

LD151 with new E1 LED Light Engine

High Power Interior/Exterior LED Uplighter

Data sheet - Page 1

Design: Greenleaf Lighting
Project: Private Residence
Product: LD151

The new LD151 features the all new E1 LED engine, optional glare shields and a new range of optics. Tunable White and RGBW options are also available. A powerful uplighter for its size and depth, the new LD151 has been designed specifically to produce low glare illumination to walls and columns. It can be used for a wide range of project styles with a minimal aesthetic and no visible fixings. This is a very tough, high quality fitting, machined from high grade materials ensuring excellent thermal and light output performance. Ideal for internal or external applications.

Key Features

- New E1 engine, featuring the CREE XHP35 LED with 2-step binning
- New optional 2nd channel LEDs for secondary lighting applications
- New 700mA option when specified with /484N concrete housing, delivering up to 555 lumens
- New optics, featuring an impressively narrow 10° spot for lighting columns and arches, or a 15°x 49° spreader lens, which is ideal for wall washing applications
- Single optic produces a very consistent beam with no multiple shadows
- LED and lens recessed in a matt black anodised body for reduced glare
- Choice of glare shields
- No visible fixings
- Range of bezel finish options
- Built-in reverse polarity protection
- LD151 is available with RGBW and Tunable White LED engines
- Available with Switch, 0-10V, DMX, DALI or Mains dimmable drivers

**Specification**

Applications



Beam Angles

10°, 19°, 34°, 54°, 15°x 49°

LED type

1 x E1 LED Engine with 2-step binning (LED data below)

Colour temperature

2700K*** / 3000K / 4000K | 5000K

Current

350mA | 500mA | 700mA* | 350mA | 500mA | 700mA*

LED power (Max)

5W (4.4W)** | 7W (6.3W)** | 10W (9W)** | 5W (4.4W)** | 7W (6.4W)** | 10W (9W)**

CRI (Min)

85 | 85 | 85 | 80 | 80 | 80

Forward voltage (V)₁₀₀

14V | 14V | 14V | 14V | 14V | 14V

Delivered lumens (L₁₀₀)****

347 | 437 | 555 | 374 | 472 | 599

Lumens per circuit watt

69 | 62 | 55 | 75 | 67 | 59

LED lifetime (to 70% lumen maintenance)

50,000hrs at a max ambient temperature of 35°C (if higher ambient then run at 500mA up to 45°C)

Glass

6mm thick low iron glass

Materials

Black anodised aluminium body, machine finish 316 stainless steel bezel (other options available)
Sleeve - Black Acetal

Wiring

Comes pre-wired with 250mm lead. Single colour equipped with 2 core cable, 2 Channel or TW engine with 4 core cable & RGBW with 8 core cable. Can be specified with up to 10m at extra cost.

IP rating

IP67

*can only be specified with /484N concrete housing

**indicates the nominal power for the LED run at that particular current and includes losses associated with using an 85% efficient driver

***2700K lumen output is 8% lower than the 3000K figure listed

****lumen output indicated is without the glare shield. Allow 30% less with the /GS glare shield.

LD151 with new E1 LED Light Engine



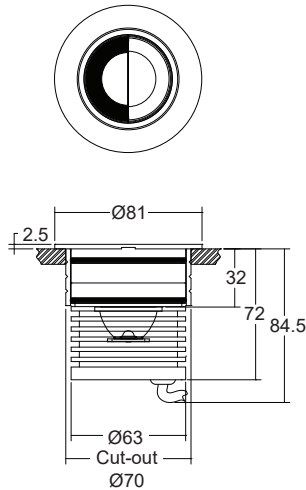
High Power Interior/Exterior LED Uplighter

Data sheet - Page 2

Fixing Accessories

The fitting is supplied as standard with a fixing sleeve; this is bonded into the mounting surface first. The LD151 is secured into the sleeve by 2 O-rings on the body, which when pushed into the sleeve creates a watertight seal.

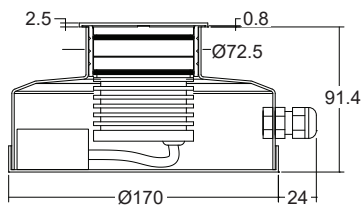
/484S First Fix Sleeve supplied as standard



/484N Concrete housing

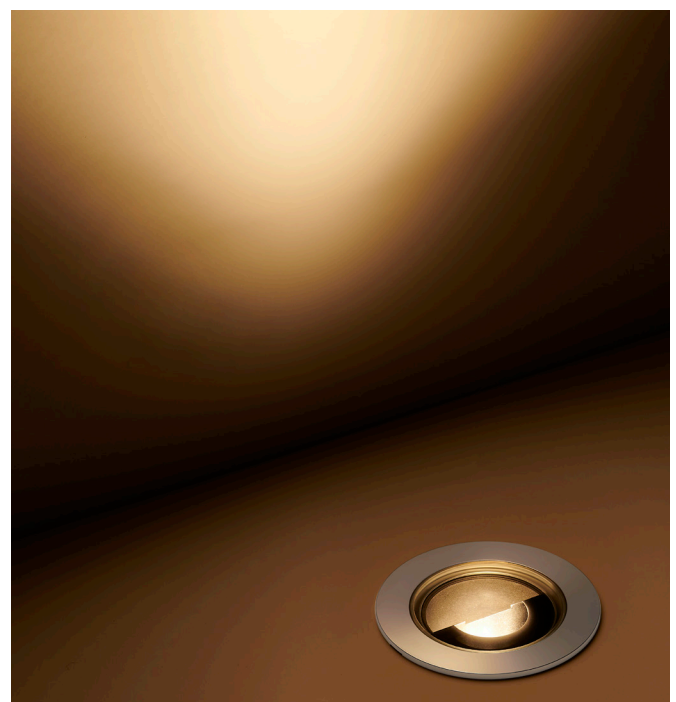
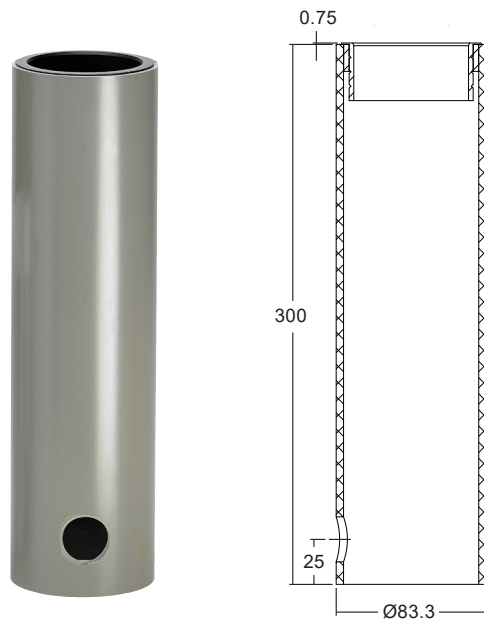
/ID Optional integral non-dimming driver (single colour only at 350mA or 500mA)

Concrete housing must be used when specifying the 700mA fitting. The aluminium can aids in keeping the LED fitting cool, as it helps with thermal transfer between the heat within the housing to the surrounding concrete.



/484GT Ground tube

The in-ground tube has been designed for applications where a recessed uplighter is required in soil or gravel surfaces. The tube can be buried with the necessary wiring, and then the fitting installed after the landscaping work has been completed. It is supplied with the fixing sleeve bonded into the tube, and can be cut down on site.



LD151 with new E1 LED Light Engine



High Power Interior/Exterior LED Uplighter

Data sheet - Page 3

Glare Shields

LD151 now comes with a choice of glare control options.



/NGS
No glare shield. Deep recessed optic and matt black anodised optic holder aids in glare reduction.



/GS
Standard glare shield introduced in 2010, which provides an excellent balance between glare control and light output. This accessory works well in most applications.

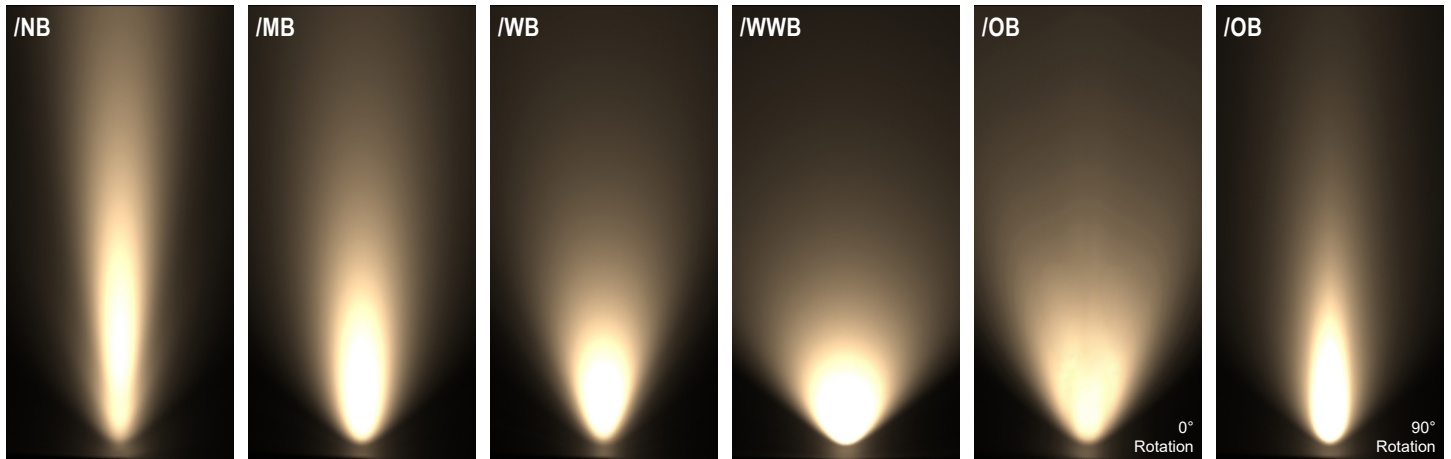


/GSHM
Half-moon glare shield for applications that require very low glare. Minimal loss of light on lit surface (wall) but overall lumen output typically reduced by 50-60%.

Please refer to our photometric files for lumen data. These are available to download from our website.

Cone Diagrams

Cone diagrams below are based on a 3000K E1 LED engine run at maximum output 700mA, 10W. Images below represents beam outputs when wall washing a 3m wall, spaced 125mm away from the lit surface.



Narrow Beam
700mA using a 10° optic

| Distance (m) | Cone Width (m) | Luminance (lx) |
|--------------|----------------|----------------|
| 3.0 | 0.62 | 750 |
| 2.5 | 0.52 | 1080 |
| 2.0 | 0.41 | 1688 |
| 1.5 | 0.31 | 3000 |
| 1.0 | 0.21 | 6751 |
| 0.5 | 0.10 | 27002 |

Medium Beam
700mA using a 19° optic

| Distance (m) | Cone Width (m) | Luminance (lx) |
|--------------|----------------|----------------|
| 3.0 | 1.06 | 346 |
| 2.5 | 0.88 | 498 |
| 2.0 | 0.71 | 779 |
| 1.5 | 0.53 | 1384 |
| 1.0 | 0.35 | 3114 |
| 0.5 | 0.18 | 12456 |

Wide Beam
700mA using a 34° optic

| Distance (m) | Cone Width (m) | Luminance (lx) |
|--------------|----------------|----------------|
| 3.0 | 1.97 | 114 |
| 2.5 | 1.64 | 164 |
| 2.0 | 1.32 | 256 |
| 1.5 | 0.99 | 455 |
| 1.0 | 0.66 | 1024 |
| 0.5 | 0.33 | 4095 |

Extra Wide Beam
700mA using a 54° optic

| Distance (m) | Cone Width (m) | Luminance (lx) |
|--------------|----------------|----------------|
| 3.0 | 3.06 | 55 |
| 2.5 | 2.55 | 79 |
| 2.0 | 2.04 | 124 |
| 1.5 | 1.53 | 220 |
| 1.0 | 1.02 | 496 |
| 0.5 | 0.51 | 1984 |

Oval Beam
700mA using a 15° x 49° optic

| Distance (m) | Cone Width (m) | Luminance (lx) |
|--------------|----------------|----------------|
| 3.0 | 2.70 / 0.74 | 190 |
| 2.5 | 2.25 / 0.61 | 274 |
| 2.0 | 1.80 / 0.49 | 428 |
| 1.5 | 1.35 / 0.37 | 761 |
| 1.0 | 0.90 / 0.25 | 1712 |
| 0.5 | 0.45 / 0.12 | 6846 |

Photometric files (LDT) are included in the design pack which can be downloaded from the LD151 product page on the website.

LD151 with new E1 LED Light Engine

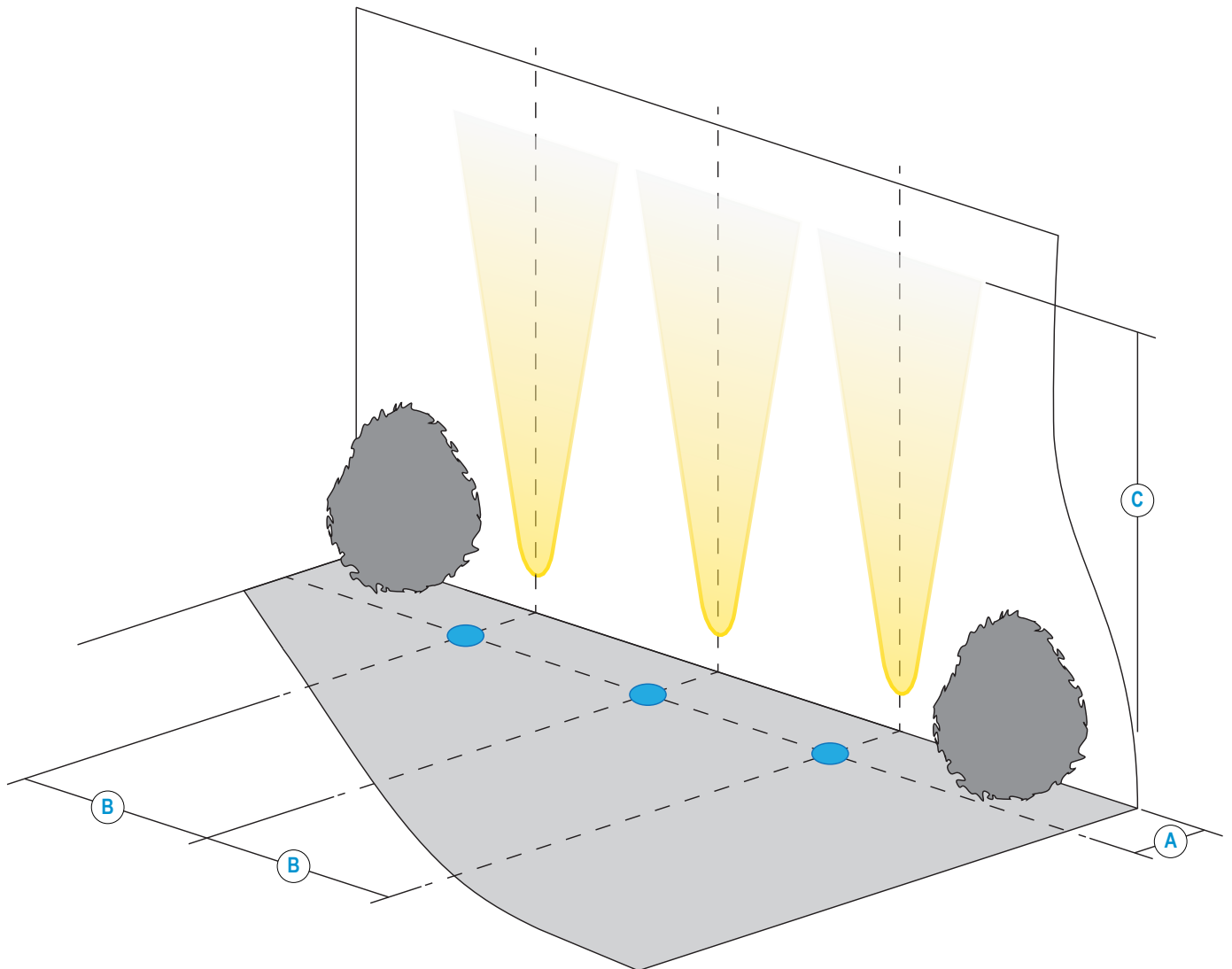


High Power Interior/Exterior LED Uplighter

Data sheet - Page 4

Installation Guide

Below is a luminaire positioning guide for white LEDs. Every project and lighting scenario will be different; the table below is to be used as a starting point for any wall wash design. Please use our photometric files to further test the desired effect for your application. Files are available on our LD151 product page on our website.



| LD151-E1 | /NB | /MB | /WB | /WWB | /OB |
|---|--------|-------|-------|-------|-------|
| A Distance from the centre of the fitting to the lit surface | 125mm | | | | |
| B Spacing for an even wash | 250mm* | 350mm | 400mm | 500mm | 500mm |
| C 500mA Lit distance | 6m | 4.5m | 2m | 2m | 4m |
| C 700mA Lit distance | 9m | 5.5m | 4m | 3m | 5m |

*Wall washing using narrow beam optics should only be used if the designer requires long distance lighting up the lit surface.

LD151 with new E1 LED Light Engine

High Power Interior/Exterior LED Uplighter

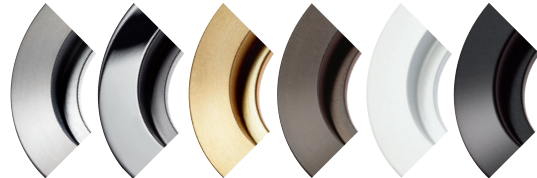


Data sheet - Page 5

Product Features

BEZEL

High quality machined bezel available in 316 stainless steel, polished, flamed solid bronze, paint finish white (RAL 9016) / black / RAL. Other paint finishes available, please speak to a member of our sales team.



GLASS

6mm thick low iron glass, suitable for walkover applications.

GLARE SHIELD

Optional glare shield to reduce glare. With choices between our standard glare shield or a half moon glare shield design.



OPTIC

Revised high efficiency optics with a new range of beam angles to create the ideal lit effect.

OPTIC HOLDER

Matt black anodised for reduced glare.

LED

- E1 LED engine.
- E1 LED engine, with the optional 2nd channel.
- TW Tunable White LED engine.
- RGBW LED engine with colour mix lens.
- CLR Colour LED engine.

BODY

Machined and anodised body. 6000 series aluminium chosen for its thermal characteristics and resistance to corrosion.

ACCESSORY

Choose between a range of fixings options



LD151 with new E1 LED Light Engine



High Power Interior/Exterior LED Uplighter

Data sheet - Page 6

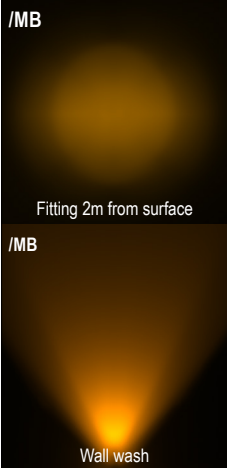
LED Options and Technology

New LED Options

LD151 is now available with a choice of light engines which feature a new all copper board for increased thermal transfer. The new E1 light engine for white light applications uses the new Cree XHP35 LED and features on-board polarity protection. This smaller LED chip has enabled a wider range of beam angles to be offered, coupled with increased efficiencies. This engine is also available with two extra LEDs on a second channel for night lighting and marine navigation applications. The new tunable white engine offers a choice of dynamic colour options.

| | E1 Light Engine (White light) | E1-2CH 2nd channel board | CLR - Colour | TW - Tunable White | RGBW |
|--------------|--|---|---|---|--|
| LED Board | | | | | |
| LED type | Cree XHP35 | Cree XHP35 + XQEs | Cree XQEs | Cree XQEs | Cree XML |
| Key Features | <ul style="list-style-type: none"> - Available in 2700K, 3000K, 4000K and 5000K - Very small chip size - Tighter narrow beams - Wider range of beam angles - 2 step binning - Brighter more efficient LED - On-board polarity protection - All copper LED board for increased thermal transfer | <ul style="list-style-type: none"> - Main white LED with optional 2nd channel for night lighting or marine navigation applications - 2nd channel comprises of 2 XQE LEDs mounted next to the XHP35 - Beam shape from the XQEs is different from the main LED as they are mounted to the sides of the optic - 2 driver circuits required - All copper LED board | <ul style="list-style-type: none"> - 4 colour XQE LEDs mounted under a single optic - All copper LED board - Red, Blue, Green and Amber colour LED options - Single LED circuit | <ul style="list-style-type: none"> - 4 XQE LEDs mounted under a single optic - 2 LEDs per colour - Excellent dynamic white mixing from a range of optics - All copper LED board - 2 driver circuits required | <ul style="list-style-type: none"> - RGBW LEDs mounted under a single 26deg optic for superb colour mixing - White LED is 4000K - All copper LED board - 4 LED circuits required |
| Cables | | | | | |
| Lumen output | See table on page 1 | See table on page 1 | | See table below | |

2nd Channel Light Output



| Colour temperature | Warm White 2700K or 3000K | Cool White 4000K or 5000K |
|--------------------------------------|----------------------------|---------------------------|
| Current | 500mA | 500mA |
| LED power (Max) All channels in use | 7W (6.3W) 3.5W per channel | |
| CRI (Min) | 85 | |
| Delivered lumens (L ₁₀₀) | 148lm | 188lm |
| Lumens per circuit watt | 42 | 54 |

Industry Leading LED Thermal Management

High quality, embedded copper PCB, with direct contact cooling for the LEDs providing industry leading thermal management of the LED. Guaranteeing long life and minimal colour shift.



LD151 with new E1 LED Light Engine

High Power Interior/Exterior LED Uplighter



Data sheet - Page 7

Order Codes and Options**White LED Options - E1 Light Engine**

| Product code | LED colour | Beam angle | Glare shield | Finish | Fixing |
|----------------------------------|------------|------------|--------------|--------|--------|
| LD151-E1 - 350 - 500 - 700 | | | | | |

Example: LD151-E1-700 / LW30 / NB / NGS / Stainless Steel / 484N

Product codes with output options

| | |
|---|--------------|
| 5W LED at 350mA | LD151-E1-350 |
| 7W LED at 500mA | LD151-E1-500 |
| 10W LED at 700mA (Must be specified with /484N) | LD151-E1-700 |

LED colour options

| LED colour options | Suffix |
|--|----------|
| Extra Warm White (2700K) | /LW27 |
| Warm White (3000K) | /LW30 |
| White (4000K) - on request | /LW40 |
| Cool White (5000K) | /LW50 |
| With 2nd channel (red for navigation or amber night lighting) LD151-E1-2CH | /LW**+L* |

*For other single colour options, please discuss with the sales team

Beam / lens angle options

| | |
|-----------------|------|
| 10° narrow spot | /NB |
| 19° medium | /MB |
| 34° wide | /WB |
| 54° extra wide | /WWB |
| 15° x 49° oval | /OB |

Glare shield

| | |
|------------------------|-------|
| No glare shield | /NGS |
| Standard glare shield | /GS |
| Half-moon glare shield | /GSHM |

Bezel finish options

| |
|--|
| Stainless steel 316 |
| Polished and passivated stainless steel (for marine environments) |
| Flamed solid bronze (antique finish) |
| Paint finish white / black / RAL (not suitable for high traffic areas) |

*See our finishes guide for other options

Fixing accessories

| | |
|---|--------|
| First fix sleeve (supplied as standard) | /484S |
| Concrete housing (specify when choosing LD151-E1-700) | /484N |
| with integral non-dimming driver (350mA & 500mA outputs only) | /ID |
| Ground tube | /484GT |

Use with 350mA, 500mA & 700mA constant current LED drivers

We have a wide range of dimmable LED drivers, 0-10V, DMX, DALI and Mains dimmable. Please see the downloads section on our website:

- To run 1-4 LD151-E1-350 in series use a TXDEL350D (0-10V dimmable)
- To run 1-4 LD151-E1-500 in series use a TXDEL500D (0-10V dimmable)
- To run 1-3 LD151-E1-700 in series use a TXDEL700D (0-10V dimmable)

Colour LED Options - CLR Light Engine

Example: LD151-CLR-500 / LR / MB / NGS / Stainless Steel / 484N

LED colour options (max 500mA)

| LED colour options (max 500mA) | Suffix |
|--------------------------------|--------|
| Red | /LR |
| Green | /LG |
| Blue | /LB |
| Amber | /LA |

Driver requirements identical to E1 engine, beam angles identical to TW engine

Tunable White Options - TW Light Engine

| Product code | LED colour | Beam angle | Glare shield | Finish | Fixing |
|-------------------------|------------|------------|--------------|--------|--------|
| LD151-TW - 350 - 500 | | | | | |

Example: LD151-TW-500 / LW27 + LW40 / NB / NGS / Stainless Steel / 484N

Product codes with output options

| | |
|--|--------------|
| 5W LED at 350mA - 2 channels of 2 x 1.2W | LD151-TW-350 |
| 7W LED at 500mA - 2 channels of 2 x 1.7W | LD151-TW-500 |

LED colour options

| LED colour options | Suffix |
|---|--------------|
| Tunable White 2700K & 4000K (standard option) | /LW27 + LW40 |
| Tunable White 2700K & 5000K | /LW27 + LW50 |
| Custom | /LW** + LW** |

Fitting comprised of 2x LEDs in one colour temperature & 2x LEDs in another. Other white colour options available on request, please discuss with our sales team.

Beam / lens angle options

| | |
|---|------|
| Narrow spot not available due to poor colour mixing | |
| 24° medium | /MB |
| 38° wide | /WB |
| 54° extra wide | /WWB |
| 20° x 46° oval | /OB |

Beam, Bezel and Glare shield options

Same as White LED options using the E1 Light Engine

Finish and fixing options

Same as White LED options using the E1 Light Engine

Use with 350mA & 500mA constant current LED drivers

We have a wide range of dimmable LED drivers, 0-10V, DMX, DALI and Mains dimmable. Please see the downloads section on our website:

- To run 1-7 LD151-TW-350 in series use 2x TXDEL350D (0-10V dimmable)
- To run 1-7 LD151-TW-500 in series use 2x TXDEL500D (0-10V dimmable)

Colour Change RGBW Options - RGBW Light Engine

| Product code | Glare shield | Finish | Fixing |
|---------------------------|--------------|--------|--------|
| LD151-RGBW - 350 - 500 | | | |

Example: LD151-RGBW-500 / NGS / Stainless Steel / 484N

Product codes with output options

| | |
|--------------------------------|----------------|
| 5W LED at 350mA (4x 1.2W LEDs) | LD151-RGBW-350 |
| 7W LED at 500mA (4x 1.7W LEDs) | LD151-RGBW-500 |

RGBW features a 4000K white LED for creating hues

Beam / lens angle options

38° colour mix lens

Bezel and Glare shield options

Same as White LED options using the E1 Light Engine

Finish and fixing options

Same as White LED options using the E1 Light Engine

Use with 350mA & 500mA constant current LED drivers

We have a range of dimmable LED drivers DMX and DALI compatible. Please see the downloads section on our website:

- To run 2-13 LD151-RGBW-350 in series use a TXDEL4A350DMX or TXDEL4A350DALI
- To run 2-13 LD151-RGBW-500 in series use a TXDEL4A500DMX or TXDEL4A500DALI