Light is OSRAM

OSRAM
Opto Semiconductors

Our Brand
LED ENGIN

High Uniformity TIR Lenses for LZC Emitter Family

LLNF-4T08-H
LLFL-6T08-H
LLWF-6T08-H

Key Features

- Total Internal Reflection (TIR) optics provides a well-controlled beam
- Designed specifically for LED Engin LZC emitter family
- Provides excellent color uniformity and quantity of light in a beam
- Smooth light gradient eliminates hot spots and rings and minimizes glare for superior illumination
- UL-rated optical grade PMMA lens material allows use of high current and temperature conditions
- Lenses are available standard with holder that mount easily onto LuxiGen LZC MCPCBs
- Simple fastening of holder to MCPCB with appropriate adhesive, e.g. epoxy or polyurethane based

Typical Applications

- Down lighting
- Architectural lighting
- Entertainment
- Stage and Studio lighting
- Accent lighting

Description

This lens family couples with the compact, high-flux density LZC LuxiGen emitter family providing a range of beam options and opening up new applications in down lighting, architectural and stage and studio. The TIR lens collimates the LED light into efficient, well-controlled light beams that maximize the usable lumens in the target area. Not only does this lighting solution provide the throw or distance required for these lighting applications, it does so with a smooth, high quality beam of superior intensity uniformity, color over angle mixing, and with an absence of discomfort glare or shadows.

Optical Specification

Table 1:

Lens Description	Part number	Beam angle[1] FWHM	Field angle[2]	Optical efficiency[3]	On-axis intensity[4] (cd/lm)
Narrow Flood	LLNF-4T08-H	24°	53°	88%	2,2
Flood	LLFL-6T08-H	34°	83°	88%	1,7
Wide Flood	LLWF-6T08-H	45°	89°	88%	1,1

Notes for Table 1:

1. Beam angle is defined as the full width at 50% of the max intensity (FWHM).
2. Field angle is defined as the full width at 10% of the max intensity.
3. Optical efficiency is defined as the ratio between the incoming flux and the outgoing flux.
4. On-axis intensity is defined as the ratio between the total input lumen and the intensity in the optical center of the lens.

Typical Relative Intensity over Angle – TIR Optics

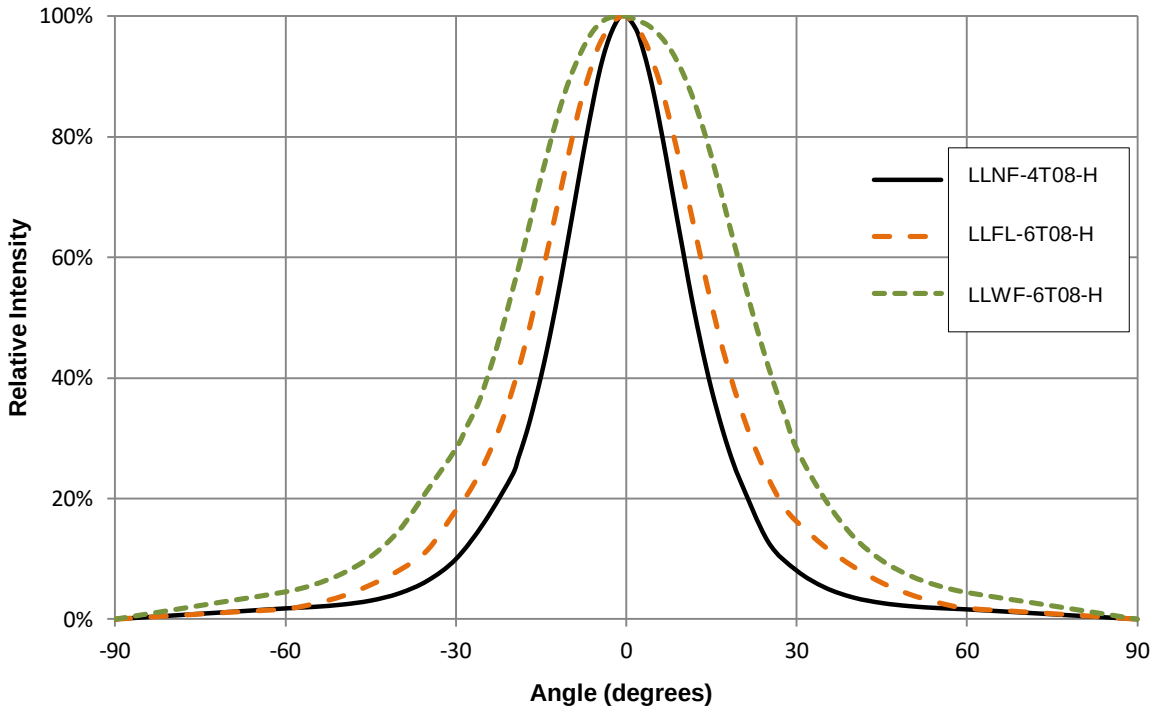


Figure 1: Typical relative intensity over angle

General Characteristics

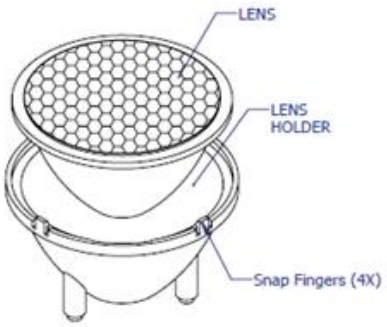
Table 2:

	Symbol	Value	Rating	Unit
Mechanical				
Height from Seating Plane		26,3	Typical	mm
Diameter		47,5	Typical	mm
Material				
Lens	PMMA	Polymethyl methacrylate	-	-
Holder	PC	Polycarbonate	-	-
Optical				
Transmission[1] (>90%)	Λ	410-1100	Min-Max	nm
Environmental				
Storage Temperature	T_{stg}	-40 ~ +110	Min-Max.	°C
Operating Temperature	T_{sol}	-40 ~ +110	Min-Max.	°C

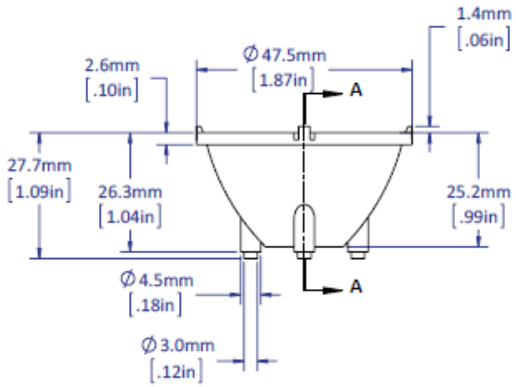
Note for Table 2:

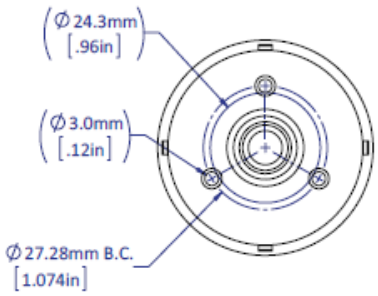
1. It is not recommended to use a UV emitter with this lens due to lower transmission at wavelengths < 410nm

Mechanical Dimensions

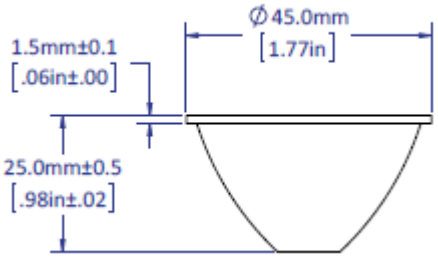


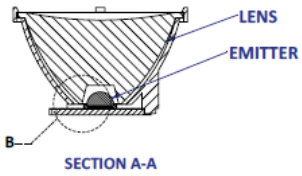
Lens with Holder

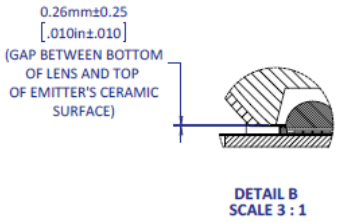




Lens only







Lens Assembly Instructions

Lens holder legs may be inserted into MCPCB mounting holes. An epoxy or polyurethane-based adhesive should be used to adhere the lens holder to the MCPCB.

While there are many suitable adhesives, LED Engin recommends Dow Corning 3145 RTV.

Cyanoacrylate adhesives (superglue) must not be used, because they are known to cause lens contamination effects due to “blooming” of the adhesive.

Lens Cleaning

For the removal of dust, use a lint-free soft cloth.

For the removal of stains, use a neutral detergent, i.e. dishwashing soap.

Do not use any solvents, abrasive liquids or abrasive fabrics because they may damage the optical grade lens surfaces.

Disclaimer

Attention please!

The information describes the type of component and shall not be considered as assured characteristics. Terms of delivery and rights to change design reserved. Due to technical requirements components may contain dangerous substances.

For information on the types in question please contact our Sales Organization.

If printed or downloaded, please find the latest version on the OSRAM OS website.

Packing

Please use the recycling operators known to you. We can also help you – get in touch with your nearest sales office. By agreement we will take packing material back, if it is sorted. You must bear the costs of transport. For packing material that is returned to us unsorted or which we are not obliged to accept, we shall have to invoice you for any costs incurred.

Product and functional safety devices/applications or medical devices/applications

OSRAM OS components are not developed, constructed or tested for the application as safety relevant component or for the application in medical devices.

OSRAM OS products are not qualified at module and system level for such application. In case buyer – or customer supplied by buyer – considers using OSRAM OS components in product safety devices/applications or medical devices/applications, buyer and/or customer has to inform the local sales partner of OSRAM OS immediately and OSRAM OS and buyer and /or customer will analyze and coordinate the customer-specific request between OSRAM OS and buyer and/or customer.

About LED Engin

LED Engin, an OSRAM brand based in California's Silicon Valley, develops, manufactures, and sells advanced LED emitters, optics and light engines to create uncompromised lighting experiences for a wide range of entertainment, architectural, general lighting and specialty applications. LuxiGen™ multi-die emitter and secondary lens combinations reliably deliver industry-leading flux density, upwards of 5000 quality lumens to a target, in a wide spectrum of colors including whites, tunable whites, multi-color and UV LEDs in a unique patented compact ceramic package. Our LuxiTune™ series of tunable white lighting modules leverage our LuxiGen emitters and lenses to deliver quality, control, freedom and high density tunable white light solutions for a broad range of new recessed and downlighting applications. The small size, yet remarkably powerful beam output and superior in-source color mixing, allows for a previously unobtainable freedom of design wherever high-flux density, directional light is required. LED Engin is committed to providing products that conserve natural resources and reduce greenhouse emissions; and reserves the right to make changes to improve performance without notice.

For more information, please contact LEDE-Sales@osram.com or +1 408 922-7200.

OSRAM Opto Semiconductors

LED Engin office:
651 River Oaks Parkway
San Jose, CA 95134
USA
408 922-7200
LEDE-Sales@osram.com
www.osram.us/ledengin