



FOCAL POINT®

id led 3.5" round technical guide

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Our Partner

Focal Point is partnered with Cree® for the ID LED Basic downlight. Cree is a leader in LED technology and is committed to future research and development, making them an excellent partner for the latest edition to our ID LED product line.

ID LED Basic utilizes an integrated LED module and transformer solution from Cree

Cree's TrueWhite® technology delivers high efficacy light with warm color characteristics by mixing the light from yellow and red LEDs. This enables active color management to maintain tight color consistency over the life of the product.

Cree TrueWhite technology provides:

- CRI greater than 90
- Enables modules to have same output and wattage through all color temperatures offered
- A better way to generate white light that utilizes a patented mixture of unsaturated yellow and saturated red LEDs.
- Proprietary optical system utilizes a unique combination of reflective and refractive optical components to achieve a uniform, comfortable appearance. Pixelation and direct view of LEDs is eliminated.
- Modules offer high CRI while maintaining minimal wattage.

Longevity

Life

- Published L70 rating is 35,000 hours at 70°C at the Tc
- L70=the point at which the module has depreciated to 70% light output
- Due to the thermal control features employed in the Focal Point design, we expect the life to exceed the 35,000 hour rating.
 - As of ID LED Basic launch, Cree has logged over 60,000 hours of testing for the LEDs in ID Basic module.
- Warranty: ID LED Basic is backed by a 5 year limited warranty which includes LED system and entire luminaire.

The LED system is rated for 35,000 hours at 70% lumen output (L70). Rated life and lumen output are based on a maximum temperature of 70°C at Tc point on LED module. If Tc temperature rises above rated maximum due to end use conditions, lifetime and lumen output may decrease. The 5 year limited warranty on the LED system is provided by Cree.
- Replaceable: ID LED Basic has a replaceable LED module. The lumen output, form factor and thermal management of the Cree module will remain consistent over time, so when the L70 life is reached, the luminaire remains intact and only the module must be replaced.
- Cost of Ownership: Due to the lower wattage and longer life of LED, the total cost of ownership over the life of the product is significantly less than a comparable compact fluorescent.

ID Basic outperforms 18W ID CFL and 4" 75W incandescent downlights in calculation comparisons

	ID LED Basic 3.5"		ID CFL 18W 4.5"		75W Incandescent 4"	
6' wide corridor, 8' oc	8fc	0.2wsf	5fc	0.4wsf	6fc	1.6wsf
16'x10' Conf Room, 6 luminaires	19fc room 30fc table	0.4wsf	13fc room 18fc table	0.7wsf	15fc room 20fc table	2.8wsf

Color Consistency

Cree TrueWhite® Technology

Cree TrueWhite Technology is a new way to generate white light with LEDs. This technology is elegantly simple, yet incredibly effective. It delivers high efficacy light with beautiful, warm color characteristics by mixing the light from yellow and red LEDs. This approach enables active color management to maintain tight color consistency over the life of the product.

Cree TrueWhite technology provides:

- CRI greater than 90
- Enables modules to have same output and wattage through all color temperatures offered
- A better way to generate white light that utilizes a patented mixture of unsaturated yellow and saturated red LEDs.
- Chromaticity specification within a 4-step MacAdam ellipse at each color temperature.

Dimming

For use with forward phase dimming controls. Dimming performance may vary, consult dimmer manufacturer for compatibility. Dimming range: 100-1%, low end trim may be required.

Compatible dimmers

Lutron Recommended compatible dimmers:

DVCL-153P-Diva C·L

DVSCCL-153P-Diva C·L Satin Colors

CTCL-153P-Skylark Contour C·L

AYCL-153P-Ariadni C·L

Additional dimmers tested by Cree



Manufacturer	Model / Series	Part Number(s)	Type	Compatible w/ 1 or more LMR2s	Compatible w/ 2 or more LMR2s
Cooper	Aspire	9530WS-K-L	600W STD		✓
	Aspire	9534WS-K-L	600W STD		✓
Lutron	Glyder	GLV-600-WH	600W STD	✓	✓
	Skylark	S-1000-WH	1000W STD	✓	✓
	Toggler	TGLV-600PR-WH	600W MLV	✓	✓
	Diva	DVLP-600P-WH	600W MLV		✓
	Diva	DVLP-10P-WH	1000W MLV		✓
	Glyder	GL-1000-WH	1000W STD		✓
	Lyneo	LX-10PL-WH	1000W STD		✓
Leviton	Decora	RPI06	600W STD		✓

Download the complete Cree Design Guide : http://www.cree.com/products/pdf/LEDmodules_LMR2_DG.pdf



LUTRON® Product Report Card

Manufacturer: Cree
 Model Number Tested: LMR020-0650-35F9-10100TW
 Other Model Numbers: None

Manufacturer's Description

Type of device: LED
 Operating voltage: 120V
 Input Power: 11 W
 Input Current: 0.10 A
 Input Frequency: 60Hz

Control Type: Unspecified Phase Control
 Dimming Range: Not Specified
 Output Power: Not Specified
 Lumen Output: Not Specified

Lutron Test Results

Date Tested: 1-Sep-11
 Figure of Merit: N/A
 Test Voltage: 120 V
 Test Notes: None

Lutron Recommended Compatible Products

Lutron products not in this list can be considered to be not compatible, based on our testing.

Product	Model Number	Fixtures per Dimmer		Measured Dimming Range ⁽¹⁾		Perceived Low End ⁽²⁾	Comments
		Minimum	Maximum	Low End	High End		
<i>Wallbox Dimmers</i>							
All C.L Dimmers	DV(W)CL-153P CTCL-153P	1	12	1%	100%	7%	Low end trim required
<i>Commercial Systems</i>							
Panel Module	HW/LP-RPM-4A-120	1	65	1%	100%	10%	
Panel Module	HW/LP-RPM-4U-120	1	13	1%	100%	7%	
Grafik QS	Grafik Eye QS Main Unit Family	1	5	1%	100%	7%	
Panel Module	GP (Harrier) Card	1	14	1%	100%	12%	
<i>Residential Systems</i>							
Panel Module	HW/LP-RPM-4A-120	1	65	1%	100%	10%	
Panel Module	HW/LP-RPM-4U-120	1	13	1%	100%	7%	
HomeWorks	HxD-5NE	1	27	1%	100%	7%	
Grafik QS	Grafik Eye QS Main Unit Family	1	5	1%	100%	7%	
Panel Module	GP (Harrier) Card	1	14	1%	100%	12%	
RadioRA 2	RRD-10ND	1	7	1%	100%	7%	
RadioRA 2	RRD-6NA	1	32	1%	100%	12%	
<i>Interfaces ⁽³⁾</i>							
	PHPM-WBX with DVF-103P	1	108	1%	100%	10%	Low end trim required
	PHPM-PA with QSG-6D	1	108	1%	100%	7%	
Notes:	(1) Values are based on light output using the specified dimming control, and may not be an indication of the fixture's full rated capability (2) Perceived light level percentage is the square root of the measured light level percentage, per IESNA Lighting Handbook (3) Interfaces have been tested with the listed control; any compatible dimmer may be used instead, but high end/low end light levels may vary slightly						

Test Comments: None

For any questions on this report, please contact the Lutron LED Center of Excellence at 877-DIM-LED8 or leds@lutron.com. This information was posted with the consent and cooperation of the device manufacturer. Latest test results can always be found at www.lutron.com/LEDtool.

ID LED Basic Features

- 650 lumens nominal
- Color options: 2700K, 3500K CCT
- 9.5 watts
- Supports dimming to 1% with compatible dimmers
- Minimal 5" depth
- LED Module is a comprehensive solution with driver, electronics, optics and core thermals included
- 50 degree cut off to module and image on standard downlight; 70 degree cut off on broad beam downlight
- Self-flanged clear diffuse reflector cone features superior brightness control
- Designer White reflector finish also available
- Wall washer features tilted LED module for optimal performance and includes diffusing filter
- 120V only

Beam Patterns

- The standard downlight has a 50 degree beam that focuses the light downward, and works well for conference rooms and spaces with accent lighting. Total lumen output is 572 lumens, with 839 candela at center beam.
- The Broad Beam downlight offers a 70 degree beam which puts more light onto vertical surfaces, great for corridors and washrooms. Total lumen output is 605 lumens, with 526 candela at center beam.

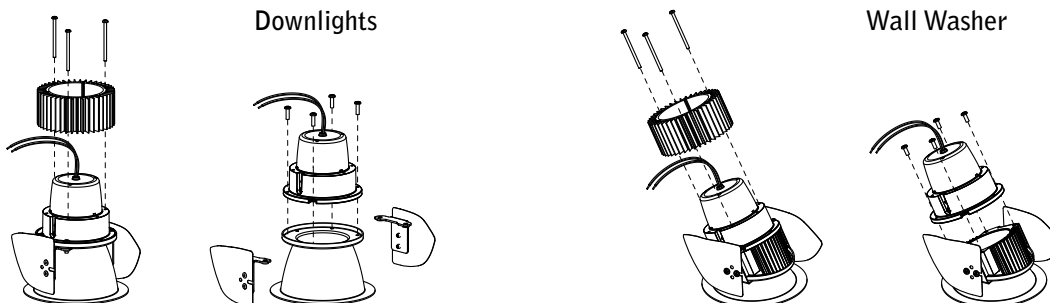
Housing Options

- The standard IC housing works for both commercial and residential construction and also complies with ASTM E-283 air-tight energy code.
- The ICW housing includes an integral j-box to allow for thru-wiring of additional branch circuits.

Replacement and Disposal

LED module replacement is simple

- Module is accessible from below
- Rotate trim clockwise to remove
- Disconnect power at quick-connect
- Remove screws on heat sink and screws attaching module to reflector.
On downlight modules remove springs.



- Attach new module to reflector cone, attach springs on downlight modules, and then reinstall heat sink on module
- Reconnect power
- Rotate trim clockwise to reinstall into housing

Disposal

- Luminaire Housing—steel—recycle
- Heat Sink—cast aluminum—recycle
- Butterfly brackets—steel—recycle
- Screws—steel—recycle
- Reflector—spun aluminum—recycle
- LED Module—electronics—recycle as e-waste
- Cable—copper with plastic connector—recycle
- Conduit—steel—recycle
- Springs—steel—recycle

Housing, reflector and heat sink remain intact through life of installation; LED module contains no mercury and may be disposed of as e-waste.

Calculations

LED luminaires are measured with absolute photometry, which is different from traditional luminaires, that are measured with relative photometry.

- Relative photometry (traditional method)—a method of testing and reporting luminaire performance using a standardized lamp output. The lamps are first tested outside the luminaire at 25°C ambient. This test is compared to the rated lamp lumens for the selected lamp and a ratio is calculated. The luminaire is then tested with the specified lamps installed in a 25°C ambient environment. The luminous intensity values of the test luminaire are multiplied by the ratio of the test lamp to the rated lamp lumens. The use of the multiplier makes all luminaires tested using the same base lamp relative to the rated lumens of that lamp, regardless of the condition of the test lamps used in performing the luminaire testing. This data can then be used to compare many luminaires to one another and a designer can take the data provided and create additional multipliers relative to a specific lamp of choice. For example, if the rated lamp lumens is 3200, but the lamp choice for a project is a low energy version generating only 2800 lumens, a multiplier of $2800/3200 = .875$ can be applied to the test data to calculate lighting system performance.
- Absolute photometry (LED)—a method of testing and reporting of the raw luminaire data, without reference to any lamp source or baseline. This test is also conducted at 25°C ambient, and operated until the LEDs are thermally stable. Absolute photometry accurately represents the exact light output of the luminaire tested, and was made necessary by the issues of thermal impact on the output of luminaires using LED sources and the lack of a standard “lamp” to use as a baseline.

Approved Testing Methods

- **IES LM-79 Approved Method: Electrical and Photometric Measurements of Solid State Lighting Products**
 - This publication describes the testing methods for performing measurements of total luminous flux, electrical power, luminous intensity distribution and chromaticity of solid-state lighting (SSL) products (luminaires) for illumination purposes. Addresses testing methods for luminaires.
- **IES LM-80 Approved Method: Measuring Lumen Maintenance of LED Light Sources**
 - This publication establishes uniform test methods to allow for a reliable comparison of test results among laboratories. It addresses measurement of lumen maintenance testing for LED light sources including LED packages, arrays and modules only. It does not provide guidance or recommendations regarding prediction estimations or extrapolations for lumen maintenance beyond the limits of the lumen maintenances determined from actual measurements. Refers to testing methods specifically for LED's or LED modules.

FAQ

What are the inherent advantages of LED?

- Long life and lower maintenance costs—this combined with lower wattages can lead to quicker payback
- High reliability
- Saturated colors
- Cool beam—because the heat goes out the back, recessed LED luminaires are not adding heat directly into the space.
- No UV or IR—damaging effects of light minimized
- Low-voltage operation
- Mercury-free
- Instant-on

What color temperatures are available?

2700K, 3500K

What happens if an LED inside the module fails to illuminate?

There will be a very slight reduction in lumen output, but no visible change in the module. The driver will continue to operate the remainder of the LED's at the appropriate current.

How does Focal Point measure lumens per watt? How is this different than efficiency?

Focal Point reports delivered lumens (from the luminaire) per watt. Efficiency is the ratio of luminous flux (lumens) emitted by a luminaire to that emitted by the lamp(s) used therein. Absolute photometry does not produce an efficiency rating because there is no baseline "lamp".

What does "delivered lumens" mean?

Delivered lumens are the lumens that are actually exiting the luminaire.

At what frequency does the system operate?

60 Hz

What is the voltage of the system?

120V only

Lumen maintenance

Lumen Maintenance of 70% (L70) is expected at 35,000 hours.

What does L70 mean?

L70 is the point at which the module has depreciated to 70% light output

What is the rated life of the LED system?

The driver is integral to the module and the entire system is rated at 35,000 hours.

What happens at end of life?

LED's do not experience end of life the same as traditional light sources. They will continue to produce light at lower and lower levels. End of life for LED's is normally defined as their L70 point.

Why are lower lumen output LED sources able to compete outperform higher lumen output CFLs in similar or smaller aperture luminaires?

The directional nature of LEDs make them an ideal source for a downlight. A smaller aperture luminaire can produce the same delivered lumens as a larger aperture CFL luminaire because the losses associated with the source are minimized. All the light coming off of the source is initially directed out of the luminaire, rather than bouncing around in a reflector, similar to how PAR lamps can deliver more light out of a given aperture size than an A lamp.

Does color shift when dimming?

No, the color does not change when the module is dimmed.

What is the dimming range?

ID LED Basic can dim as low as 1%, depending on specific dimmer used.

Is there a minimum load required for successful dimming?

Focal Point suggests reviewing the specifications for each dimmer to determine the minimum required load.

Are there recommended dimmers?

The dimmers that have been tested with the Cree module to date are:

- DVCL-153P-Diva C•L
- DVSCCL-153P-Diva C•L Satin Colors
- CTCL-153P- Skylark Contour C•L
- AYCL-153P- Ariadni C•L

Consult factory for additional dimmer options.

What is the Warranty?

The entire luminaire is backed by a 5-year limited warranty.

Can I use ID LED in a wet location?

Order ID LED Basic downlight with 'WL' for wet listed locations. All versions are damp listed.

Are there special considerations I should be aware of when performing lighting calculations?

LED luminaires are tested using absolute photometry. Each test is specific to the luminaire and LED system that is tested. Unlike changing lamp lumens to represent a different fluorescent lamp, absolute test files may not be reasonably 'lumen-ratioed' to account for other LED outputs.

What are LM79 and LM80?

- IES LM-79 Approved Method: Electrical and Photometric Measurements of Solid State Lighting Products. This publication describes the testing methods for performing measurements of total luminous flux, electrical power, luminous intensity distribution and chromaticity of solid-state lighting (SSL) products (luminaires) for illumination purposes.
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