LD1094

HIGH-POWER ADJUSTABLE EXTERIOR RECESSED LED DOWNLIGHT

350 mA | 500 mA | 700 mA | IP65 | IP67 | 55°C Ta | F | PART L Display | 5 YEAR Warranty

MOISTURE GUARD



The LD1094 is an IP67 rated high-power adjustable recessed downlight, designed for challenging marine environments. Featuring an innovative 360° rotating ball-joint, the deep recessed lens assembly can be positioned in any direction and tilted up to 25° for ultimate flexibility. After installation, focusing can be carried out quickly and glare control accessories interchanged by unscrewing the bezel, eliminating the need for the product to be removed from the mounting surface. With a shallow depth of just 67mm, this product is ideal for areas with a height restriction and provides a wide range of hidden fixing options to suit a variety of ceiling types. The LD1094 delivers in excess of 750lm and is available with an E3 or N1 LED engine, offering colour temperatures between 2200K-5000K, as well as several beam angles for multi-purpose use of the fitting throughout a project. This robust downlight solution ensures excellent thermal and light output performance that is built to last in harsh applications.

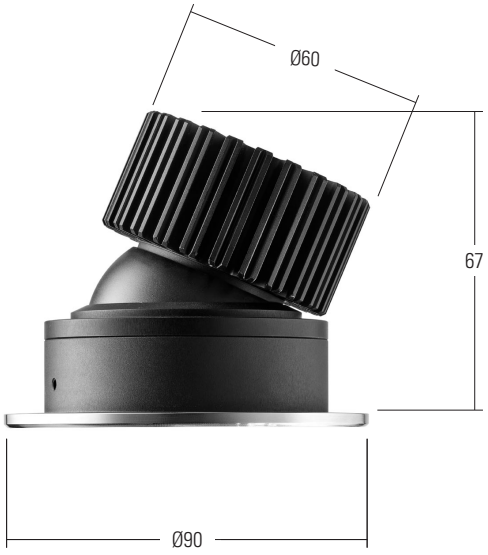
KEY FEATURES

- Innovative 360° rotating ball-joint can be positioned in any direction and tilted up to 25° for ultimate flexibility when focusing onsite
- Removable bezel for quick and easy on-site focusing once the product is installed
- Very shallow depth, ideal for height restricted applications
- Rated IP67 from the front and IP65 from the back
- Interchangeable optics and glare control accessories including honeycomb louvre
- Beam angles include 25° medium spot, 35° medium, 46° wide, 65° extra wide and a 22° x 43° oval beam
- E3 and N1 LED engines available, producing up to 755 lumens in 3000K at 700mA
- Single optic produces superior beam shape and no multiple shadows
- High quality machined bezel available in: Polished & Passivated 316 Stainless Steel, 316 Stainless Steel, White (RAL 9016), Black (RAL 9005), Classic Bronze, Textured Mars Bronze, Textured Fir Green, Gunmetal Grey and any RAL colour
- Various hidden fixing methods for multiple ceiling types
- Contains our integral moisture guard (anti-wicking barrier), stopping water ingress from going up the cable into the product from incorrect IP-rated connections
- Switched, 0-10V, Casambi, DMX, DALI or Mains dimmable drivers available

DIMENSIONS

Dimensions in mm

For full dimensions please go to page 6



LED ENGINE SPECIFICATION

Engine	E3			N1		
Beam angles	12°, 20°, 34°, 55°, 12° x 49°			25°, 35°, 46°, 65°, 22° x 43°		
LED manufacturer	NICHIA			CREE		
Colour temperature*	2200K, 2700K, 3000K, 4000K, 5000K			2200K, 2700K, 3000K, 4000K, 5000K		
Current	350mA [5W]	500mA [7W]	700mA [10W]	350mA [7W]	500mA [10W**]	700mA [14W]
LED power (Max)	4.2W	6W	8.4W	5.8W	9.3W	13.3W
Delivered lumens (L_{100})	381	467	579	431	586	755
Lumens per circuit watt	76	67	58	74	71	65
CRI (Typ)	85	90***		93		
Forward voltage (V_{100})	14V			18V		
Colour consistency	2 SDCM			2 SDCM		
Peak intensity	5,768 cd			2,690 cd		
LED Lumens	840lm			1393lm		
LOR	0.69			0.54		
TM30	RF85.7 | RG98.3			RF90 | RG102		
UGR****	10.4			13.9		
LED lifetime	L90B5 at 90,000hrs			L90B5 at 90,000hrs		
Applications						

These values are based around a LD1094-E3-700/830/NB and LD1094 -N1-700/930/MSB
*See lumen variance table to the right for N1 engine. E3 lumens apply across all colour temperatures
**Indicates the nominal power for the LED run at that particular current and includes losses associated with using an 85% efficient driver
***90 CRI available in 2700K/3000K only. Approx. 10% lumen drop will occur compared to 85 CRI variants
****UGR values based on room parameter of 4H 8H, C70 W50 F20

Lumen variance by CCT	
2200K	-7%
2700K	+/- 0%
4000K	+7%
5000K	+16%

MECHANICAL

		350mA	500mA	700mA
Ambient temperature ○ 55°C	E3	-20°C to 55°C	-20°C to 50°C	-20°C to 35°C
	N1	-20°C to 55°C	-20°C to 35°C	-20°C to 35°C
	AUS/NZ	-20°C to 25°C		
Glass	1mm thick, low iron glass			
Materials	Aluminium, Stainless Steel, Glass			
Weight of product	700g			
IP rating	IP67			
Wiring	External 2 core cable, 400mm			

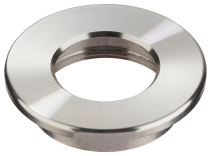
ENVIRONMENTAL

Repair + Refurbish	R+R This product is included in our Repair and Refurbish scheme. This offers customers the ability to send back products to us for repair or refurbishment to extend their life without having to buy new fittings.

AVAILABLE FINISHES

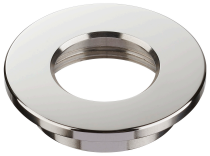
Please refer to our finishes guide for full details

MACHINED & PLATED FINISHES



316 STAINLESS STEEL
/SS

- Marine grade 316 Steel
- Standard machined finish
- Extremely durable with very high corrosion resistance
- Passivation recommended for marine environments to prevent corrosion and build up of brown stains caused by oxidation
- Interior & exterior use



POLISHED & PASSIVATED 316 STAINLESS STEEL
/PPSS

- Marine Grade 316 Steel
- Mirror like finish
- Extremely durable with very high corrosion resistance
- Passivated to extensively prolong resistance to corrosion and brown stains caused by oxidation in marine environments
- Interior & exterior use

POWDER COAT PAINT FINISHES

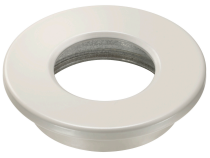
Our paint finishes are suitable for interior, exterior, and high-saline environments. All our painted finishes are applied in-house, allowing us to maintain complete control over quality and consistency. This also means we can easily accommodate any RAL colour specification in addition to our standard colour range, offering you full flexibility for custom projects.



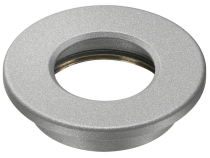
MATT BLACK
/PCBLK



MATT WHITE
/PCWHT



ANTIQUE WHITE
/PCAWHT



MATT SILVER
/PCMS



ANTHRACITE GREY
/PCANTGREY



GUNMETAL GREY
/PCGMG



ANTIQUE BRONZE
/PCANTBRZ



EARTH BRONZE
/PCEBRZ



DESERT BRONZE
/PCDBRZ



TEXTURED MARS BRONZE
/PCMARS



TEXTURED FIR GREEN
/PCTFG



WHITE STONE
/PCTWS



CUSTOM RAL
/CUSTFINISH

ACCESSORIES AND GLARE CONTROL OPTIONS

The LD1094 allows adjustments to be made to the direction of the optic and interchangeable accessories after installation through removal of the bezel. The HT1094 hand tool (see page 5) should be used when unscrewing the bezel and tilting the lens assembly to avoid scratching the fitting.



Optic
Deep recessed single optic for low glare, superior beam shape and no multiple shadows

E3 Beam angles		N1 Beam angles	
12° Medium spot	/NB	25° Medium spot	/MSB
20° Medium	/MB	35° Medium	/MB
34° Wide	/WB	46° Wide	/WB
55° Extra wide	/WWB	65° Extra wide	/WWB
12° x 49° Oval	/OB	22° x 43° Oval	/OB

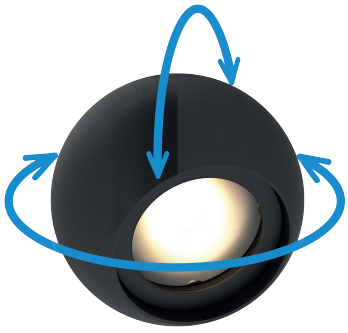
/HL Honeycomb louvre
The honeycomb louvre can be added after installation and helps reduce glare from all angles



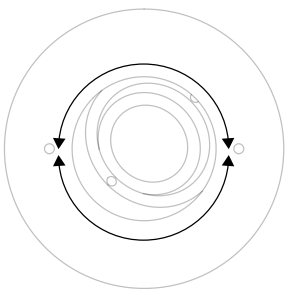
Optic and accessory ring holder
Clip-in ring allows for interchangeable accessories and optics

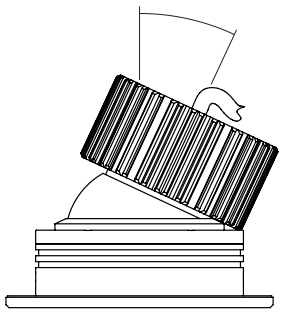
ADJUSTABLITY

Featuring an innovative 360° rotating ball-joint, the lens assembly can be positioned in any direction and tilted up to 25° for ultimate flexibility when focusing on-site.



360° Rotation





HT1094 HAND TOOL

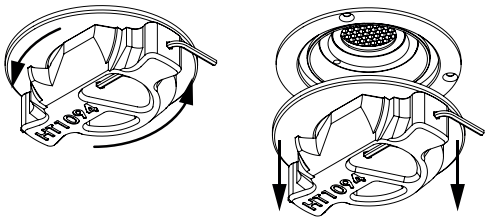
/HT1094 Hand tool

The hand tool is required to unscrew the bezel and tilt the rotating ball-joint into the desired position for quick on-site focusing. The product can be tilted freehand, or with the supplied angle guide working in increments of 2.5° (from 0° up to 25°). The hand tool is completely plastic to prevent accidental scratches when opening and making adjustments. If commissioning a large group, then more than one tool may be required to allow multiple people to make adjustments at the same time. This tool is supplied separately and will be automatically quoted.



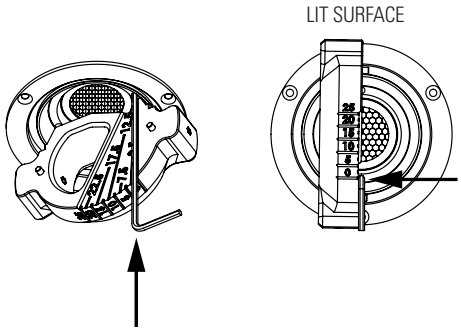
HOW TO USE THE HAND TOOL

1. Fit the pins on the HT1094 into the corresponding holes on the front bezel of the fitting and begin to unscrew the bezel.

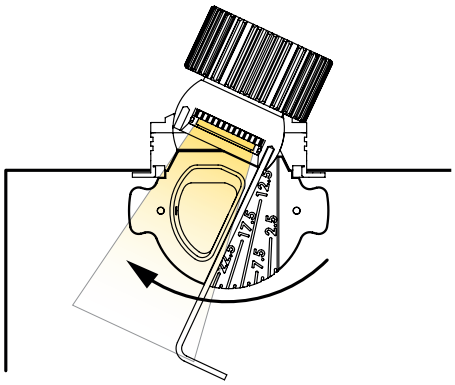


NOTE: Keep bezel clean

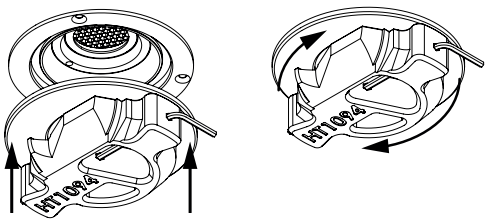
2. Place HT1094 into the LD1094 as shown. Using the provided Allen key or a 3mm screwdriver, push into module hole furthest away from the lit surface.



3. Always start in the level & upright position. Push towards the desired lit surface.If you overshoot, bring the LED back to the starting position before tilting again.



4. Make sure the inside of the bezel and glass is clean before refitting and replacing the bezel.

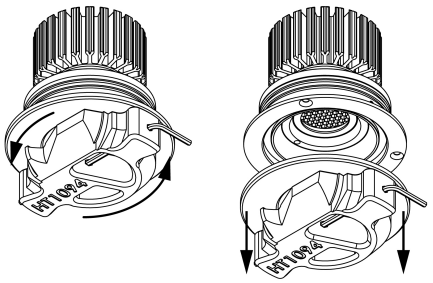


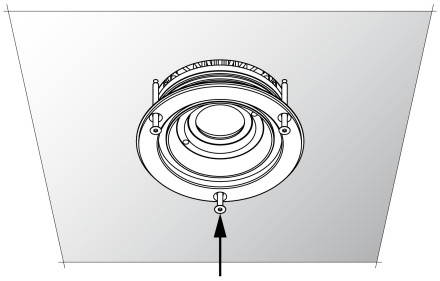
FIXING OPTIONS

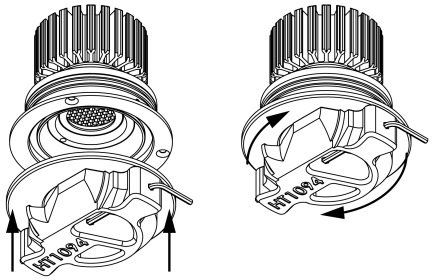
/SM Screw Mount

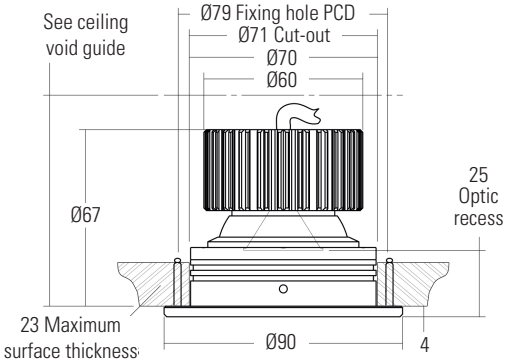
Direct fitting to ceiling mounting method with the use of 3 hidden screws underneath the bezel, which is then screwed back on once fixing is complete. The fixing holes for the LD1094 are close to the cut-out diameter, so if the mounting surface isn't dense enough then there may be a risk of the fixing screws breaking out without the use of a ceiling ring (see CMR fixing on page 7).







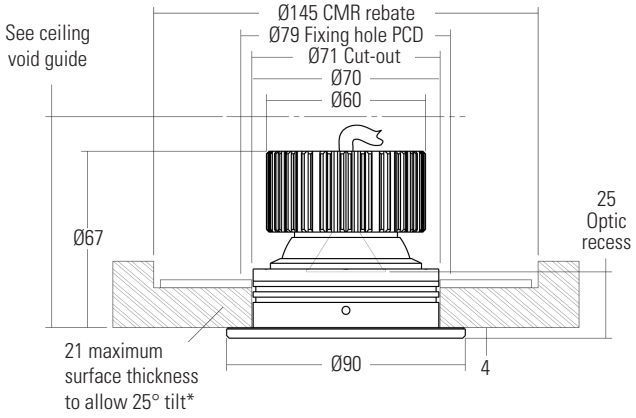




/CMR Ceiling Mount Ring

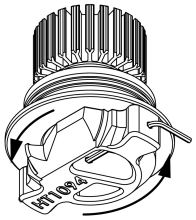
The ceiling mount ring is ideal for providing an extra secure fixing and is our recommended method. It can only be installed if there is access behind the mounting surface.

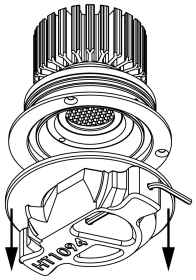




Why use the ceiling mount ring?

- The fixing holes on the LD1094 bezel are close to the cut-out diameter, so if the mounting surface isn't rigid enough there may be a risk of the fixing screws breaking out without the use of a ceiling ring
- The ceiling mount ring is manufactured from metal and has the threaded fixing holes pre-drilled
- It provides a surface for the LD1094 to be fixed flush into the mounting surface

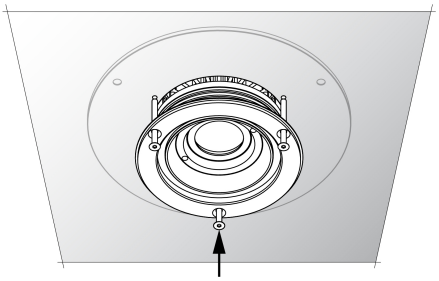


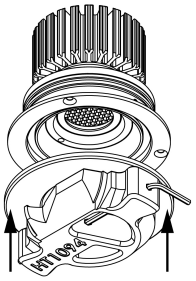


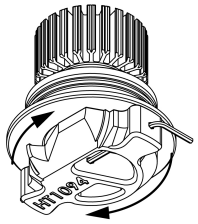
What is the thickness of the mounting surface?

The thickness of the mounting surface is important to how the ceiling ring is installed:

- If this surface is 21mm in thickness then the ceiling ring can be fixed directly to the back of it
- If the surface is thicker than 21mm then a rebate will need to be created to guarantee the bezel sits flush with the front surface

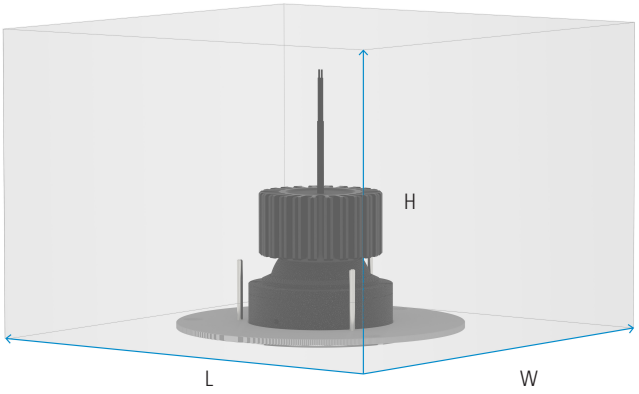






CEILING VOID REQUIREMENTS

Installation requirements can vary but the minimum installation volume requirements must be adhered to. The volume of air within the void ensures that the thermal performance of the product is not compromised and that proper cooling of the LED can take place. The minimum void height is 80mm.



E3 LED			
Output current	Minimum void dimension requirements (Lmm x Wmm x Hmm)	Minimum void volume	
		cm^3	Litre(s)
350mA / 500mA	150 x 150 x 80	1800cm^3	1.8
700mA	200 x 200 x 150	6000cm^3	6

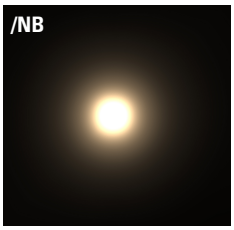
N1 LED			
Output current	Minimum void dimension requirements (Lmm x Wmm x Hmm)	Minimum void volume	
		cm^3	Litre(s)
350mA / 500mA	150 x 150 x 80	1800cm^3	1.8
700mA	250 x 250 x 150	9375cm^3	9.375

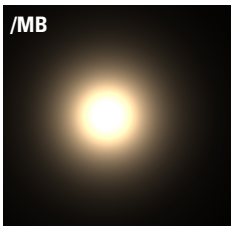
Note: At 700mA the minimum dimension between a wall, within the ceiling void and the edge of the fitting must be 70mm.

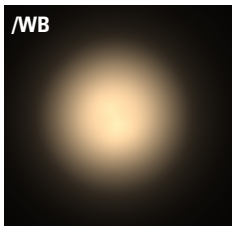
CONE DIAGRAMS

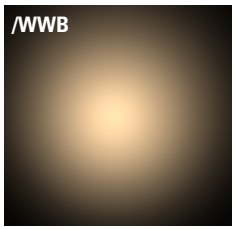
E3 LED Engine

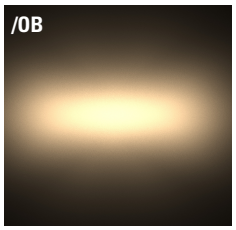
Cone diagrams below are based on a 3000K E3 LED engine run at maximum output 700mA, 10W. Images below represent beam outputs when wall washing a 3m wall, spaced 125mm away from the lit surface. Photometric files (LDT) are included in the design pack which can be downloaded from the LD1094 product page on the website.

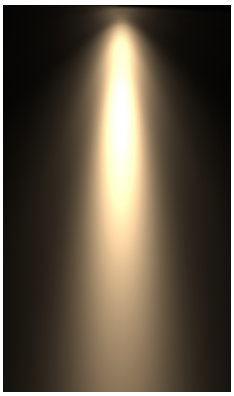






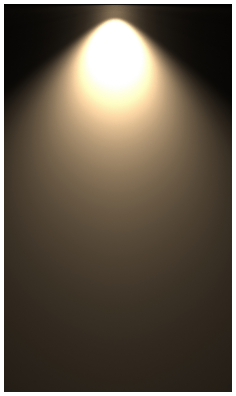




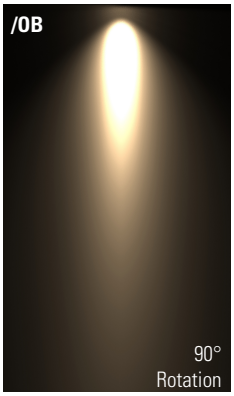












Narrow Beam
700mA using a 12° optic

Distance (m)	Illuminance (lx)	
0.5	0.13	23022
1.0	0.26	5756
1.5	0.38	2558
2.0	0.51	1439
2.5	0.64	921
3.0	0.77	640

Cone Width (m)

Medium Beam
700mA using a 20° optic

Distance (m)	Illuminance (lx)	
0.5	0.19	11151
1.0	0.39	2788
1.5	0.58	1239
2.0	0.77	697
2.5	0.96	446
3.0	1.16	310

Cone Width (m)

Wide Beam
700mA using a 34° optic

Distance (m)	Illuminance (lx)	
0.5	0.31	4363
1.0	0.63	1091
1.5	0.94	485
2.0	1.25	273
2.5	1.57	175
3.0	1.88	121

Cone Width (m)

Extra Wide Beam
700mA using a 55° optic

Distance (m)	Illuminance (lx)	
0.5	0.55	2282
1.0	1.10	571
1.5	1.65	254
2.0	2.20	143
2.5	2.75	91
3.0	3.30	63

Cone Width (m)

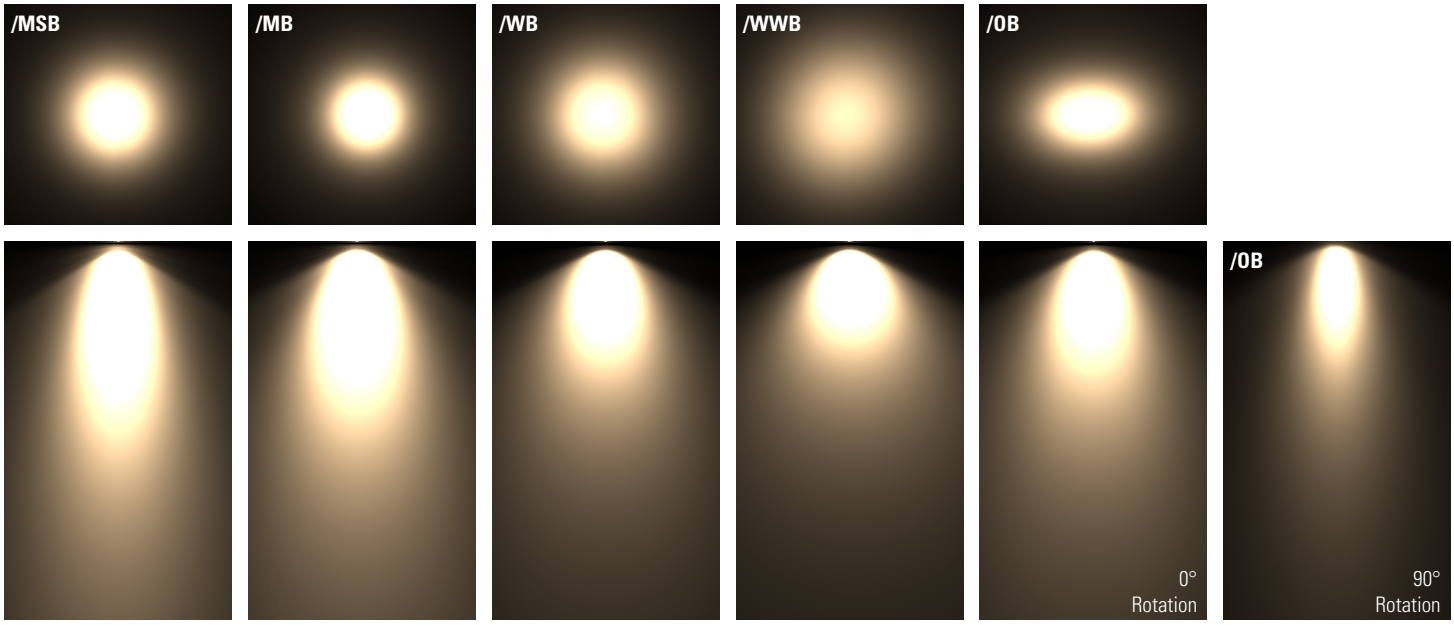
Oval Beam
700mA using a 12° X 49° optic

Distance (m)	Illuminance (lx)	
0.5	0.17 / 0.42	5818
1.0	0.34 / 0.84	1454
1.5	0.51 / 1.27	646
2.0	0.68 / 1.69	364
2.5	0.85 / 2.11	233
3.0	1.01 / 2.53	162

Cone Width (m)

N1 LED Engine

Cone diagrams below are based on a 3000K N1 LED engine run at maximum output 700mA, 14W. Images below represent beam outputs when wall washing a 3m wall, spaced 125mm away from the lit surface. Photometric files (LDT) are included in the design pack which can be downloaded from the LD1094 product page on the website.



Medium Spot Beam

700mA using a 25° optic

Distance (m)	Illuminance (lx)
0.5	33140
1.0	8285
1.5	3682
2.0	2071
2.5	1326
3.0	921

Cone Width (m): 0.23, 0.47, 0.70, 0.94, 1.17, 1.41

Medium Beam

700mA using a 35° optic

Distance (m)	Illuminance (lx)
0.5	13110
1.0	3277
1.5	1457
2.0	819
2.5	524
3.0	364

Cone Width (m): 0.30, 0.60, 0.91, 1.21, 1.51, 1.81

Wide Beam

700mA using a 46° optic

Distance (m)	Illuminance (lx)
0.5	5283
1.0	1321
1.5	587
2.0	330
2.5	211
3.0	147

Cone Width (m): 0.40, 0.81, 1.21, 1.62, 2.02, 2.42

Extra Wide Beam

700mA using a 65° optic

Distance (m)	Illuminance (lx)
0.5	2302
1.0	575
1.5	256
2.0	144
2.5	92
3.0	64

Cone Width (m): 0.61, 1.22, 1.82, 2.43, 3.04, 3.65

Oval Beam

700mA using a 22° X 43° optic

Distance (m)	Illuminance (lx)
0.5	8540
1.0	2135
1.5	949
2.0	534
2.5	342
3.0	237

Cone Width (m): 0.39 / 0.22, 0.78 / 0.43, 1.16 / 0.65, 1.55 / 0.86, 1.94 / 1.08, 2.33 / 1.30

ORDER CODES & OPTIONS

EXAMPLE: LD1094-E3-700/830/NB/316 Stainless Steel/HL/CMR

Light Engine & Drive Current / LED colour / Beam angle / Finish / Fixing & accessories

Ambient temperature key: 55°C

E3

55°C Ta	5W LED at 350mA*	LD1094-E3-350	2200K 85+ CRI	/822	12° Medium spot	/NB	
	7W LED at 500mA*	LD1094-E3-500	2700K 85+ CRI	/827	20° Medium	/MB	
	10W LED at 700mA*	LD1094-E3-700	3000K 85+ CRI	/830	34° Wide	/WB	
			4000K 85+ CRI on request	/840	55° Extra wide	/WWB	
			5000K 85+ CRI	/850	12° x 49° Oval	/OB	
			2700K 90+ CRI	/927			
			3000K 90+ CRI	/930			

***AUS/NZ:**
Add - AU - suffix to the product code e.g.
LD1094-AU-E3-350

N1

55°C Ta	7W LED at 350mA*	LD1094-N1-350	2200K 93+ CRI	/922	25° Medium spot	/MSB	
	10W LED at 500mA*	LD1094-N1-500	2700K 93+ CRI	/927	35° Medium	/MB	
	14W LED at 700mA*	LD1094-N1-700	3000K 93+ CRI	/930	46° Wide	/WB	
			4000K 93+ CRI on request	/940	65° Extra wide	/WWB	
			5000K 93+ CRI	/950	22° x 43° Oval	/OB	

***AUS/NZ:**
Add - AU - suffix to the product code e.g.
LD1094-AU-N1-350

Machine Finish

- 316 Stainless Steel
- Polished & Passivated Stainless Steel

Powder Coat

- Matt Black
- Matt White
- Antique White
- Matt Silver
- Anthracite Grey
- Gun Metal Grey
- Antique Bronze
- Earth Bronze
- Desert Bronze
- Textured Mars Bronze
- Textured Fir Green
- White Stone
- Any RAL



/CMR



/SM



/HL

Drivers
Use with 350mA, 500mA & 700mA constant current LED drivers We have a range of dimmable LED drivers DMX and DALI compatible. Please see the downloads section on our website.