: Silicone

Finish: Polyester powder coated

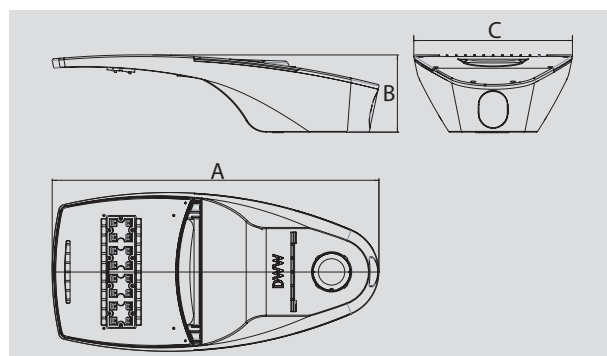
Installation and maintenance

Operational temperature range: -45°C to +50°C

Tool-less quick-release gear tray

Easily replaced LED modules for future upgradability

Easy cabling without requiring access to electrical enclosure



	Dimensions(mm)			Weight (kg)	Windage
	A	B	C		
Kirium 1	706	167	343	8.9	0.054m²
Kirium 2	706	167	343	9.5	0.054m²
Kirium 3	706	167	343	10.2	0.054m²

Kirium® is a registered design

Due to continuous product development the details within this brochure are subject to change at any time, please contact us for the most up-to-date information or visit: www.dwwindsor.com

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