MICROLINEA™ WS LED
WIDE-SPREAD DISTRIBUTION

PAL Precision Architectural Lighting

WIDE SPREAD FOR HIGH PERFORMANCE

Introducing Microlinea WS LED, featuring advanced wide-spread optic technology that delivers better uniformity and greater lighting efficacy.
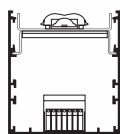
① PRECISELY DESIGNED, injection molded, optical-grade acrylic LED-refraction system

② ENGINEERED for superior uniformity in low-ceiling applications, the WS option is available in all Microlinea suspended fixtures with an indirect component

③ PRODUCES a higher-quality lighting environment for both new and retrofit installations

④ GREATER EFFICACIES up to 140 lumens/watt allow for fewer fixtures, reduced energy consumption and a lower lifetime cost
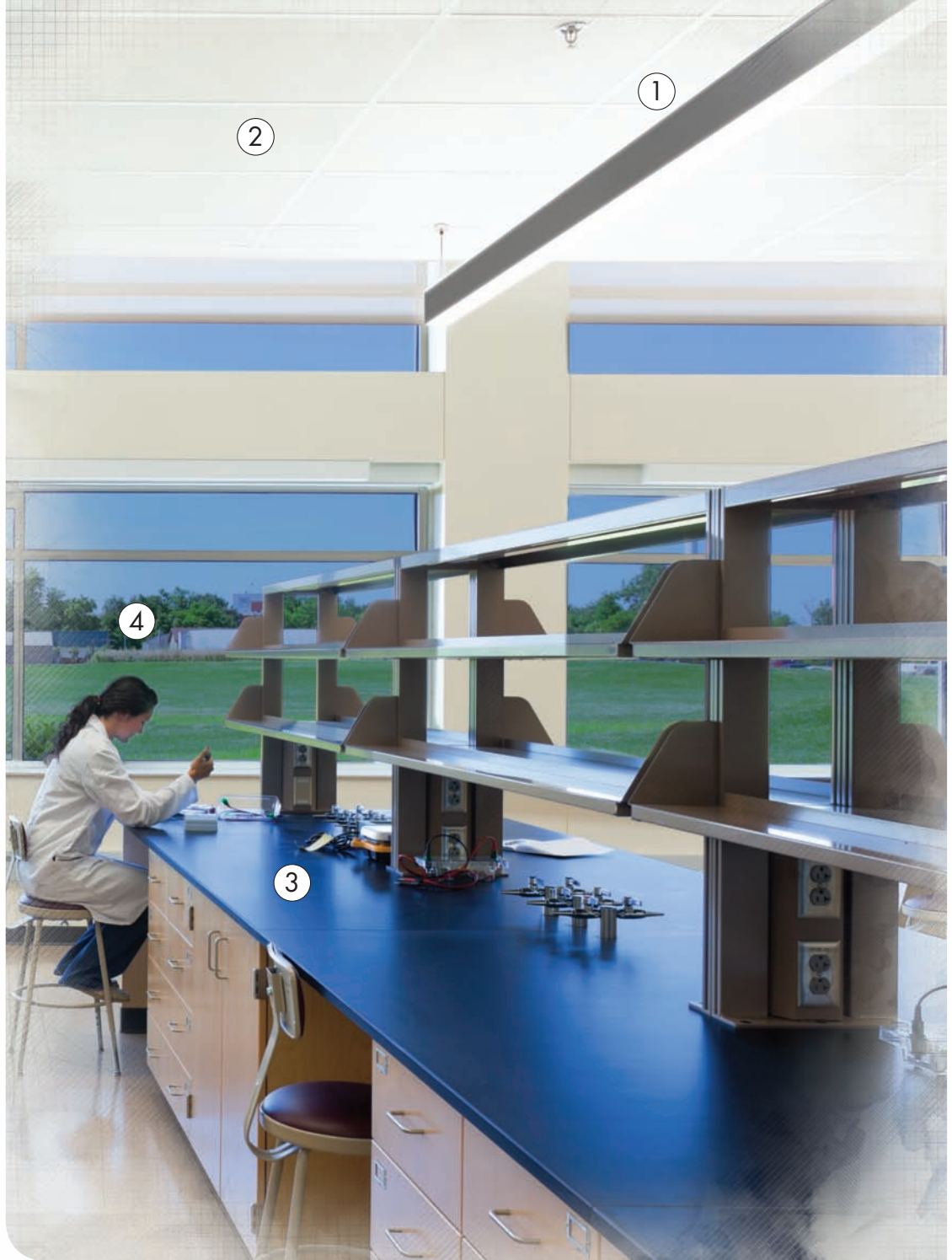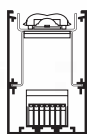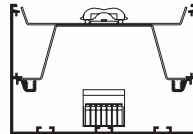
MLS2 INDIRECT   MLS3 INDIRECT   MLS5 INDIRECT

In addition to the indirect-direct configuration, the Microlinea WS LED is also available as an indirect-only fixture in 2-, 3- and 5-in. apertures.

The WS optic system was created to provide a more comfortable and inviting illuminated space while reducing energy consumption.

MICROLINEA WS SYSTEM SOLUTIONS

Another example of PAL's commitment to system solutions, the Microlinea WS LED optic system is a cost-effective performance option that provides for a more comfortable lighting environment.
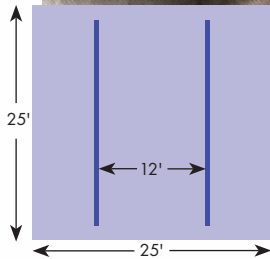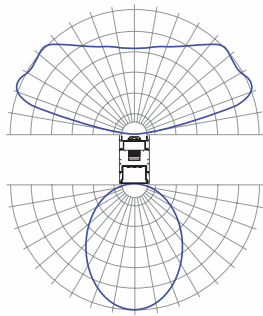
MLS2 INDIRECT/DIRECT-WSOP

Lumen Output Per Foot	1320 Lm/ft
Avg. Illuminance (Workplane)	36 fc
Watts/Sq. Ft. (LPD)	.55
Ceiling Height	10 ft
Avg./Min.– Ceiling Uniformity	4:1

Mounting Height: 8.5' A.F.F.
Fixture Length: 8'

MLS3 INDIRECT/DIRECT-WSOP
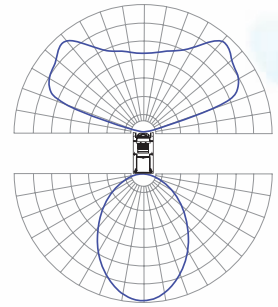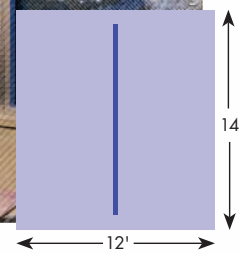
Lumen Output Per Foot	1338 Lm/ft
Avg. Illuminance (Workplane)	62 fc
Watts/Sq. Ft. (LPD)	.59
Max./Min.– Ceiling	4:1
Ceiling Height	10 ft
Avg./Min.– Ceiling Uniformity	3:1

Mounting Height: 8' A.F.F.
Mounting Centers: 12' O.C.   Fixtures: 2 rows @ 16'

MLS5 INDIRECT/DIRECT-WSOP

Lumen Output Per Foot	1237 Lm/ft
Avg. Illuminance (Workplane)	52 fc
Watts/Sq. Ft. (LPD)	.65
Max./Min.– Ceiling	5:1
Ceiling Height	15 ft
Avg./Min.– Ceiling Uniformity	3:1

Mounting Height: 13' A.F.F.
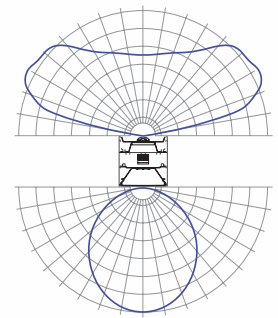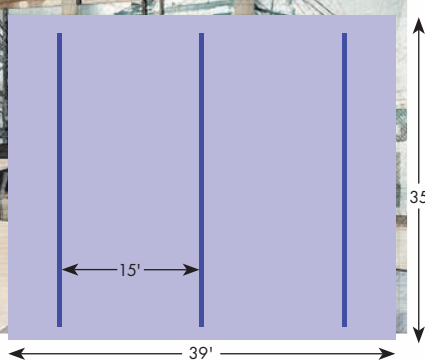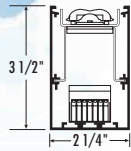Mounting Centers: 15' O.C.   Fixtures: 3 rows @ 32'
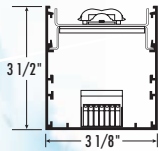
MICROLINEA™ WS LED
WIDE-SPREAD DISTRIBUTION

MLS2 INDIRECT
3 1/2"
2 1/4"

MLS3 INDIRECT
3 1/2"
3 1/8"

MLS5 INDIRECT
3 11/16"
5 1/4"

INDIRECT-ONLY FIXTURES—ORDERING NOMENCLATURE

Series
MLS2-I
MLS3-I
MLS5-I
(Indirect Only)

Mounting
CN = Cable (Non-Tbar) Fully Adjustable (36" Std.)
P = Rigid Stem (Up to 48" Standard)
K = Swivel Stem (Up to 48" Standard)

Optical Controls – Indirect Only
WSOP = Wide-Spread Optic – Open Top
WSDC = Wide-Spread Optic – Clear Dust Cover

Voltage
120
277
347

MLS2-I-HO-K40-4-CN-**WSOP**-F01M-120-[ ]

Lumen Outputs – W.S. Optic

MO = Medium Output
MLS2-Indirect:*2574 Total Lms – 139 Lm/W
MLS3-Indirect:*2408 Total Lms – 140 Lm/W
MLS5-Indirect:*2693 Total Lms – 143 Lm/W

HO = High Output
MLS2-Indirect:*3768 Total Lms – 136 Lm/W
MLS3-Indirect:*3817 Total Lms – 135 Lm/W
MLS5-Indirect:*4524 Total Lms – 135 Lm/W

*Lumen ratings per 4' section (4000K)

CCT
K30 = 3000 Kelvin
K35 = 3500 Kelvin
K40 = 4000 Kelvin

Nominal Lengths
2', 3', 4', 6', 8' and 12'

Standard Finish
F01M Matte White

Premium Finishes

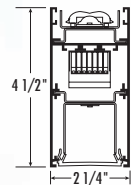|	
F01G Gloss White	**F11G** Gloss Black
F02 Ivory	**F12** Ultrasonic Clear
F03 Stonewash	**F13** Merlot
F04 Camel	**F14** Red Skies
F05 Gray Day	**F15** Lemon
F06 Pebble Beach	**F16** Forest Hunter
F07 Steel	**F20** Blue Print
F08 Gray Seal	**F21** Reflex Blue
F09 Mocha	**F22** Navy
F10 Bronzed	**FCC** Custom Color
F11M Matte Black	

Options

SS(U/L)
Upper/Lower LED Row Switching (Common Neutral)

NLCKT
Night Light Circuit (Common Neutral)

EMCKT
Emergency Circuit (Separate Hot & Neutral)

EBPL
Emergency Battery Pack (6 Watt)
*N/A for 2' & 3'

EBPH
Emergency Battery Pack (10 Watt)
*N/A for 2' & 3'

Dim10
Dimming – to 10%

Dim1
Dimming – to 1%

Dim0
Dimming – to 0%

FS
Fused Drivers

GTD
Generator Transfer

DL
Damp Location

MLS2 INDIRECT/DIRECT
4 1/2"
2 1/4"

MLS3 INDIRECT/DIRECT
5"
3 1/8"

MLS5 INDIRECT/DIRECT
5 3/8"
5 1/4"

INDIRECT/DIRECT FIXTURES—ORDERING NOMENCLATURE

Series
MLS2-I/D
MLS3-I/D
MLS5-I/D
(Indirect/Direct)

CCT
K30 3000 Kelvin
K35 3500 Kelvin
K40 4000 Kelvin

Mounting
CN = Cable (Non-Tbar) Fully Adjustable (36" Std.)
P = Rigid Stem (Up to 48" Standard)
K = Swivel Stem (Up to 48" Standard)

Nominal Lengths
2', 3', 4', 6', 8' and 12'

Direct Optical Controls
LOH = LED Optimized High Transmittance Lens

Indirect Optical Controls
WSOP = Wide-Spread Optic – Open Top
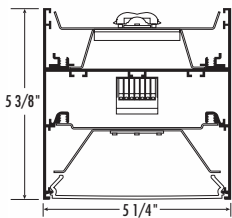**WSDC** = Wide-Spread Optic – Clear Dust Cover

Voltage
120
277
347

MLS2-I/D-HO/HO-K40-12-CN-**WSOP**/LOH-F01M-V-[ ]
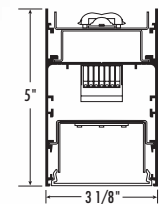
Lumen Outputs – I/D – (W.S. Optic Indirect)

MO/MO = Med. Output Up/Med. Output Dn.
MLS2-I/D:*4722 Total Lms – 128 Lm/W
MLS3-I/D:*4283 Total Lms – 123 Lm/W
MLS5-I/D:*4946 Total Lms – 132 Lm/W

HO/HO = High Output Up/High Output Dn.
MLS2-I/D:*6911 Total Lms – 125 Lm/W
MLS3-I/D:*6737 Total Lms – 118 Lm/W
MLS5-I/D:*8264 Total Lms – 124 Lm/W

*Lumen ratings per 4' section (4000K)

Standard Finish
F01M Matte White

Premium Finishes

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F02 Ivory	**F12** Ultrasonic Clear
F03 Stonewash	**F13** Merlot
F04 Camel	**F14** Red Skies
F05 Gray Day	**F15** Lemon
F06 Pebble Beach	**F16** Forest Hunter
F07 Steel	**F20** Blue Print
F08 Gray Seal	**F21** Reflex Blue
F09 Mocha	**F22** Navy
F10 Bronzed	**FCC** Custom Color
F11M Matte Black	

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EBPL
Emergency Battery Pack (6 Watt)
*N/A for 2' & 3'

EBPH
Emergency Battery Pack (10 Watt)
*N/A for 2' & 3'

Dim10
Dimming – to 10%

Dim1
Dimming – to 1%

Dim0
Dimming – to 0%

FS
Fused Drivers

GTD
Generator Transfer

DL
Damp Location