



# MINI LED DOWNLIGHT

## MD1L RECESSED HOUSING AND TRIM LOW VOLTAGE

Project: \_\_\_\_\_

Fixture Type: \_\_\_\_\_

Location: \_\_\_\_\_

Contact/Phone: \_\_\_\_\_

### PRODUCT DESCRIPTION

The Mini LED recessed downlight is IC rated for insulated or non-insulated applications • Sleek, compact form factor provides direct accent lighting with low glare optic system that approximates the light output and distribution of 20W halogen lamps • Ideal for both residential and commercial limited space applications including niches, bookshelves, displays and cabinets • Remote mount Class 2 120V to 12V AC electronic or magnetic driver/transformer required • Designed to provide 50,000 hours of life • 5 year limited warranty on LED components.

### ENVIRONMENTALLY FRIENDLY, ENERGY EFFICIENT

- No harmful ultraviolet or infrared wavelengths
- No lead or mercury
- Comparable light output to 20W MR11 halogen lamps while consuming 5W



### PRODUCT SPECIFICATIONS

**LED Light Engine** Lumileds LUXEON® Rebel LEDs provide outstanding reliability, performance and color quality/consistency • 2700K, 3000K, 3500K or 4100K color temperatures available • 85 CRI typical.

**Optical System** Fixtures are offered with a choice of spot (16°), narrow flood (24°) or flood (35°) beam patterns • LED source concealed with lensed optic is deeply recessed into an internal reflector to produce a low glare system • Reflectors finished to match trim ring color for uniform appearance • Field replacement of optical lenses is NOT recommended.

**Transformer** Requires remote mount Class 2, 120V to 12V AC electronic or magnetic transformer for operation • Juno's **TL602E** electronic transformer and **TL576** magnetic transformer are designed specifically for use with these fixtures.

**Dimming** May be dimmed with dimmers tested and qualified by Juno for use with **TL602E** and **TL576** – see transformer specifications for compatible dimmers • Color temperature remains constant over dimming range • Consult factory for additional information.

**Life** Rated for 50,000 hours at 70% lumen maintenance.

**Labels** UL Listed for indoor damp locations and daisy chaining • Union made • UL and cUL listed • RoHS compliant.

**Testing** All reports are based on published industry procedures; field performance may differ from laboratory performance.

Product specifications subject to change without notice.

### HOUSING FEATURES

**Housing** Designed for use in IC (insulated ceiling) or non-IC construction • Die cast aluminum housing.

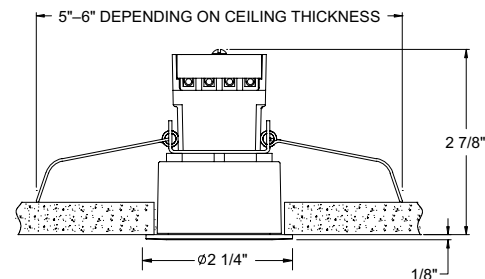
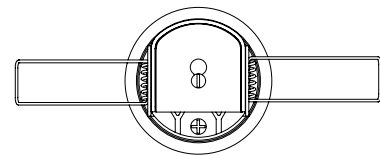
**Wiring Compartment** Provided with removable access plate • Four pole terminal block allows for quick, secure connection • UL /cUL listed for daisy chaining • Easy to wire with commonly available low voltage cable (Type CL2 or NEC equivalent, 18-12 AWG). Consult local codes for compliant wiring methods.

**Mounting** Tempered spring steel torsion clips are provided fully assembled to housing • Springs allow for fast, secure installation or removal in mounting surfaces from 1/8" to 1" thick material • 2" Cutout dimension corresponds to common hole saw size.

LUXEON is a registered trademark of the Philips Lumileds Lighting Company



### DIMENSIONS



2" CUTOUT

### ELECTRICAL DATA

Input Voltage	<b>12VAC</b>
Input Power	4.8W
Input Current - Max	0.42A
Frequency	Varies with Transformer

### ORDERING INFORMATION:

Example: **MD1L41K-NFL-SN**

Fixture	Color Temp.	Optic	Finish
<b>MD1L</b>	<b>27K</b> 2700K <b>3K</b> 3000K <b>35K</b> 3500K <b>41K</b> 4100K	<b>SP</b> Spot <b>NFL</b> Narrow Flood <b>FL</b> Flood	<b>WH</b> White <b>BL</b> Black <b>SN</b> Satin Nickel <b>BZ</b> Bronze

### Transformers

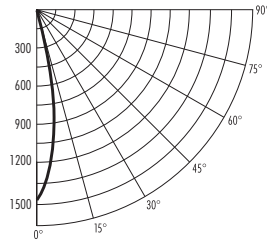
Catalog Number	Finish	Description
<b>TL602E-10-WH</b>	White	10W 12V AC Electronic Driver/Transformer
<b>TL602E-25-WH</b>	White	25W 12V AC Electronic Driver/Transformer
<b>TL602E-60-WH</b>	White	60W 12V AC Electronic Driver/Transformer
<b>TL576-10-BL</b>	Black	10W 12V AC Magnetic Driver/Transformer
<b>TL576-25-BL</b>	Black	25W 12V AC Magnetic Driver/Transformer
<b>TL576-60-BL</b>	Black	60W 12V AC Magnetic Driver/Transformer

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### PHOTOMETRIC REPORT

Test Report #: PT10102802  
Catalog No: MD1L35K-SP-WH  
Luminaire Spacing Criterion: 0.28  
Luminaire LPW: 38.6



### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees Vertical	0°
0	1453
5	1086
15	211
25	52
35	11
45	4
55	0
65	0
75	0
85	0
90	0

Multiplier: 27K - 0.92  
3K - 0.96  
41K - 1.06

### AVERAGE INITIAL FOOTCANDLES

Multiple Units (Square Array, 60'x60' room)  
Ceiling 80% Wall 50% Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	14	13	12
5.0'	9	8	7
6.0'	6	6	5
7.0'	5	5	4
8.0'	4	4	3
9.0'	3	3	3
10.0'	2	2	2

### INITIAL FOOTCANDLES (One Unit, 5W, 15.7° Beam)

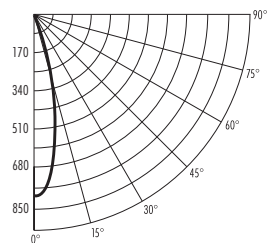
Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
4	90.8	1.1'
6	40.4	1.7'
8	22.7	2.2'
10	14.5	2.8'

### LUMINANCE (Average cd/m<sup>2</sup>)

Degrees	Average 0° Luminance
45	6377
55	0
65	0
75	0
85	0

### PHOTOMETRIC REPORT

Test Report #: LTL21544  
Catalog No: MD1L35K-NFL-WH  
Luminaire Spacing Criterion: 0.40  
Luminaire LPW: 38.2



### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees Vertical	0°
0	803
5	701
15	277
25	74
35	19
45	5
55	2
65	0
75	0
85	0
90	0

Multiplier: 27K - 0.92  
3K - 0.96  
41K - 1.06

### AVERAGE INITIAL FOOTCANDLES

Multiple Units (Square Array, 60'x60' room)  
Ceiling 80% Wall 50% Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	13	12	11
5.0'	9	8	7
6.0'	6	5	5
7.0'	5	4	4
8.0'	4	4	3
9.0'	3	3	2
10.0'	2	2	2

### INITIAL FOOTCANDLES (One Unit, 5W, 23.6° Beam)

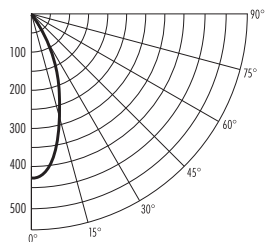
Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
4	50.2	1.7'
6	22.3	2.5'
8	12.5	3.3'
10	8.0	4.2'

### LUMINANCE (Average cd/m<sup>2</sup>)

Degrees	Average 0° Luminance
45	6171
55	3215
65	0
75	0
85	0

### PHOTOMETRIC REPORT

Test Report #: PT10102803  
Catalog No: MD1L35K-FL-WH  
Luminaire Spacing Criterion: 0.56  
Luminaire LPW: 37.2



### CANDLEPOWER DISTRIBUTION (Candelas)

Degrees Vertical	0°
0	424
5	403
15	240
25	104
35	28
45	9
55	4
65	2
75	0
85	0
90	0

Multiplier: 27K - 0.92  
3K - 0.96  
41K - 1.06

### AVERAGE INITIAL FOOTCANDLES

Multiple Units (Square Array, 60'x60' room)  
Ceiling 80% Wall 50% Floor 20%

Spacing	RCR1	RCR3	RCR5
4.0'	13	12	11
5.0'	8	8	7
6.0'	6	5	5
7.0'	5	4	4
8.0'	4	3	3
9.0'	3	3	2
10.0'	2	2	2

### INITIAL FOOTCANDLES (One Unit, 5W, 34.9° Beam)

Distance to Illuminated Plane (Feet)	Footcandles Beam Center	Beam Diameter
4	26.5	2.5'
6	11.8	3.8'
8	6.6	5.0'
10	4.2	6.3'

### LUMINANCE (Average cd/m<sup>2</sup>)

Degrees	Average 0° Luminance
45	16739
55	7738
65	7000
75	0
85	0

Fixtures tested to IES recommended standard for solid state lighting per LM-79-08. Photometric performance on a single unit at 12VAC in a 25°C ambient represents a baseline of performance for the fixture. Results may vary in the field and when multiple fixtures are used in a system.



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