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Gammalux Lighting Systems reserves the right to change details of fixture designs and construction at any time.

## LED Lamping

## Product Overview (for complete specifications, see pages 2 & 3)

**Upgrade Capability:** LED components may be upgraded in the field to increase energy efficiency.

**Construction:** I.C. rated. Extruded aluminum housing provides superior fit and finish and is mounted in Hunter Douglas Linear Levels ceiling. Continuous runs have hairline joints. Runs of fixtures can be built to match field conditions.

**Continuous Illumination:** LED arrays can be oriented to provide consistent illumination in custom-length runs. 90+ CRI available.

**Electrical:** LED components by major manufacturers. Fixtures can be fitted with control interface devices and specialty LED components (consult factory). Standard Output, High Output and Custom Output options available.

**Optical:** Sculpted lens available in medium diffuse formulation.

## Standard Nomenclature

Manufacturer	Product	Light Levels system	Cross Section (nom)	Housing	Recessed	Output	Color Temp. (nom)	Driver Options	Mounting Method	Ceiling System	Paint Colors
Gammalux			2" x 2"			<b>S</b> Standard Output <b>H</b> High Output (If RGB, select H) <b>C</b> Custom-Programmed Output	27 2700 K    50 5000 K 30 3000 K    RGB (select 35 3500 K    output code H)* 40 4000 K	<b>DVR</b> Static Driver For Dimming Options, See pg 2	<b>REC</b> Recessed	Hunter Douglas Linear Levels system	<b>COT10</b> Match to Hunter Douglas 10% reflective Cotton White <b>COT20</b> Match to Hunter Douglas 20% reflective Cotton White <b>NAT</b> Gammalux match of Hunter Douglas Natural #7163
<b>GLL22RC2 - 1SL358 - 120V - DVR - 4' N - REC/LL - ASLMD - NAT - XX</b>											
<b>LED Arrays in X-Sec</b> 1 (for white only) 2 (for RGB only)						<b>CRI **</b> 8 for 80+ 9 for 90+		<b>Fixture Length</b> Up to 12' single-piece housings available. Specify continuous runs in total length.		<b>Length Option</b> N Nominal length S Specific length	
<b>Luminair Model</b> 2nd Generation						<b>Lamp Type</b> LED		<b>Voltage</b> 120, 277, UNIV		<b>Shielding ***</b> <b>ASLMD</b> Acrylic Satin Lens (Medium Diffuse)	
<b>Options</b> <b>BPE</b> Battery Pack EM. Kit <b>DL</b> UL Damp Label <b>EMERG</b> Emergency ckt.											

\*\*\* Shielding option is ASLMD only.

## Specifications (continued on next page)

### Electrical

**Output:** Standard (**S**) and high (**H**) options deliver a pre-set lumen package through the fixture shieldding (see chart below). Custom-programmed output (**C**) is specified as 50-99% of the high output lumen or watts-per-foot value (restrictions apply).

**Static Driver:** Osram [Optotronic](#)\* programmable driver, wired for static operation (**DVR**).

**0-10V Dimming:** Osram [Optotronic](#)\* programmable driver, wired for 0-10v control and dimming to 10% (**ZTV10**) or to 1% (**ZTV1**).

**Step Dimming:** Generic step dimming driver, two hot inputs for 100% and 50% output (**SD2**).

**DMX Dimming:** Generic DMX driver with three loose control wires exiting fixture at power feed location (**DMX**).

**DALI Dimming:** Generic DALI driver with two loose control wires exiting fixture at power feed location (**DALI**).

**Lutron Dimming:** [Hi-Lume 1%](#) via EcoSystem control (**L3DAE**). [Hi-Lume 1%](#) via 3-wire control (**L3DA3W**). [Hi-Lume 1%](#) EcoSystem with Soft-On, Fade-to-Black (**LDE1**). [5-Series](#) dim to 5% EcoSystem (**LDE5**).

**White Emitter\*:** Nichia 757G emitters binned within 3 MacAdam ellipses in Osram PrevaLED Linear or Gammalux proprietary array. 90+ CRI option (CRI code **9**) results in nom. 8% drop in efficacy; increase calculated wattage by 8%

**RGB:** Uses two rows of Osram [72618](#)\*. RGB with all channels at full output consumes approximately 11 watts per foot.

- Red channel at full output will provide approximately the same # of lumens compared to our 3,500K white at High Output.

- Green channel at full output will provide approximately 171% of lumens compared to our 3,500K white at High Output.

- Blue channel at full output will provide approximately 35% of lumens compared to our 3,500K white at High Output.

**Battery Pack:** Integral Bodine [BSL310LP](#)\* (**BPE**). 4W max input. 10W initial output.

**LED System:** 70% lumen output (L70) at max 85 degrees C calculated at >60k hours. Fixtures are shipped with anti-static gloves to minimize the risk of damage to LEDs during installation. [5 year limited warranty](#).

**Upgrade Capability:** LED assemblies can be replaced in the future with the latest factory-provided and fully warranted components.

On-board sensors, On-board sensors and control interface devices and alternate LED components may be specified (consult factory).

Max driver cross section 1.0" x 1.2". Fixtures bear UL & cUL Dry Location label. Damp Location label available (**DL**).

\*Subject to availability; may be substituted by Gammalux. Components and specifications may be changed without notice.

ESTIMATED LUMENS PER FOOT DELIVERED BY COMBINATION OF 80+ CRI LEDs AND LENS OPTION										
STANDARD OUTPUT 6.35 WPF (nom)						HIGH OUTPUT 9.4 WPF (nom)				
OPTIONS	2700 K	3000 K	3500 K*	4000 K	5000 K	OPTIONS	2700 K	3000 K	3500 K*	4000 K 5000 K
ASLMD	336.1	357.9	<a href="#">365.3</a>	379.9	387.2	ASLMD	448	477.3	<a href="#">487.0</a>	506.5 516.2

Consult factory for options on custom output or wattage consumption. \*IES files were created using 3500K boards. Values were then adjusted by a factor of .92 for 2700K, .98 for 3000K, 1.04 for 4000K and 1.06 for 5000K boards.

### Construction

**Housing:** I.C. rated. Extruded aluminum body 2.4" wide x 2.31" high, 6063T5, 0.070" min thickness. In continuous runs, each housing is 12' max unless longer housings are pre-coordinated with the factory to reduce joints and save installation labor. All fixtures are built per approved factory drawings and tested as a complete system at the factory.

**Joiner System:** Automatic alignment via two bolts for hairline seam, no loose parts. No light leaks.

**Lamping:** Runs ordered in Specific Length (Length Option **S**) require special lamping components to create consistent illumination and may have a higher than normal price per foot. Runs ordered in Nominal Length (Option **N**) may be length-adjusted at the factory to use standard lamping components. Factory drawings will show all dimensions for approval prior to production. Fixtures built to less than 4' may not achieve posted lumens per foot - consult factory.

**Mounting:** Recessed into a Linear Levels ceiling system by Hunter Douglas. Mounting brackets slide along the housing side to interface with the Hunter Douglas Universal Carrier butted against the housing or passing within 6" of the fixture end.

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## Specifications (continued)

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### Optical

**Acrylic Satin Lens, Medium Diffuse:** Snap-in. Shall be 100% DR acrylic (**ASLMD**).

See lens images on photometric pages.

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### Finish

Housing is electrostatically sprayed with high solids aliphatic two component polyurethane to an average thickness of 2 mils. over acid etching primer or commercial clear anodizing. High quality paint finish, matched to Hunter Douglas panels.

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### Packing and Shipping

Fixtures built for continuous rows are given a specific location identifier, clearly identified on factory layout drawings provided to installing contractor. Location identifier is printed on the fixture's ID Label, protective wrapping and on each end of fixture carton. Shipping pallets are built with 2" clearance, extending beyond the length and width of cartons, providing shipping protection.

Approx. weight of 4' module is 12 lbs. including carton. Weight of pallet and supplemental packing materials not factored in.

**Photometric Reports for  
STANDARD OUTPUT FIXTURES**

**FIXTURE USES LENS ASLMD (MEDIUM DIFFUSE) AND 3500 K BOARDS. @ 80+CRI**

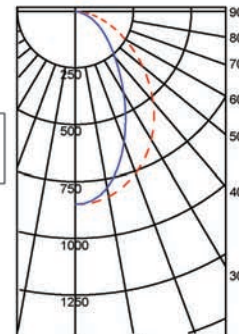
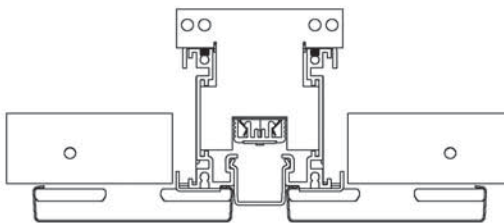
IESNA: LM 79-2008  
ISSUEDATE: 3/6/2015  
TEST: 33801 mod to MD+SO  
TESTLAB: UL Verification Services Inc.  
MANUFAC: GAMMALUX LIGHTING SYSTEMS  
LUMCAT: GLL22RC2-1SOLED35-ASLMD  
LAMPS: PLPG2-BAR-1100-835-289X38-DC

EFFICACY (Total): 57.5 LPW  
DISTRIBUTION % UP: 0%  
DISTRIBUTION % DOWN: 100%  
CIE CLASSIFICATION: DIRECT

LUMINOUS OPENING: RECTANGULAR  
Width: 0.08 (Feet)  
Length: 4.00  
Height: 0.21  
INPUT WATTS: 25.4



Acrylic Satin Lens,  
Medium Diffuse  
(ASLMD)



Quadrilaterally Symmetric  
Dashed: 0 Degrees Solid: 90 Degrees



**Photometric Reports for  
HIGH OUTPUT FIXTURES**

**FIXTURE USES LENS ASLMD (MEDIUM DIFFUSE) AND 3500 K BOARDS. @ 80+CRI**

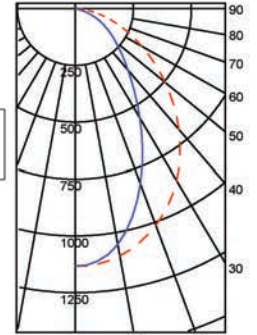
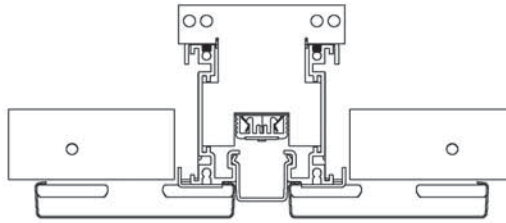
IESNA: LM 79-2008  
ISSUEDATE: 3/6/2015  
TEST: 33801 mod to MD  
TESTLAB: UL Verification Services Inc.  
MANUFAC: GAMMALUX LIGHTING SYSTEMS  
LUMCAT: GLL22RC2-1HOLED35-ASLMD  
LAMPS: PLPG2-BAR-1100-835-289X38-DC

EFFICACY (Total): 55.2 LPW  
DISTRIBUTION % UP: 0%  
DISTRIBUTION % DOWN: 100%  
CIE CLASSIFICATION: DIRECT

LUMINOUS OPENING: RECTANGULAR  
Width: 0.08 (Feet)  
Length: 4.00  
Height: 0.21  
INPUT WATTS: 35.3



Acrylic Satin Lens,  
Medium Diffuse  
(ASLMD)



Quadrilaterally Symmetric  
Dashed: 0 Degrees Solid: 90 Degrees

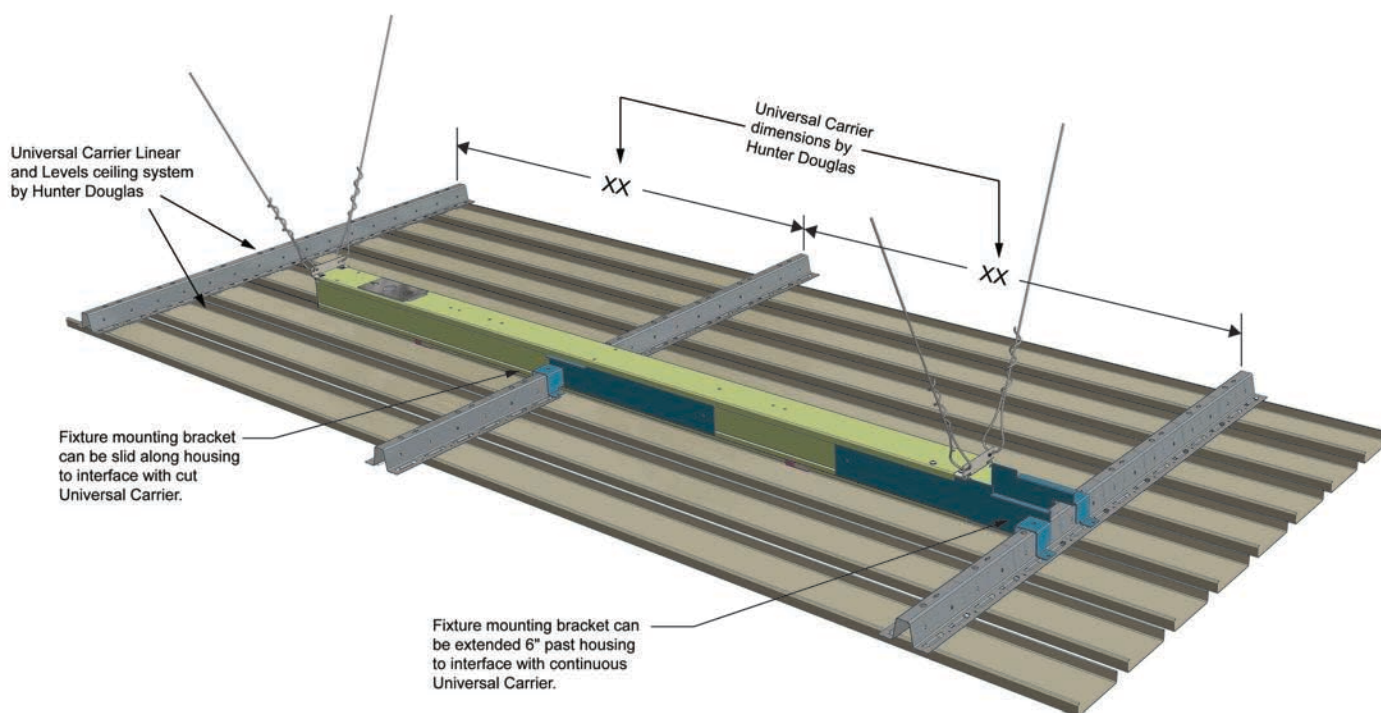




## Mounting Details

**Factory Drawings:** Fully dimensioned factory drawings will be provided upon receipt of purchase order.

### Linear Levels Integration Details



Gammalux Lighting Systems reserves the right to change the details of fixture design and construction at any time.

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## Custom Programmed Output

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**Custom Programmed Output** can be specified to produce approximate Delivered Lumens per Foot, Percentage of High Output Value or Maximum Watts per Foot.

### Delivered Lumens Per Foot

Gammalux deals only in delivered lumens per foot. When working to match or exceed a competitor product's Lumens Per Foot package, be sure you are looking at their Delivered (through the lens) lumens per foot, not their System (bare board) lumens per foot.

In the Gammalux item #, use C as the Output designator and add a fixture description stating the required Lumens Per Foot value (ie: if you need 600 lumens per foot delivered by the fixture, the line note would read "Program = 600 LPF").

### Percentage of High Output Value

If the required delivered lumens per foot are not known, run lighting calculations using our High Output IES file and identify the percentage of decrease required to produce the correct lighting in the space.

In the Gammalux item #, use C as the Output designator and add a fixture description stating the required percentage of decrease from our High Output value (ie: for 60% of our High Output value, the line note would read "Program = 60% of High Output").

### Maximum Watts Per Foot

In the Gammalux item #, use C as the Output designator and add a fixture description stating the required Maximum Watts per Foot (ie: if you need the fixtures capped at a maximum of 7 watts per foot, the line note would read "Program = 7 WPF").

For all three methods, custom programming capability is currently 50-99% of our High Output value. For requirements outside of this range, consult factory.