

# Microlinea™ Suspended Series 2-LED



Catalog Number	Type
Project Name	

## MLS2-I/D-LED

2 1/4" x 4 1/2" Indirect/Direct Suspended Mount

### S P E C I F I C A T I O N S

#### Housing

One-piece .070" thick extruded aluminum. Die-cast aluminum end caps are secured with no visible fasteners. Standard lengths are nominal 2', 3', 4', 6', 8' and 12'. Provisions may be made for patterns and continuous rows of any length.

#### Finish

Standard and premium finishes are baked powder coat electrostatically applied (2.0 mil minimum thickness) to assure aesthetics and durability.

#### Indirect Optical Controls

- (FDC) Frosted 100% polycarbonate dust cover - Standard Distribution
- (WSOP) Wide-Spread Optic/W.S. Dist. - Open Top
- (WSDC) Wide-Spread Optic/W.S. Distribution - Clear 100% polycarbonate dust cover

#### Direct Optical Controls

(LOH) .090" thick, high transmittance extruded acrylic snap-in lens, formulated for maximum diffusion of the LED light source.

#### Reflector/Heat Sink

- Indirect - .040" thick die-formed aluminum finished with a high reflectance white enamel.
- Direct - .040" thick die-formed aluminum finished with a high reflectance white enamel.

#### Integral Controls

Contact factory for control by Occupancy Sensors, Photo Controls and Daylight Harvesting.

#### Circuitry

All fixtures are factory pre-wired for a single circuit. Provision for multiple switching/circuiting is optional.

#### Driver (Standard)

Power supply is UL/CUL recognized, 0-10V dimming available, 120-277 universal voltage. 347V is available.

#### Light Engine (Standard)

LED light source available for 3000K, 3500K, and 4000K CCT, in high and medium light outputs, and 80 or 90 CRI.

Standard outputs at 80 CRI:

- HO/HO** -High Output (Up/Dn) - Frosted Dust Cover  
\*6657 Total Del'd Lms. at 55 System Watts
- HO/HO** -High Output (Up/Dn) - W.S. Optic/Open Top  
\*6911 Total Del'd Lms. at 55 System Watts
- MO/MO** -Medium Output (Up/Dn) - Frosted Dust Cover  
\*4549 Total Del'd Lms. at 37 System Watts
- MO/MO** -Medium Output (Up/Dn) - W.S. Optic/Open Top  
\*4722 Total Del'd Lms. at 37 System Watts

(\*All values per 4' using 4000K LED modules)

#### Driver (Tunable White)

EldoLED power supply is UL recognized, DALI or DMX available, 120-277 universal voltage.

#### Light Engine (Tunable White)

Tunable White LED light source available for 2700K thru 6500K CCT, and 80 or 90 CRI. Contact factory for available outputs.

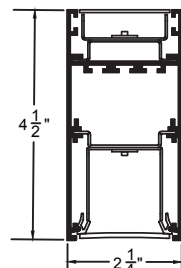
\*Due to continued advancement in LED technology, lumen performance is subject to change. Please visit our website for the most up-to-date information.

#### Wiring

All fixtures intended for continuous rows are provided with factory installed quick-connect wiring.

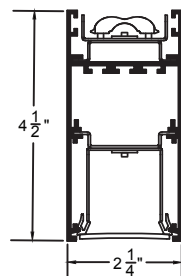
#### Certification

Fixtures are ETL listed for use in 'Dry or Damp Applications.' Conforms to UL Standard #1598 and to CAN/CSA #C22.2No.250.0.



MLS2-I/D-HO/HO-FDC/LOH  
MLS2-I/D-MO/MO-FDC/LOH

Shown with optional Frosted Dust Cover



MLS2-I/D-HO/HO-WSOP/LOH  
MLS2-I/D-MO/MO-WSOP/LOH



#### Wide-Spread Optic

The WS optic is a precisely designed, optical-grade acrylic LED-refraction system. Engineered for superior ceiling uniformity, it provides a more comfortable illuminated space while reducing energy requirements.

Sample Catalog Number: **MLS2-I/D - HO/HO - K40 - 80 - 4 - CN - WSOP / LOH - F01M - 120 - DIM1 - OPTIONS**

<p>PAL <b>MLS2-I/D</b> Suspended Indirect/Direct</p> <p>Lumen Output/4': <b>HO/HO</b> - Hi Output (FDC) = 6657 Total Lms-120 Lm/W (Using 4000K)  <b>HO/HO</b> - Hi Output (WSOP) = 6911 Total Lms-125 Lm/W  <b>MO/MO</b> - Med. Output (FDC) = 4549 Total Lms-123 Lm/W  <b>MO/MO</b> - Med. Output (WSOP) = 4722 Total Lms-128 Lm/W  <b>CO/CO</b> - Custom Output (Contact factory for available output range)</p> <p>CCT: <b>K30</b> - 3000K, <b>K35</b> - 3500K, <b>K40</b> - 4000K, <b>TW</b> - Tunable White (2700K - 6500K)</p> <p>CRI: <b>80</b> (Standard), <b>90</b> (Optional)</p> <p>Fixture Length: <b>2', 3', 4', 6', 8', 12'</b></p> <p>Mounting: <b>CN</b> = Cable (Non T-Bar) Fully Adjustable (36" Std.)</p> <p>Indirect Optical Controls: <b>FDC</b> = Frosted Polycarbonate Dust Cover    <b>WSOP</b> = Wide-Spread Optic/W.S. Distribution-Open Top  <b>WSDC</b> = Wide-Spread Optic/W.S. Distribution - Clear Polycarbonate Dust Cover</p> <p>Direct Optical Controls: <b>LOH</b> = LED Optimized High Transmittance Lens</p> <p>Standard Finish: <b>F01M</b> Matte White    Premium Finishes: <b>F01G</b> Gloss White</p>	<p><b>F02</b> Ivory</p> <p><b>F03</b> Stonewash</p> <p><b>F04</b> Camel</p> <p><b>F05</b> Gray Day</p> <p><b>F06</b> Pebble Beach</p> <p><b>F07</b> Steel</p> <p><b>F08</b> Gray Seal</p> <p><b>F09</b> Mocha</p> <p><b>F10</b> Bronzed</p> <p><b>F11G</b> Gloss Black</p> <p><b>F11M</b> Matte Black</p> <p><b>F12</b> Ultrasonic Clear</p> <p><b>F13</b> Merlot</p> <p><b>F14</b> Red Skies</p> <p><b>F15</b> Lemon</p> <p><b>F16</b> Forest Hunter</p> <p><b>F20</b> Blue Print</p> <p><b>F21</b> Reflex Blue</p> <p><b>F22</b> Navy</p> <p><b>FCC</b> Custom Color</p>
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Voltage: **120V, 277V, 347V** or **UNV** (Universal Voltage)

Dimming: **DIMX** = Standard Driver - no Dimming    **DIM1** = Standard Driver wired for Dimming - 100% to 1%    **DIM0** = Optional Driver with Dimming - 100% to 0%

Options: **SS(U/L)** = (Upper/Lower) LED Row Sep. Switching (Common Neutral)    **NLCKT** = Night-Light Circuit (Common Neutral)    **EMCKT** = Emerg. Circuit (Sep. Hot & Neutral)

**EBPHST** = Self-Test Emergency Battery Pack (10 Watt) \*N/A for 2' & 3'    **FS** = Fused Drivers    **GTD** = Generator Transfer Device    **DALI** = DALI Protocol Driver(Tun. White)

**DMX** = DMX Protocol Driver(Tun. White)    **0-10V/TW** = 0-10V Driver(Tun. White)



# Suspended - Indirect/Direct

## MLS2-I/D-HO/HO-K40-FDC/LOH



Indirect/Direct - High Output Up & Down

**Frosted Dust Cover Up/LED Optimized Lens Down**

**Catalog Number:** MLS2-I/D-HO/HO-K40-80-4'-X-FDC/LOH-120

**Report Number:** #LLIA000844-007-R01.ies

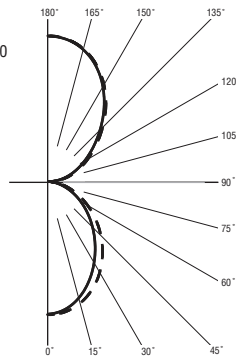
**Luminaire Description:** Extruded Aluminum Housing with White Alum. Reflectors, Frosted Dust Cover Up and LED Optimized Lens Down

**LED Module:** Multiple White Low-Power Light Emitting Diodes (LEDs) in a precise lay-out.

Total Luminaire Efficacy = 120.4 Lm/W

Color Rendering Index (CRI) = 84

53% Up 47% Down



LEGEND:  
0-deg  
90-deg

LED lighting facts®							
A Program of the U.S. DOE							
Light Output (Lumens)	6657						
Watts	55.3						
Lumens per Watt (Efficacy)	120.38						
Color Accuracy Color Rendering Index (CRI)	84						
Light Color Correlated Color Temperature (CCT)	3977 (Bright White)						
<table border="1"> <tr> <td>Warm White</td> <td>Bright White</td> <td>Daylight</td> </tr> <tr> <td>2700K</td> <td>3000K</td> <td>4500K</td> </tr> </table>		Warm White	Bright White	Daylight	2700K	3000K	4500K
Warm White	Bright White	Daylight					
2700K	3000K	4500K					
<small>All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.</small>							
<small>Visit <a href="http://www.lightingfacts.com">www.lightingfacts.com</a> for the Label Reference Guide.</small>							
<small>Registration Number: 1NRP-7W3GYF (12/26/2017) Model Number: MLS2-I/D-HO/HO-K40-XX-4-XX-FDC/LOH-XXXX-120 Type: Luminaire - Linear</small>							

## MLS2-I/D-MO/MO-K40-FDC/LOH



Indirect/Direct - Medium Output Up & Down

**Frosted Dust Cover Up/LED Optimized Lens Down**

**Catalog Number:** MLS2-I/D-MO/MO-K40-80-4'-X-FDC/LOH-120

**Report Number:** #LLIA000844-008-R01.ies

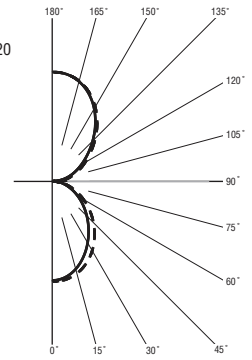
**Luminaire Description:** Extruded Aluminum Housing with White Alum. Reflectors, Frosted Dust Cover Up and LED Optimized Lens Down

**LED Module:** Multiple White Low-Power Light Emitting Diodes (LEDs) in a precise lay-out.

Total Luminaire Efficacy = 122.9 Lm/W

Color Rendering Index (CRI) = 84

53% Up 47% Down



LEGEND:  
0-deg  
90-deg

LED lighting facts®							
A Program of the U.S. DOE							
Light Output (Lumens)	4549						
Watts	37.01						
Lumens per Watt (Efficacy)	122.91						
Color Accuracy Color Rendering Index (CRI)	84						
Light Color Correlated Color Temperature (CCT)	3957 (Bright White)						
<table border="1"> <tr> <td>Warm White</td> <td>Bright White</td> <td>Daylight</td> </tr> <tr> <td>2700K</td> <td>3000K</td> <td>4500K</td> </tr> </table>		Warm White	Bright White	Daylight	2700K	3000K	4500K
Warm White	Bright White	Daylight					
2700K	3000K	4500K					
<small>All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.</small>							
<small>Visit <a href="http://www.lightingfacts.com">www.lightingfacts.com</a> for the Label Reference Guide.</small>							
<small>Registration Number: 1NRP-66L3D (12/26/2017) Model Number: MLS2-I/D-MO/MO-K40-XX-4-XX-FDC/LOH-XXXX-120 Type: Luminaire - Linear</small>							

## MLS2-I/D-HO/HO-K40-WSOP/LOH



Indirect/Direct - High Output Up & Down

**Wide-Spread Dist. - Open Up/LED Optimized Lens Down**

**Catalog Number:** MLS2-I/D-HO/HO-K40-80-4'-X-WSOP/LOH-120

**Report Number:** #LLIA000844-003-R01.ies

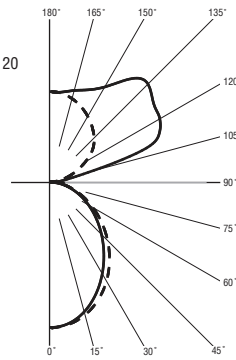
**Luminaire Description:** Extruded Aluminum Housing with White Alum. Reflectors, Acrylic W.S. Insert Up, and LED Optimized Lens Down

**LED Module:** Multiple White Low-Power Light Emitting Diodes (LEDs) in a precise lay-out.

Total Luminaire Efficacy = 124.9 Lm/W

Color Rendering Index (CRI) = 84

55% Up 45% Down



LEGEND:  
0-deg  
90-deg

LED lighting facts®							
A Program of the U.S. DOE							
Light Output (Lumens)	6911						
Watts	55.34						
Lumens per Watt (Efficacy)	124.88						
Color Accuracy Color Rendering Index (CRI)	84						
Light Color Correlated Color Temperature (CCT)	4007 (Bright White)						
<table border="1"> <tr> <td>Warm White</td> <td>Bright White</td> <td>Daylight</td> </tr> <tr> <td>2700K</td> <td>3000K</td> <td>4500K</td> </tr> </table>		Warm White	Bright White	Daylight	2700K	3000K	4500K
Warm White	Bright White	Daylight					
2700K	3000K	4500K					
<small>All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.</small>							
<small>Visit <a href="http://www.lightingfacts.com">www.lightingfacts.com</a> for the Label Reference Guide.</small>							
<small>Registration Number: 1NRP-82NQT (12/26/2017) Model Number: MLS2-I/D-HO/HO-K40-XX-4-XX-WSOP/LOH-XXXX-120 Type: Luminaire - Linear</small>							

## MLS2-I/D-MO/MO-K40-WSOP/LOH



Indirect/Direct - Medium Output Up & Down

**Wide-Spread Dist. - Open Up/LED Optimized Lens Down**

**Catalog Number:** MLS2-I/D-MO/MO-K40-80-4'-X-WSOP/LOH-120

**Report Number:** #LLIA000844-004-R01.ies

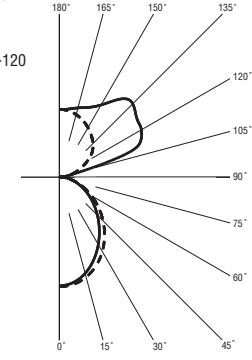
**Luminaire Description:** Extruded Aluminum Housing with White Alum. Reflectors, Acrylic W.S. Insert Up, and LED Optimized Lens Down

**LED Module:** Multiple White Low-Power Light Emitting Diodes (LEDs) in a precise lay-out.

Total Luminaire Efficacy = 127.6 Lm/W

Color Rendering Index (CRI) = 84

55% Up 45% Down



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90-deg

LED lighting facts®							
A Program of the U.S. DOE							
Light Output (Lumens)	4722						
Watts	37.02						
Lumens per Watt (Efficacy)	127.55						
Color Accuracy Color Rendering Index (CRI)	84						
Light Color Correlated Color Temperature (CCT)	3988 (Bright White)						
<table border="1"> <tr> <td>Warm White</td> <td>Bright White</td> <td>Daylight</td> </tr> <tr> <td>2700K</td> <td>3000K</td> <td>4500K</td> </tr> </table>		Warm White	Bright White	Daylight	2700K	3000K	4500K
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<small>All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.</small>							
<small>Visit <a href="http://www.lightingfacts.com">www.lightingfacts.com</a> for the Label Reference Guide.</small>							
<small>Registration Number: 1NRP-GBV3HC (12/26/2017) Model Number: MLS2-I/D-MO/MO-K40-XX-4-XX-WSOP/LOH-XXXX-120 Type: Luminaire - Linear</small>							



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For more information, visit our website at [www.pal-lighting.com](http://www.pal-lighting.com)



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