Manuals+

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COOPER
Lighting Solutions

COOPER ML Flex Series Canless LED Down Lighting

ML Flex Series – Canless LED Downlighting 3-inch Round & Square Downlights and Wall Washers

The ML Flex Series is a set of striking, high-performance fixtures available in four sizes (1, 2, 3, and 4-inch). ML Flex Canless luminaires share light engines between the two larger and two smaller aperture sizes making trim changes between size, shape (round or square), and downlight or wall wash effortless.

The ML Flex 3-inch fixtures are offered with an array of flanged downlight and wall wash trims in smooth or baffle and round or square. Control beam angles with interchangeable 25°, 40°, 55°, and 25° asymmetric wall wash optics. Customize lighting with lumen select and 5-color or Dim-to-Warm seleCCTable™ along with flicker-free dimming to less than 5% in phase cut (120V) or 0-10V (120-277V) versions. For a beautiful, quiet ceiling, install ML Flex 3-inch fixtures with a flushmount mud-in ring.

Typical Applications Residential, Hospitality, Healthcare, Retail

Top Product Features

- 3″ Canless LED Downlights and Wall Washers mount directly to the ceiling (no housing required)
- Use with canless mounting frames for new construction installations
- Trims: Flanged downlight or wall wash trims in smooth or baffle and round or square; optional flush mount mud-in ring accessories available (order separately)
- Lens: Clear lens that is field removable
- Field-interchangeable TIR optics: 25° asymmetric wall wash, 25°, 40°, and 55° (ships with 40° TIR optic)
- Color SeleCCTable™:
    - 5-color Field-SeleCCTable™ (2700/3000/3500/4000/5000K); 90+ CRI
    - Field-SeleCCTable™ Dim-to-Warm: 3000K-to-1800K or 2700K-to-1800K; 90+ CRI
- Lumen Select: Low/Medium/High = 600/800/1000 lm (nominal)
- Dimming Versions: Dims to less than 5% in either phase cut LE/TE (120V) with compatible dimmers OR 0- 10V (UNV 120-277V)
    - AIR-TITE, Wet location-listed, IC-rated
    - 50,000 hrs of maintenance-free operation
    - 5-year warranty

Order Information

Stock: 3″ ML Flex Downlights

Stock ML Flex fixtures come fully assembled and include the LED light engine, 40° TIR optic, removable clear lens, remote driver / junction box, and interchangeable trim. Optional new construction mounting frames, flushmount mud-in rings (coming soon), interchangeable TIR optics, lenses, and driver-to-light engine extension cables are also available.

Phase Cut LE/TE Dimming, 120V Input

Catalog Number	Description	Lumens (nominal)	CRI / CCT	Dimming / Driver	Trim Finish	TIR Optic
ML3LSD 2W1ER MB	3″ Round Smooth LED Canless Downlight	600 lm	90+ CRI, Field-SeleCCTable™ Dim-to-Warm 3000-to-1800K or 2700-1800K	≤5% Phase Cut LE/TE Dimming, 120V 60Hz	Matte Black (2)	40°
ML3LSD 2W1ER MW	3″ Round Smooth LED Canless Downlight	600 lm	90+ CRI, Field-SeleCC Table™ Dim-to-Warm 3000-to-1800K or 2700-1800K	≤5% Phase Cut LE/TE Dimming, 120V 60Hz	Matte White	40°
ML3LSD 2W1ES MB	3″ Square Smooth LED Canless Downlight	600 lm	90+ CRI, Field-SeleCC Table™ Dim-to-Warm 3000-to-1800K or 2700-1800K	≤5% Phase Cut LE/TE Dimming, 120V 60Hz	Matte Black (2)	40°

0–10V, Universal Voltage 120–277V (Commercial)

Catalog Number	Description	Lumens (nominal)	CRI / CCT	Dimming / Driver	Trim Finish	TIR Optic
ML3LSFSE010RMW	3″ Round Smooth LED Canless Downlight	Lumen Selectable 600/800/1000 lm	90+ CRI, 5-color Field-SeleCC Table™ CCT: 2700/3000/3500/4000/5000K	≤5% 0–10V Dimming, UNV 120–277V 50Hz/60Hz	Matte White	40°
ML3LSFSE010SMW	3″ Square Smooth LED Canless Downlight	Lumen Selectable 600/800/1000 lm	90+ CRI, 5-color Field-SeleCC Table™ CCT: 2700/3000/3500/4000/5000K	≤5% 0–10V Dimming, UNV 120–277V 50Hz/60Hz	Matte White	40°

Stock: 3″ ML Flex Wall Washers

Stock ML Flex fixtures come fully assembled and include the LED light engine, 25° Asymmetric Wall Wash TIR optic, removable clear lens, remote driver / junction box, and interchangeable trim.

Optional new construction mounting frames, flushmount mud-in rings (coming soon), interchangeable TIR optics, lenses, and driver-to-light engine extension cables are also available.

Phase Cut LE/TE Dimming, 120V Input

Catalog Number	Description	Lumens (nominal)	CRI / CCT	Dimming / Driver	Trim Finish	TIR Optic

ML3LSF S1ERW MB	3″ Round Smooth LED Canless Wall Wash	Lumen Selectable 600/ 800/1000 lm	90+ CRI, 5-color Field-SeleCCTable™ CCT: 2700/3000/3500/4000/5000K	≤5% Phase Cut LE/TE Dimming, 120V 60Hz	Matte Black (2)	25º asymmetric WW TIR optic
ML3LSF S1ERW MW	3″ Round Smooth LED Canless Wall Wash	Lumen Selectable 600/ 800/1000 lm	90+ CRI, 5-color Field-SeleCCTable™ CCT: 2700/3000/3500/4000/5000K	≤5% Phase Cut LE/TE Dimming, 120V 60Hz	Matte White	25º asymmetric WW TIR optic
ML3LSF S1ESW MW	3″ Square Smooth LED Canless Wall Wash	Lumen Selectable 600/ 800/1000 lm	90+ CRI, 5-color Field-SeleCCTable™ CCT: 2700/3000/3500/4000/5000K	≤5% Phase Cut LE/TE Dimming, 120V 60Hz	Matte White	25º asymmetric WW TIR optic
ML3LSD 2W1ES WMW	3″ Square Smooth LED Canless Wall Wash	600 lm	90+ CRI, Field-SeleCCTable™ Dim-to-Warm 3000-to-1800K or 2700-1800K	≤5% Phase Cut LE/TE Dimming, 120V 60Hz	Matte White	25º asymmetric WW TIR optic

Made to Order: 3″ ML Flex Fixtures

Stock ML Flex fixtures come fully assembled and include the LED light engine, 40° TIR

optic, removable clear lens, remote driver / junction box, and interchangeable trim. Optional new construction mounting frames, flushmount mud-in rings (coming soon), interchangeable TIR optics, lenses, and driver-to-light engine extension cables are also available.

Module	Lumens (nominal) **(1)**	CRI/CCT	Driver	Shape	Trim Type	Trim Finish
ML3 = 3″ LED LightEngine	**LS** = Lumen Selectable 600/800/1000 lm	**FS** = 90+ CRI, 5-colorField-SeleCCTable™ CCT: 2700/3000/3500/4000/5000K	**1E** = ≤5% Phase Cut LE/TE Dimming, 120V 60Hz **E010** = ≤5% 0–10V Dimming, UNV 120–277V 50Hz/60Hz(3)	**R** = Round **S** = Square	**Blank** = Downlight(3) **W** = Wall Wash(4)	**MW** = Paintable Matte White **SL** = Silver **MB** = Matte Black
		D2W = 90+ CRI, Field-SeleCCTable™ Dim-to-Warm 3000-to-1800K or 2700-1800K(1)				**MWB** = Paintable Matte White Baffle (2) **SLB** = Silver Baffle (2)**MBB** = Matte Black Baffle(2)
Notes	Notes	Notes	Notes	Notes	Notes	Notes

	1. D2W versions are 600 lumens (not lumen selectable)	1. D2W versions are 600 lumens (not lumen selectable)	3. D2W version is not available with the 0-10V driver.	3. Includes 40º TIR optic4. Wall Wash includes 25º asymmetric wall wash TIR optic	2. Wall wash trims are not available with Baffle options.

Order Information

Optional Accessories

Catalog Number	Description
Optics	
TIR4D25NFL	25° narrow flood optic (fits 3″ & 4″ ML Flex fixtures)
TIR4D40FL	40° flood optic (fits 3″ & 4″ ML Flex fixtures)
TIR4D55WFL	55° wide flood optic (fits 3″ & 4″ ML Flex fixtures)
TIR4D25AWW	25° asymmetric wall wash optic (fits 3″ & 4″ ML Flex fixtures)

TIR45M H12PK	Replacement media holder – 12-pack (fits 3″ & 4″ ML Flex fixtures)

Media Optics	
L113	Prismatic Spread Lens broadens beam patterns, creates a wide, uniform distribution of light.
L115	Linear Spread Lens fans the beam to produce a wide, rectangular pattern.
L120	Red DC Filter 2″
L121	Amber DC Filter 2″
L122	Yellow DC Filter 2″
L123	Green DC Filter 2″
L124	Daylight DC Filter 2″
LHEX	2-inch diameter matte black hex cell louver provides 45° cutoff, 50W maximum use limit.

Mud-in Ceiling Mounts
These installation plaster-frame accessories allow the fixture's flange to recess flush with the ceiling surface for a clean ceiling.

WWMA -4	Wall Wash Mounting Adjustment 4″

3MFMR	3″ Round Flushmount Mud-in Ring (coming soon)
3MFMS	3″ Square Flushmount Mud-in Ring (coming soon)

Extension Cables

Fixture-to-Junction Box Extension Cable (order separately)

Use HALO Canless Extension Cables in applications where junction boxes need to be installed further away from the fixture — either for convenience or to save on line-voltage wire. (Co-locating junction boxes makes adjustments and maintenance fast and easy.)

HLB06 FSEC	6 ft. extension cable
HLB12 FSEC	12 ft. extension cable
HLB20 FSEC	20 ft. extension cable

ML Flex New Construction Mounting Frames

Designed to ensure the proper placement and alignment of canless LED downlights in new construction projects. It features adjustable hanger bars, integrated thumb screws, and pre-installed nails for easy installation and compliance with local code requirements.
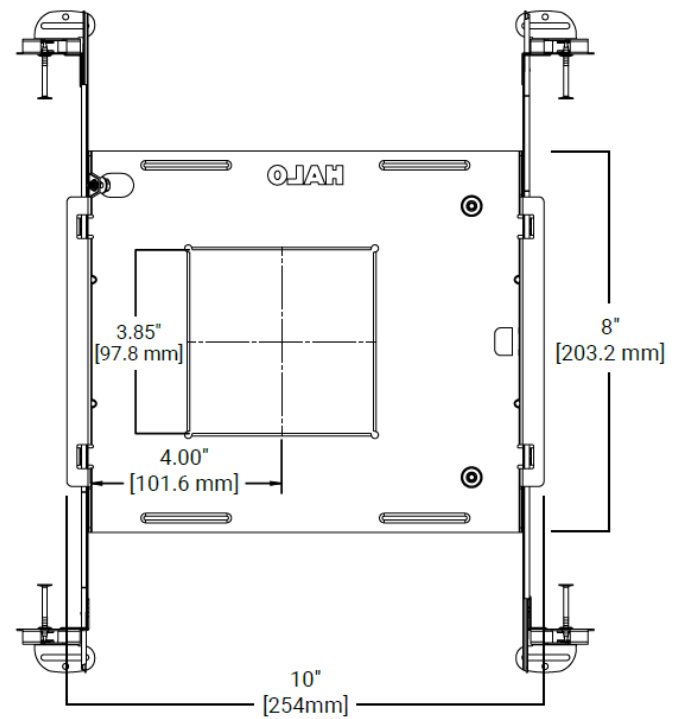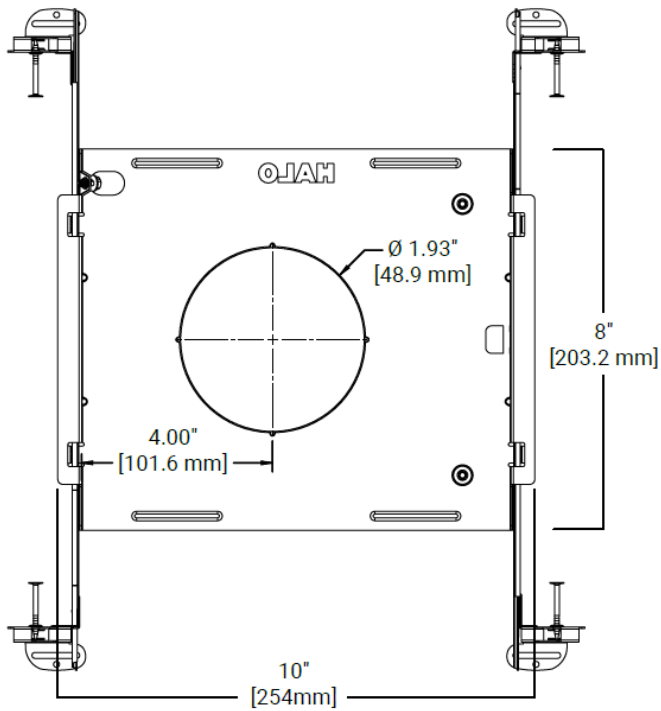
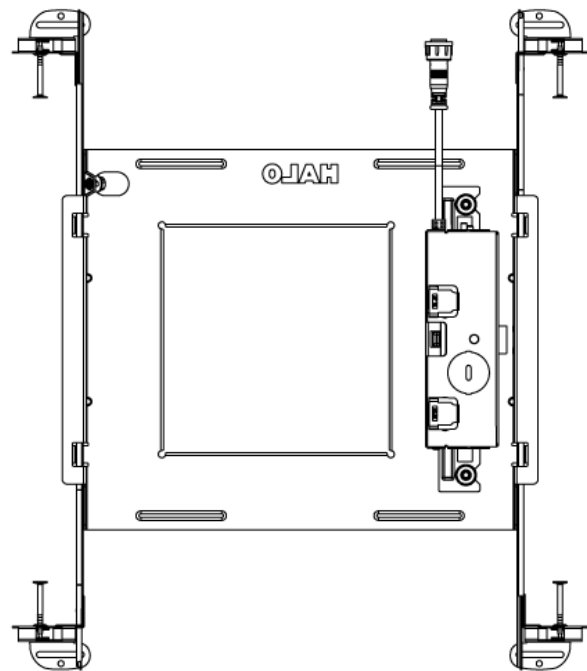| MFML3R	3″ Round ML Flex New Construction Mounting Frame
MFML3S	3″ Square ML Flex New Construction Mounting Frame

MFML3R   MFML3S

MLFPFASM3R

MLFPFASM3S

Ø 1.93"
[48.9 mm]

8"
[203.2 mm]

4.00"
[101.6 mm]

10"
[254mm]

3.85"
[97.8 mm]

4.00"
[101.6 mm]

8"
[203.2 mm]

10"
[254mm]

**DRIVER MOUNTING METHOD
FOR 3IN AND 4IN**

.63"
[15.9 mm]

PEM STUD AND THUMB
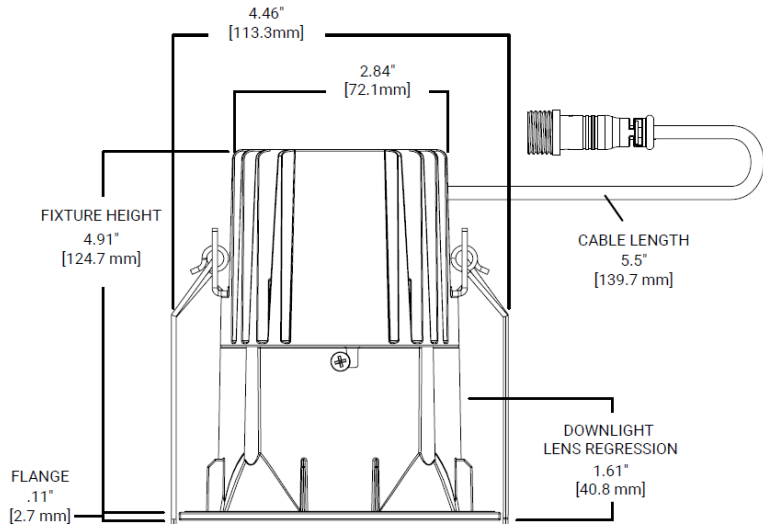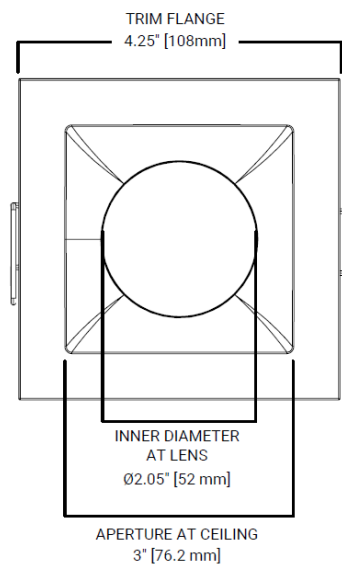NUT FOR REMOTE
DRIVER BOX MOUNTING
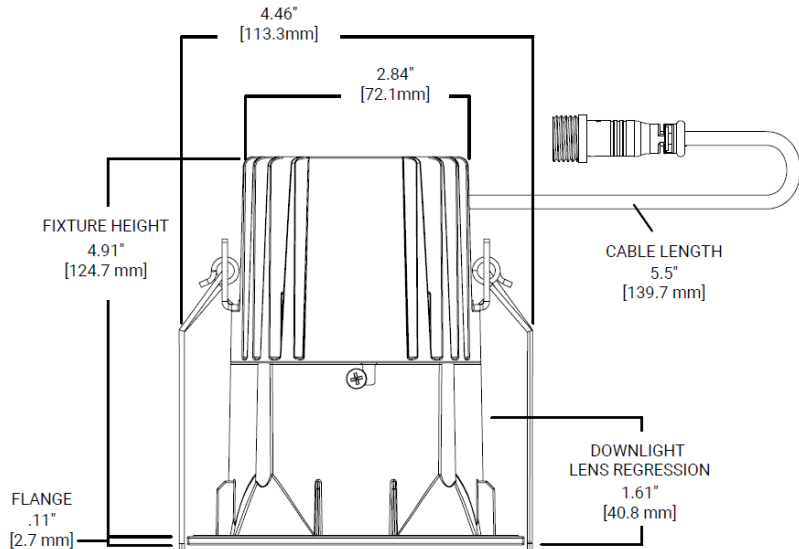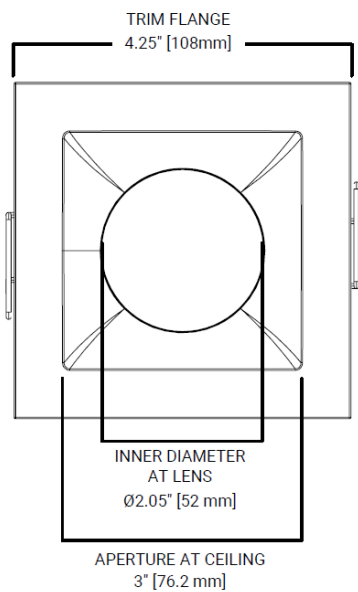IN 3IN AND 4IN
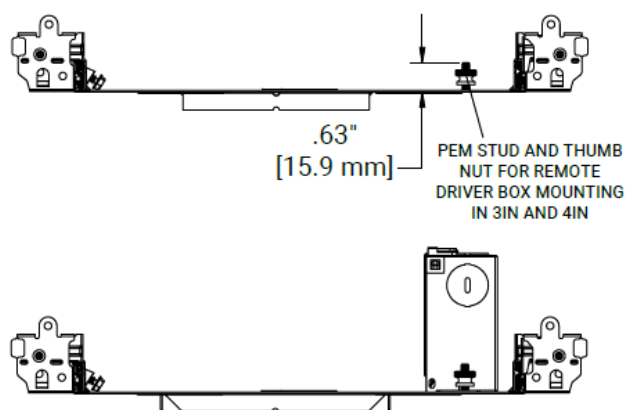
Dimensional and Mounting Details

Cut Out (Templates included in instructions and packaging)

- 3″ Round Fixture = 3-5/8″ [92mm] circle / hole saw
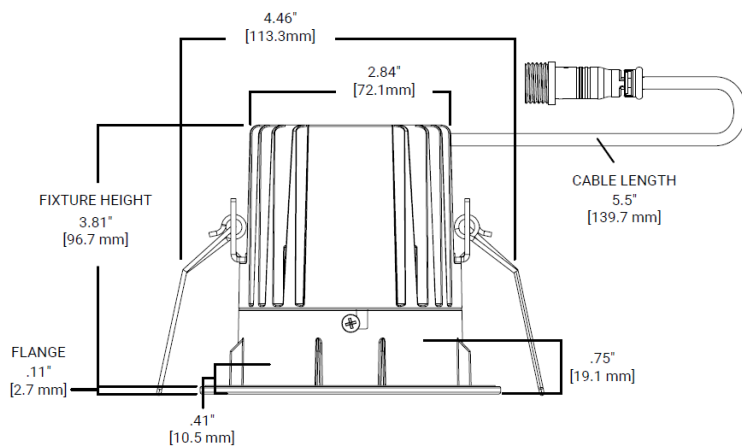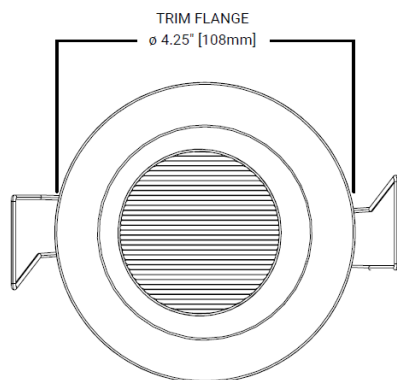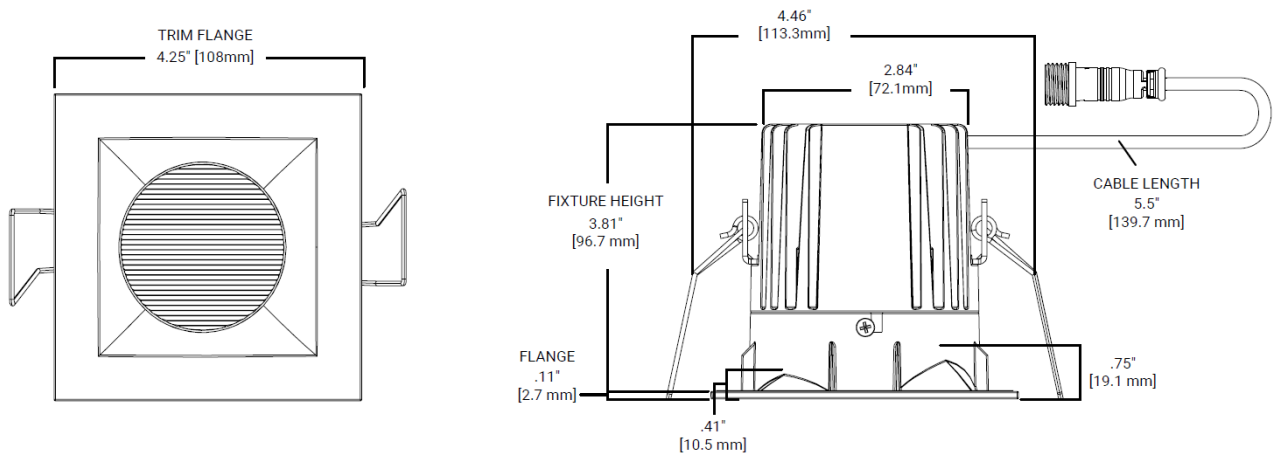- 3″ Square Fixture = 3-5/8″ [92mm] square

3″ ROUND DOWNLIGHT

TRIM FLANGE
4.25" [108mm]

INNER DIAMETER AT LENS
Ø2.05" [52 mm]

APERTURE AT CEILING
3" [76.2 mm]

4.46"
[113.3mm]

2.84"
[72.1mm]

FIXTURE HEIGHT
4.91"
[124.7 mm]

CABLE LENGTH
5.5"
[139.7 mm]

DOWNLIGHT LENS REGRESSION
1.61"
[40.8 mm]

FLANGE
.11"
[2.7 mm]

3″ SQUARE DOWNLIGHT

TRIM FLANGE
4.25" [108mm]

INNER DIAMETER AT LENS
Ø2.05" [52 mm]

APERTURE AT CEILING
3" [76.2 mm]

4.46"
[113.3mm]

2.84"
[72.1mm]

FIXTURE HEIGHT
4.91"
[124.7 mm]

CABLE LENGTH
5.5"
[139.7 mm]

DOWNLIGHT LENS REGRESSION
1.61"
[40.8 mm]

FLANGE
.11"
[2.7 mm]

3″ ROUND WALL WASH

TRIM FLANGE
ø 4.25" [108mm]

4.46"
[113.3mm]

2.84"
[72.1mm]

FIXTURE HEIGHT
3.81"
[96.7 mm]

CABLE LENGTH
5.5"
[139.7 mm]

FLANGE
.11"
[2.7 mm]

.41"
[10.5 mm]

.75"
[19.1 mm]

3″ SQUARE WALL WASH

TRIM FLANGE
4.25" [108mm]

4.46"
[113.3mm]

2.84"
[72.1mm]

FIXTURE HEIGHT
3.81"
[96.7 mm]

CABLE LENGTH
5.5"
[139.7 mm]

FLANGE
.11"
[2.7 mm]

.41"
[10.5mm]

.75"
[19.1 mm]

5-color SeleCCTable™ J-Box & Driver

6.42"
[163mm]

1.65"
[42mm]

.71"
[18.1mm]

2.85"
[72.4 mm]

5.69"
[144.6mm]

5.1"
[129mm]

CABLE LENGTH
10"
[254mm]
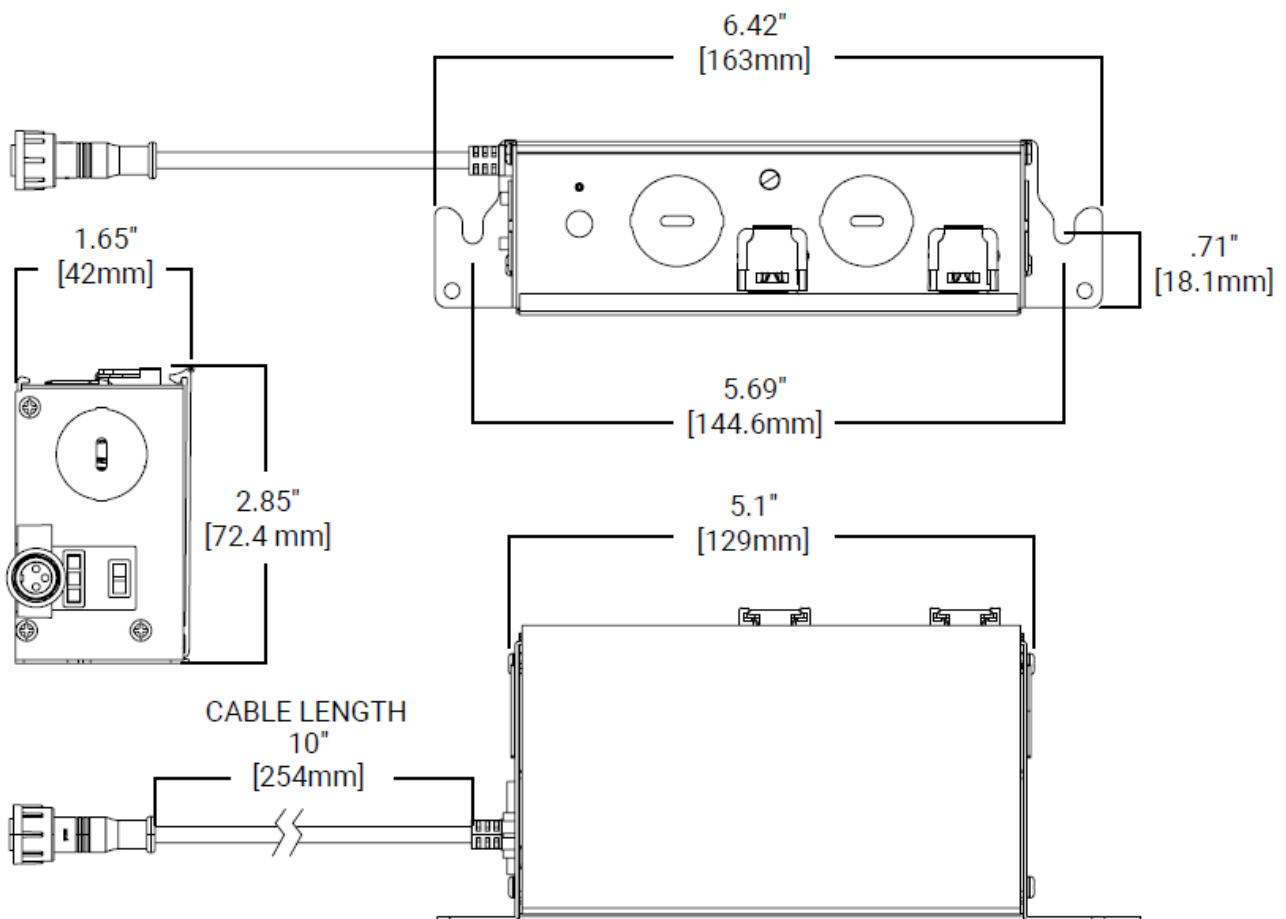
SeleCCTable™ Dim-to-Warm J-Box & Driver
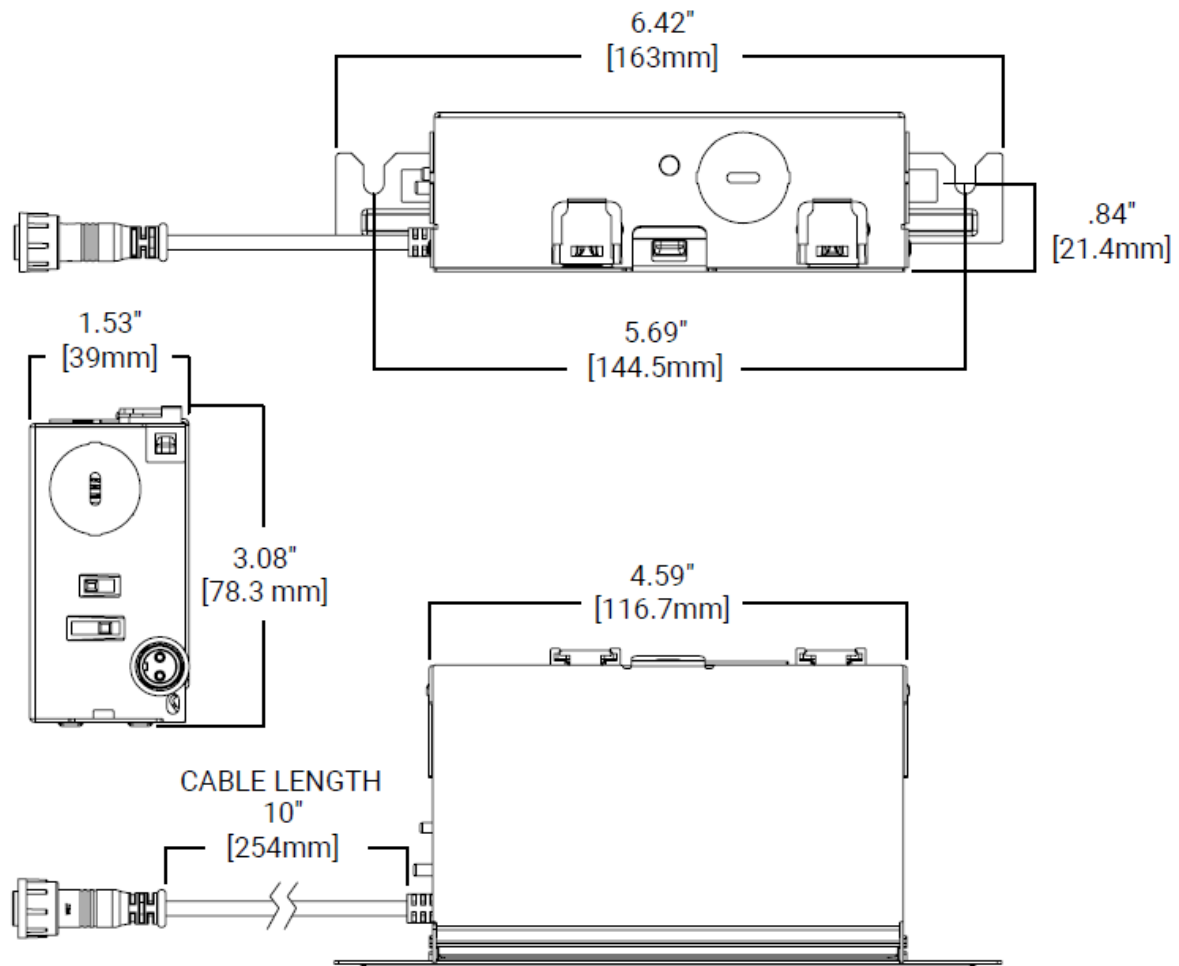
Trim Types

| 3" Round, Smooth | 3" Round, Baffle | 3" Round, Wall Wash | 3" Square, Smooth | 3" Square, Baffle | 3" Square, Wall Wash |

Product Specifications

Construction

- Die cast aluminum trims for Downlights
- Regressed painted trims as smooth or baffle
- High impact lens provides airtite and wet location

Module

- The LED recessed downlight consists of an Chip on Board LED array, optical

assembly, driver, and trim

- Achieves L70 at 50,000 hrs in IC (insulation contact) and non-IC applications

Selectable System

- Use the CCT select switch to choose between 2700K, 3000K, 3500K, 4000K, and 5000K CCT
- Use the Dim-to-Warm select switch option to choose between 3000K to 1800K or 2700K to 1800K, the light will have a warmer color temperature as the fixture dims
- Factory default is set to 3000K
- Use the 3-position Lumen Select switch to choose the brightness level (Low, Medium, High)
  Lumen Select factory default is to the highest lumen option

LED Array

- Mid-power LED array provides a uniform light source with high efficiency and no pixilation
- 90+ CRI minimum, R9 greater than 50
- Color accuracy at 3 SCDM at the endpoints and 4 SCDM in the middle provides color consistency and uniformity
- Color Temperature (CCT) is set to a factory default of 3000K

Juntion Box

- Die formed metal driver/ junction box with captive hinged junction box cover
- Listed for (6) #12 AWG 90°C splice conductors, 2- in, 2-out plus (2) ground
- 3″ fixtures – (4) ½″ conduit pry-outs
  - Accepts 14-2, 14-3, 12-2, 12-3 U.S. and 14-2, 14- 3, 12-2 Canadian NM Cable
- (2) Slide-N-SideTM non-metallic (NM) wire traps
  - Accepts 14-2, 14-3, 12-2, 12-3 U.S. and 14-2, 14- 3, 12-2 Canadian NM Cable
- (3) 4-port push wire nuts with clear caps for quick and reliable mains voltage connection

Driver

- Available in 120V 60Hz or 120V-277 50/60Hz, constant current driver provides noise-free, high-efficiency operation
- Dimmable: Continuous, flicker-free dimming from 100% to 5% with:
  - Compatible leading or trailing edge (LE/TE) 120V phase cut dimmers; (See Dimming Guide for compatible dimmers.)
  - Optional 0-10V 120V-277V dimmers; (See Dimming Guide for compatible dimmers)
  - Tip: For optimal dimming performance, consider dimmers with low-end trim adjustment; Note that some dimmers require a neutral wire in the box.
- Wiring: Includes quick connect push connectors for mains power connections.
- Plenum rated inline electrical quick connect provides low voltage connection to fixture fitting, CMP/FT6 rated

Installation

- Can be installed in 3/8″ to 1-1/2″ thick ceilings
- Round or Square ceiling cutout
- Heat treated springs hold fixture fitting securely in the ceiling eliminating light leaks
- Can be removed from below the ceiling for service or replacement

Mounting Frame

- Galvanized steel mounting frame with offset aperture and integral bar hanger receivers
- Locking screws provide positive horizontal locking
- Captive thumbscrews provide toolless attachment of the fixture's remote driver / junction box to the mounting frame for wiring during rough-in phase
- 1/2" drywall collar included to improve hole locating and drywall cutting process
- Collar is notched at 90° intervals for laser centering
- GOT NAIL! Gen 3 bar hangers adjust from 8" to 24" wide
- Pass thru feature allows shortening without removal
- Captive nail penetrates standard and engineered lumber
- Mounting flange levels platform with ceiling
- Integral clip attaches directly to tee-bar.

Airtite

- The Downlights meet Airtight ASTM-E283 requirements without gasket as long as lens is included in trim (default)

Trim Options

- Round and Square die cast trims are available in multiple colors
    - Matte White
    - Silver
    - Matte Black
- Trim cut off to reduce glare provides 55° cut off in the 3″ Downlights
- Die cast trims are available in smooth and baffle
- Flush mount mud in flange is available in 3″ luminare sizes
- Rimless trim and mud in flange is available in the 4″ downlight

Compliance

- UL Certified US and Canada Type IC suitable for direct contact with air permeable insulation
- Suitable for installation in plenum spaces
- Wet location listed with included lens
- Airtight per ASTM-E283 with installed lens (no gasket necessary)
- Suitable for use in clothes closets when installed in accordance with the NEC 410.16 spacing requirements
- EMI/RFI emissions per FCC 47CFR Part 15 consumer limits
- Contains no mercury or lead and RoHS compliant(1)
- Photometric testing in accordance with IES LM-79-08
- Lumen maintenance projections in accordance with IES LM-80-08 and TM-21-11
- Can be used for State of California Title 24 high efficacy LED compliance under JA8(1), reference Modernized Appliance Efficiency Database System (MAEDBS) for 2022 JA8 High Efficacy Lighting

Warranty

Five year limited warranty, consult website for details. www.cooperlighting.com/warranty

Summary

	1″	2″	3″	4″
CCT	2700K/3000K/3500K/4000K/5000K			
Warming Dimming (option)	1800K-3000K or 1800K-2700K			
Lumens	100/200/400	200/400/550	400/800/1000	600/900/1200
Downlight	✓	✓	✓	✓
Wall Wash			✓	✓
Adjustable		✓	✓	✓
Optics	25º/40º/55º TIR Optics		25º asymmetric wall wash/25º/40º/55º TIR optics	
Cut Off	55°	55°	55°	50°
Input Voltage	120V or 120V-277V			
Dimming	Phase 120V or 0-10V 120V-277V			
Optical Accessories			Honeycomb Louver Soft Focus Clear Glass Red Dichroic Filter Prismatic Spread Blue Dichroic Filter Linear spread Green Dichroic Filter Diffuse Sand Blasted	

Trim Finishes	Matte Black Matte White Silver			
Trim Shapes	Round or Square			
Trim Options	Round Smooth Round Baffle Square Smooth Square Baffle			
Ceiling Applications	Flange Flushmount Mud-in Mounting Frame	Flange Flushmount Mud-in Mounting Frame	Flange Flushmount Mud-in Mounting Frame	Flange Flushmount Mud-in Mounting Frame
Standards	UL/ Title 24 JA8 (1)(2)			
Ratings	Wet location (when lens is installed, default) / Airtight (when lens is installed, default)			
LED Lifetime	L70 to 50,000 hrs			
Warranty	5 years			

Energy Data

ML3 Triac (High Lumen)	120V
Input Power(W)	13.9
Input Current(A)	0.118
PF	> 0.9

THDi(%)	< 20
Inrush Current(A)	0.98
Inrush Duration(µs)	98
Sound(dBA)	< 22

ML3 Triac (Mid Lumen)	120V
Input Power(W)	11.18
Input Current(A)	0.096
PF	>0.9
THDi(%)	< 20
Inrush Current(A)	0.96
Inrush Duration(µs)	95
Sound(dBA)	< 22

ML3 Triac (Low Lumen)	120V
Input Power(W)	8.41
Input Current(A)	0.073
PF	>0.9
THDi(%)	< 20

Inrush Current(A)	0.94
Inrush Duration(μs)	92
Sound(dBA)	< 22

ML3 D2W	120V
Input Power(W)	9.2
Input Current(A)	0.078
PF	>0.9
THDi(%)	< 20
Inrush Current(A)	0.68
Inrush Duration(μs)	96
Sound(dBA)	< 22

ML3 0-10V (High Lumen)	120V	277V
Input Power(W)	14.2	13.9
Input Current(A)	0.118	0.052
PF	> 0.9	>0.9
THDi(%)	< 20	< 20
Inrush Current(A)	0.71	1.39
Inrush Duration(μs)	131	142

Sound(dBA)	< 22	< 22

ML3 0-10V (Mid Lumen)	120V	277V
Input Power(W)	12.8	12.6
Input Current(A)	0.106	0.047
PF	> 0.9	>0.9
THDi(%)	< 20	< 20
Inrush Current(A)	0.69	1.35
Inrush Duration(μs)	125	139
Sound(dBA)	< 22	< 22

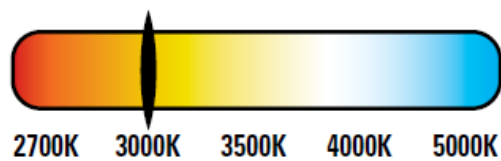| ML3 0-10V (Low Lumen)	120V	277V
Input Power(W)	10.16	10.3
Input Current(A)	0.096	0.04
PF	> 0.9	>0.9
THDi(%)	< 20	< 20
Inrush Current(A)	0.65	1.22
Inrush Duration(μs)	121	128
Sound(dBA)	< 22	< 22

Energy & Performance Data

COLOR METRICS – TM-30-15 & CRI/CIE (3000K)

90 CRI Color Metric Summary – 3000K*
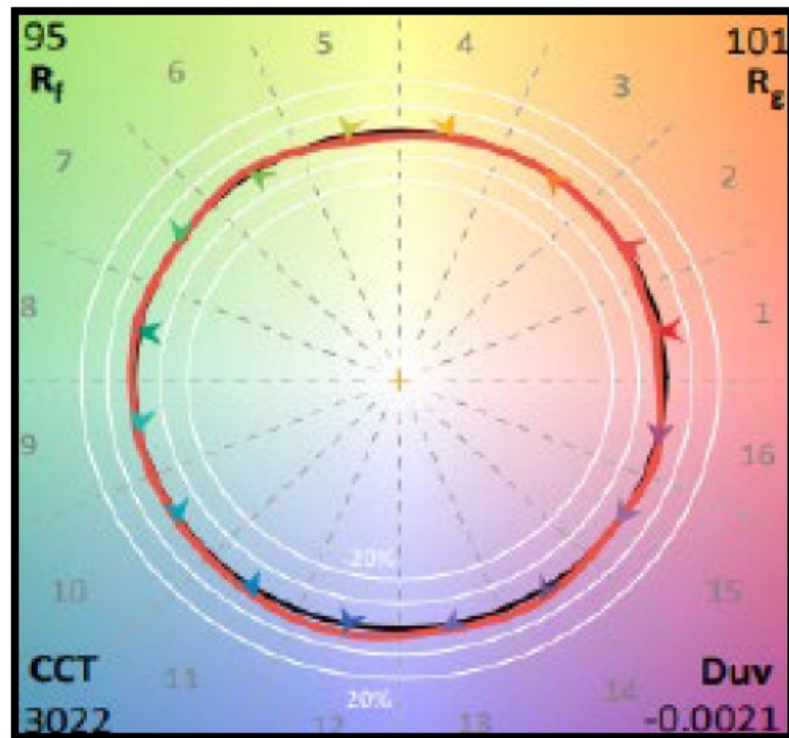
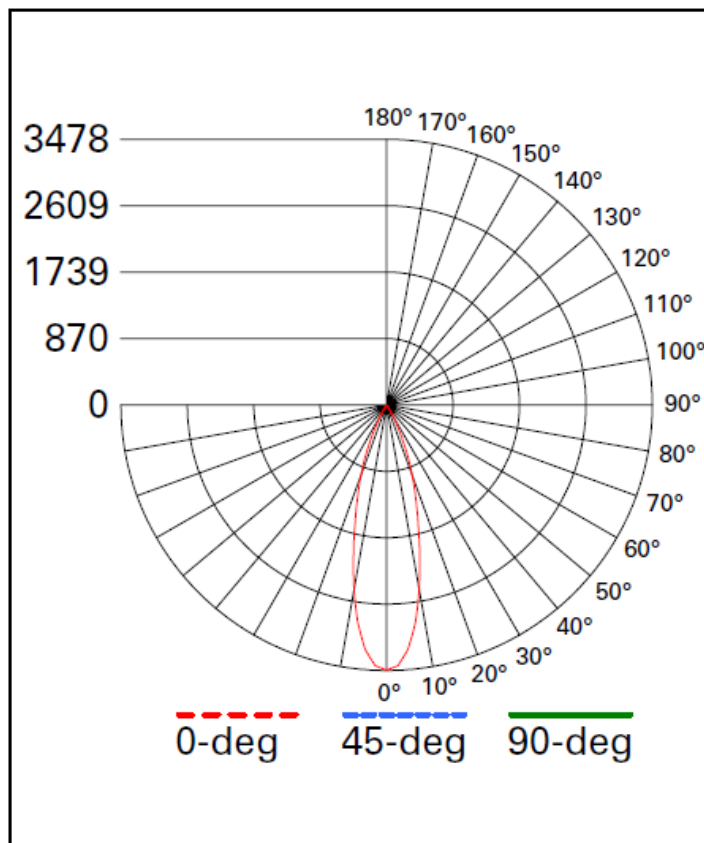| Reference Illuminant | Test Source |

TM-30-15	Rf = 95
	Rg = 101
CRI/CIE	Ra = 97.4
	R9 = 88.0

2700K 3000K 3500K 4000K 5000K

Photometric Data

3″ ROUND – NARROW FLOOD DISTRIBUTION – MATTE WHITE FINISH, 90 CRI, 3000K

3″ ROUND	
Test Number	P886688
	ML310LS-
Fixture	FL9FS1E-TIR4D-
	25NFL-TL3RD-
	MW-1000LM-3000K
Lumens	1084 Lm
Watts	13.8 W
Efficacy	78.6 Lm/W
SC	0.47
Beam Angle	27°
UGR	11

CANDLEPOWER DISTRIBUTION

Downlight

	180° 170° 160°
3478	150°
2609	140°
1739	130°
870	120°

(polar intensity distribution diagram with angle markings 0°–180° and scale 0, 870, 1739, 2609, 3478)

- - - - 0-deg   · · · · 45-deg   —— 90-deg

CONE OF LIGHT

0° D
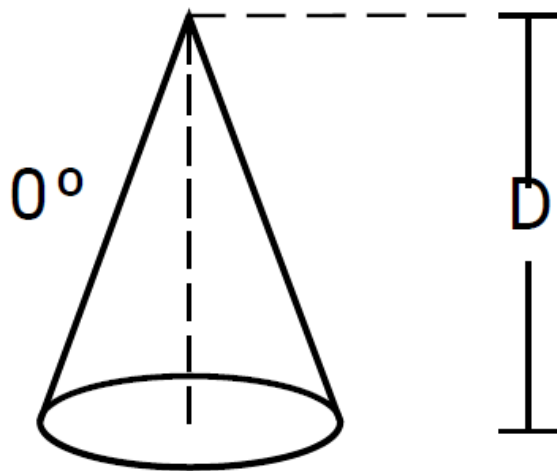
MH	FC	L	W
5.5′	115	2.4	2.4
7′	71	3.2	3.2
8′	54.3	3.6	3.6
9′	42.9	4.2	4.2

10′	34.8	4.6	4.6
12′	24.2	5.6	5.6

CANDELA TABLE

Degrees Vertical	Candela
0	3478
5	3219
15	1597
25	494
35	66
45	25
55	21
65	17
75	10
85	3
90	0

ZONAL LUMEN SUMMARY

Zone	Lumens	% Fixture
0-30	966	89.1
0-40	1016	93.7
0-60	1054	97.2

0-90	1084	100
90-180	0	0
0-180	1084	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	7722
55	7914
65	8613
75	8811
85	7799

Values are nominal for matte white reflectors, other may vary.
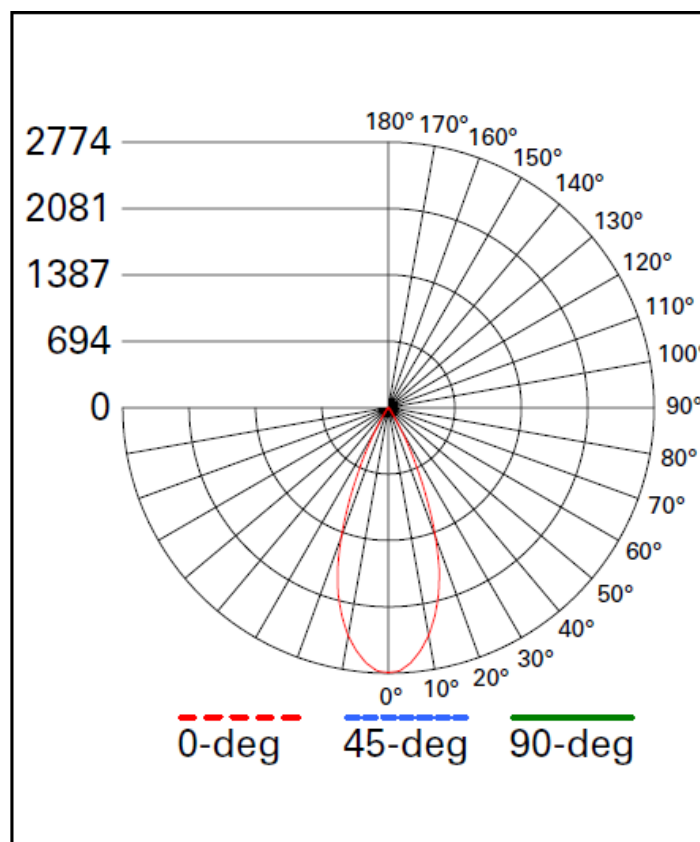
- SC = Spacing Criteria
- UGR = Unified Glare Rating

3″ ROUND – FLOOD DISTRIBUTION – MATTE WHITE FINISH, 90 CRI, 3000K

3″ ROUND	
Test Number	P886718
	ML310LS-
Fixture	FL9FS1E-TIR4D-

	40FL-TL3RD-
	MW-1000LM-3000K
Lumens	1242 Lm
Watts	13.8 W
Efficacy	90 Lm/W
SC	0.67
Beam Angle	40°
UGR	11

CANDLEPOWER DISTRIBUTION

Downlight

CONE OF LIGHT	
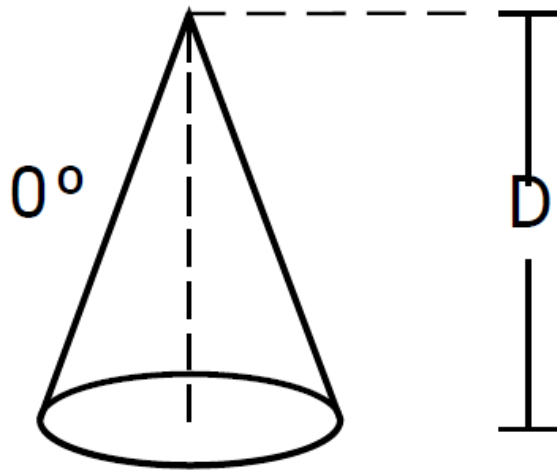
MH	FC	L	W
5.5′	91.7	3.6	3.6
7′	56.6	4.6	4.6
8′	43.3	5.2	5.2
9′	34.2	6	6
10′	27.7	6.6	6.6
12′	19.3	8	8

CANDELA TABLE	
Degrees Vertical	Candela
0	2774
5	2682
15	2026
25	747
35	56
45	16

55	14
65	10
75	6
85	2
90	0

ZONAL LUMEN SUMMARY

Zone	Lumens	% Fixture
0-30	1147	92.4
0-40	1198	96.5
0-60	1223	98.5
0-90	1242	100
90-180	0	0
0-180	1242	100

LUMINANCE

Average Candela Degrees	Average 0° Luminance
45	4807
55	5161
65	5396

75	5253
85	5284

Values are nominal for matte white reflectors, other may vary.

- SC = Spacing Criteria
- UGR = Unified Glare Rating

CCT Multipliers – 90CRI

2700K	3000K	3500K	4000K	5000K
0.97	1.00	1.03	1.07	1 .13

Multipliers may be used to determine other relative CCT values

Color Finish Multipliers

| Finish code	MW	SL	MB	MWB	SLB	MBB
Finish	Matte White	Metallic Silver	Matte Black	Matte White Baffled	Metallic Silver Baffled	Matte Black Baffled
Multiplier	1.00	0.98	0.94	1.00	0.99	0.95

3″ ROUND – WIDE FLOOD DISTRIBUTION – MATTE WHITE FINISH, 90 CRI, 3000K

3″ ROUND	
Test Number	P886748
	ML310LS-

Fixture	FL9FS1E-TIR4D-
	55WFL-TL3RD-
	MW-1000LM-3000K
Lumens	1187 Lm
Watts	13.8 W
Efficacy	86 Lm/W
SC	0.82
Beam Angle	52°
UGR	11

CANDLEPOWER DISTRIBUTION

Downlight
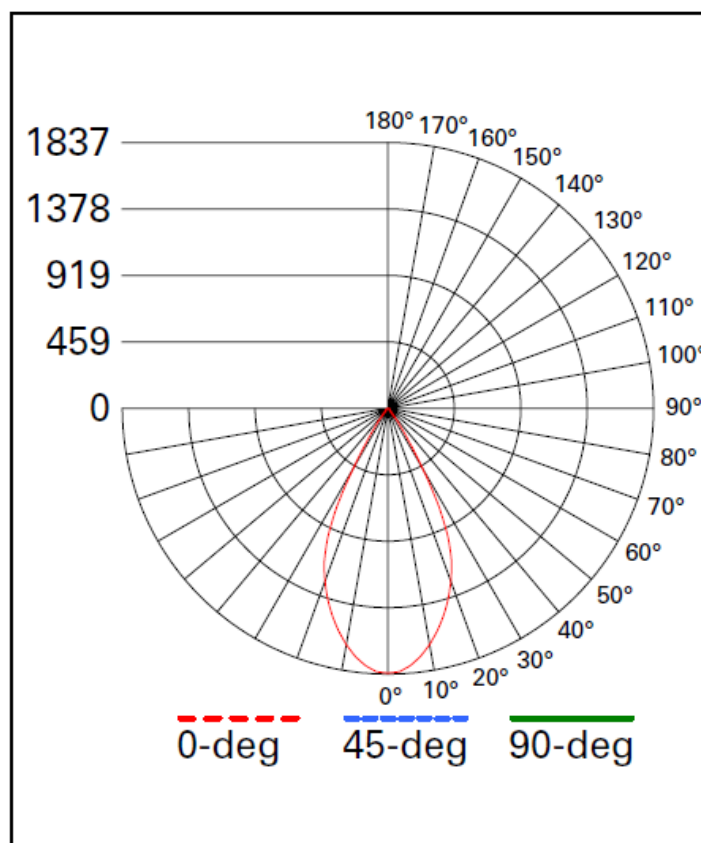
CONE OF LIGHT
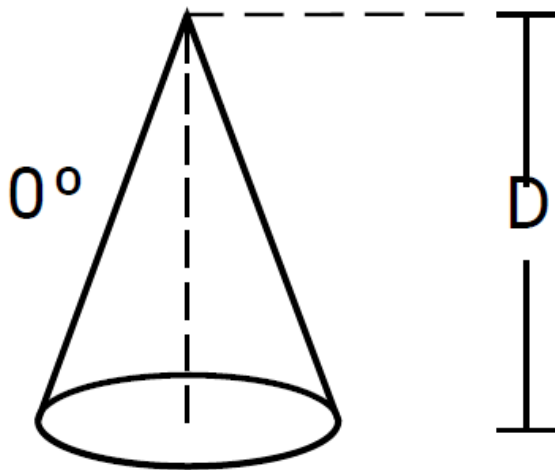
MH	FC	L	W
5.5′	60.7	4.4	4.4
7′	37.5	5.6	5.6
8′	28.7	6.4	6.4
9′	22.7	7.4	7.4
10′	18.4	8.2	8.2
12′	12.8	9.8	9.8

CANDELA TABLE

Degrees Vertical	Candela
0	1837
5	1792
15	1491
25	990
35	157

45	21
55	18
65	14
75	8
85	2
90	0

ZONAL LUMEN SUMMARY

Zone	Lumens	% Fixture
0-30	1010	85.1
0-40	1128	95.1
0-60	1162	97.9
0-90	1187	100
90-180	0	0
0-180	1187	100

LUMINANCE

Average Candela Degrees	Average 0° Luminance
45	6419
55	6729

65	7005
75	7032
85	5284

Values are nominal for matte white reflectors, other may vary.

- SC = Spacing Criteria
- UGR = Unified Glare Rating

CCT Multipliers – 90CRI

2700K	3000K	3500K	4000K	5000K
0.97	1.00	1.03	1.07	1 .13

Multipliers may be used to determine other relative CCT values

Color Finish Multipliers

| Finish code	MW	SL	MB	MWB	SLB	MBB
Finish	Matte White	Metallic Silver	Matte Black	Matte White Baffled	Metallic Silver Baffled	Matte Black Baffled
Multiplier	1.00	0.98	0.94	1.00	0.99	0.95

WALL WASH DISTRIBUTION – MATTE WHITE FINISH, 90 CRI, 3000K

3″ ROUND	
Test Number	P886648

	ML310LSFL9FS1E-
Fixture	TIR4D25AWW-
	TL3RMW-1000LM-
	3000K
Lumens	834 Lm
Watts	13.8 W
Efficacy	60.4 Lm/W
SC	0.81

CANDLEPOWER DISTRIBUTION

Downlight

| 0-deg | 45-deg | 90-deg |
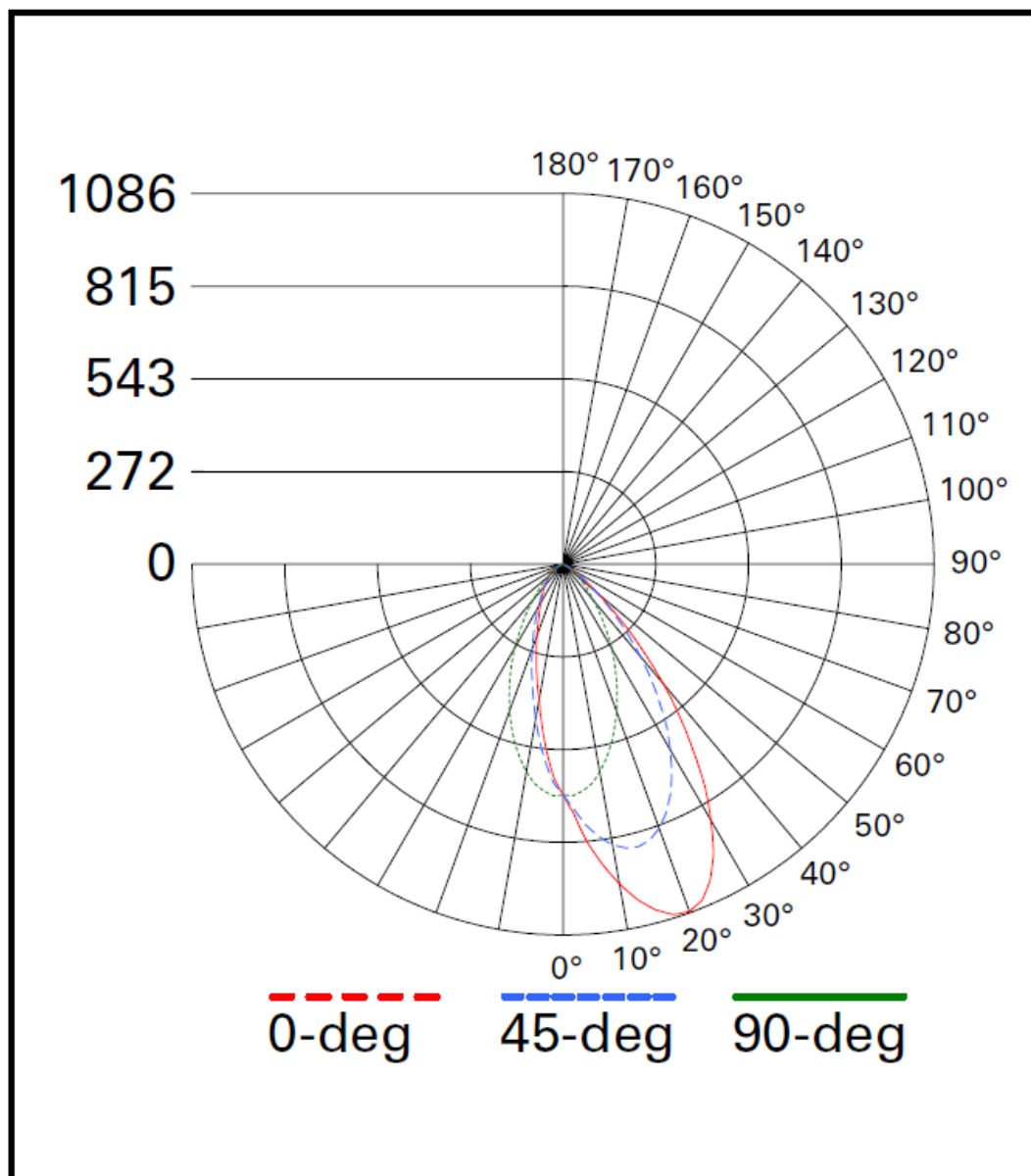
CANDELA TABLE

Degrees Vertical	Candela
0	677
5	821
15	1052
25	1024
35	666
45	270

55	67
65	16
75	4
85	1
90	0

ZONAL LUMEN SUMMARY

Zone	Lumens	% Fixture
0-30	453	54.3
0-40	640	76.7
0-60	799	95.8
0-90	834	100
90-180	0	0
0-180	834	100
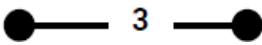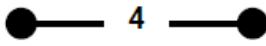
LUMINANCE

Average Candela Degrees	Average 0° Luminance
45	83792
55	25729

65	8042
75	3474
85	2516

Values are nominal for matte white reflectors, other may vary.

- SC = Spacing Criteria
- UGR = Unified Glare Rating

SINGLE UNIT FOOTCANDLES							
2.5′ from wall							
(distance from fixture along wall)							
1	1.3	1.1	0.5	0.2	0.1	0	0
2	8.9	6.4	2.4	0.7	0.3	0.2	0.1
3	19.7	14	6	1.9	0.6	0.3	0.1
4	19	14.8	7.9	3.3	1.2	0.5	0.2
5	14.1	11.7	7.4	3.7	1.7	0.7	0.3
6	9.7	8.5	5.8	3.5	1.8	0.9	0.4
7	6.6	5.9	4.5	2.9	1.7	1	0.5
8	4.6	4.2	3.4	2.4	1.6	1	0.6
9	3.2	3	2.5	1.9	1.3	0.9	0.6
10	2.4	2.3	1.9	1.5	1.1	0.8	0.5

MULTIPLE UNIT FOOTCANDLES

2.5' from wall (Distance from fixture along wall)				**2.5' from wall** (Distance from fixture along wall)		
1	1.5	1.6	1.5	1.4	1.1	1.4
2	9.6	8.5	9.6	9.2	4.8	9.2
3	21.6	19.2	21.6	20.3	12	20.3
4	22.2	22.6	22.2	20.1	15.9	20.1
5	17.8	19.1	17.8	15.7	14.7	15.7
6	13.2	14.5	13.2	11.5	11.7	11.5
7	9.5	10.6	9.5	8.4	9	8.4
8	7	7.7	7	6.1	6.7	6.1
9	5.2	5.6	5.2	4.6	5.1	4.6
10	3.9	4.2	3.9	3.5	3.9	3.5

(Fixture spacing diagrams: "3" and "4")

CCT Multipliers – 90CRI

2700K	3000K	3500K	4000K	5000K
0.97	1.00	1.03	1.07	1 .13

Multipliers may be used to determine other relative CCT values

Color Finish Multipliers

Finish code	MW	SL	MB	MWB	SLB	MBB
Finish	Matte White	Metallic Silver	Matte Black	Matte White Baffled	Metallic Silver Baffled	Matte Black Baffled
Multiplier	1.00	0.98	0.94	1.00	0.99	0.95

Multipliers may be used to determine relative lumen values with other cone color finishes

Cooper Lighting Solutions

- 1121 Highway 74 South
- Peachtree City, GA 30269
- P: 770-486-4800
- www.cooperlighting.com

Can be used to comply with California Title 24 High Efficacy requirements.1

Certified to California Appliance Efficiency Database under JA8.

Frequently Asked Questions

Are these fixtures suitable for residential use?

Yes, the ML Flex Series is ideal for residential applications.

What is the dimming capability of these fixtures?

The fixtures support 5% Phase Cut LE/TE Dimming at 120V 60Hz.

Can I choose different color temperatures for the lighting?

Yes, you can select different color temperatures ranging from warm to cool tones based on the product variant.

Documents / Resources

	[COOPER ML Flex Series Canless LED Down Lighting](#) [[pdf](#)] Instruction Manual ML3LSD2W1ERMB, ML3LSD2W1ERMW, ML3LSD2W1ESMB, ML Flex Series Canless LED Down Lighting, ML Flex Series, Canless LED Down Lighting, LED Down Lighting, Down Lighting

References

- [User Manual](#)

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🏷 Canless LED Down Lighting, Cooper, Down Lighting, LED Down Lighting, ML Flex Series, ML Flex Series Canless LED Down Lighting, ML3LSD2W1ERMB, ML3LSD2W1ERMW, ML3LSD2W1ESMB

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