DESCRIPTION

Recessed 4-inch LED downlight provides narrow, medium or wide distribution patterns ideal for general area lighting. Lumen packages range from 1000 to 4000 lumens in color temperatures of 2700K, 3000K, 3500K, and 4000K; in 80 or 90CRI. Luminaire is airtight and can be installed in new construction or below the finished ceiling in remodeling applications. Intended applications include office spaces, healthcare, hospitality, schools, house of worship and other institutional uses.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Housing Frame
- Boat shaped galvanized steel plaster frame with adjustable plaster lip accommodates1/2" to 1-1/2" thick ceilings
- May be installed in new construction; or from below the finished (non-accessible) ceiling in remodeling.
- Provided with (2) old work remodel clips to secure the frame to the ceiling

Universal Mounting Bracket
- Mounting bracket adjusts 2" vertically from above the ceiling or thru the aperture
- Use with the included mounting bars or with ½" EMT
- Removable to facilitate installation from below the finished ceiling

Mounting Bars
- Captive preinstalled No Fuss™ mounting bars lock to tee grid with screwdriver or pliers
- Centering mechanism allows for consistent positioning of fixtures

LED Module
- Proximity phosphors over chip on board LEDs provide a uniform source with high efficiency and no pixilation
- Available in 80 or 90 CRI minimum, accuracy within 3 SDCM provides color uniformity
- 90 CRI, R9>50 (refer to chromaticity tech sheet online for details)
- Correlated color temperature options
  - 2700K
  - 3000K
  - 3500K
  - 4000K
- Passive thermal management achieves L70 at 50,000 hours in IC and non IC applications
- Integral diffuse lens provides visual shielding
- Integral connector allows quick connection to housing flex

Lumen Options
- Nominal lumen values
  - 1000 lm
  - 1500 lm
  - 2000 lm
  - 3000 lm
  - 4000 lm

Reflector
- Self-flanged aluminum reflectors are available in narrow, medium or wide distribution patterns
- Medium distribution polymer non-conductive reflector may be used to meet local codes for 'dead front' applications
- Wall wash reflector features a rotatable insert assembly with integral linear spread lens for alignment of vertical illumination.
- Reflectors attach to LED module with (3) speed clamps
- Multiple painted or plated finishes are available

Reflector / Module Retention
- Reflector / module assembly is securely retained in the housing with (2) torsion springs

Driver
- Field replaceable constant current driver provides low noise operation
- UNV 120-277VAC 50/60Hz input standard
- 347VAC 50/60Hz input option (Canada only)
- Continuous, 1% - 100% dimming with 0 -10V analog control
- Optional low voltage DC driver for use with DLVP distributed low voltage power system

Emergency Option
- Provides 90 minutes of standby lighting meeting most life safety codes for egress lighting
- Available with integral or remote charge indicator and test switch
- Available Self-Test (self-diagnostic), with remote charge indicator and test switch

Connected Lighting Options
- WaveLinx - two options:
  - Factory installed WaveLinx tile mount sensor kit
  - Field installed WaveLinx accessory tile mount sensor kit.
- The WTA WaveLinx tile mount sensor kit offers daylight dimming, PIR motion sensing control, and optional RLTS - Real Time Location Services. (Refer to WaveLinx system specifications.) The WTA WaveLinx kit includes control module that mounts on the luminaire electrical junction box via 1/2" knock-out, and tilemount sensor with direct-mount spring clips or for octagon ceiling box with included mounting bracket. (Field mount kit ordered and installed separately).
- Enlighted wireless tile mount sensor and control kit

Junction Box
- Galvanized steel junction box
- 20in^3 internal volume excluding voltage barrier
- 25 in^3 internal total volume
- Voltage barrier for 0-10V dimming wires [occupies (1) 1/2" pry-out space]
- Listed for (8) #12 AWG (four in, four out) 90° C conductors and feed-thru branch wiring
- (3) 1/2" and (2) 3/4" trade size pry-outs available
- (3) 4-port push wire nuts for mains voltage, with 1-port for fixture connection

Compliance
- cULus damp and wet location listed in protected ceilings; and IP20 - Above finished ceiling; IP64 - Below finished ceiling
- Non-IC rated 2000, 3000, 4000 lumen models. Insulation must be kept 3" from top and sides.
- IC rated 1000, 1500, lumen models are suitable for direct contact with air permeable insulation (also suitable for Non-IC)
- Not for use in direct contact with spray foam insulation, consult NEMA LSD57-2013
- Airtight per ASTM-E283-04
- Suitable for use in clothes closets when installed in accordance with the NEC 410.16 spacing requirements
- EMI/RFI emissions FCC CFR Title 47 Part 15 Class A at 120/277V
- Contains no mercury or lead and RoHS compliant
- Photometric testing in accordance of IES LM-79-08
- Lumen maintenance projection in accordance of IES LM-80-08 and TM-21-11
- 1000 and 1500 lumen 90CRI ICAT models may be used to comply with State of California Title 24 residential code, per JA8 certification standards
- May be used to comply with State of California Title 24 non-residential code, as a dimmable LED luminaire
- ENERGY STAR certified, reference certified light fixtures database

Warranty
- Limited 5-year warranty, see website for details. www.cooperlighting.com/legal



HC4
Housing Frame

HM4
LED Module

41
41PS
Series Reflectors

4-inch Lens Downlight and Lens Wall Wash

1000/1500/2000/ 3000/4000 Lumen

ENERGY STAR

Efficiency Standards T24 California Title 24 Residential and Non-Residential Compliant

Halo Commercial

ENERGY DATA

Series	1000 lumen	
Input Voltage (VAC)	120V	277V
Input Current (A)	0.085	0.042
Input Power (W)	10.1	10.9
In-rush Current (A)	0.644	1.95
In-rush Duration (ms)	0.125	0.24
THDi (%)	8.6	15.6
PF:	≥ 0.90	
(Nominal input 120-277VAC & 100% of rated output power)		
Minimum starting temperature -30°C (-22°F)*		
Sound Rating: Class A standards		

Series	1500 lumen	
Input Voltage (VAC)	120V	277V
Input Current (A)	0.119	0.055
Input Power (W)	14.2	14.9
In-rush Current (A)	0.212	0.85
In-rush Duration (ms)	0.28	0.32
THDi (%)	7.8	16.3
PF:	≥ 0.90	
(Nominal input 120-277VAC & 100% of rated output power)		
Minimum starting temperature -30°C (-22°F)*		
Sound Rating: Class A standards		

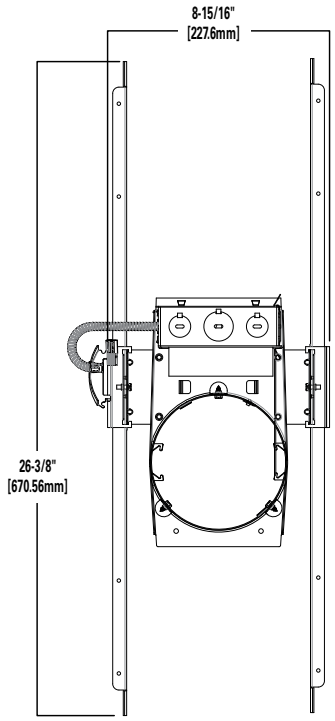
Series	2000 lumen	
Input Voltage (VAC)	120V	277V
Input Current (A)	0.176	0.082
Input Power (W)	21.1	21.4
In-rush Current (A)	0.588	0.624
In-rush Duration (ms)	0.3	0.38
THDi (%)	8.8	11.2
PF:	≥ 0.90	
(Nominal input 120-277VAC & 100% of rated output power)		
Minimum starting temperature -30°C (-22°F)*		
Sound Rating: Class A standards		

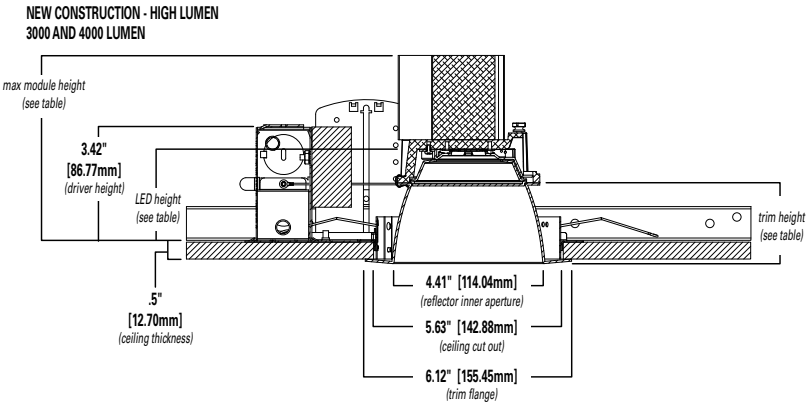
Series	3000 lumen	
Input Voltage (VAC)	120V	277V
Input Current (A)	0.228	0.102
Input Power (W)	27.2	27
In-rush Current (A)	0.898	1.7
In-rush Duration (ms)	0.36	0.38
THDi (%)	9.7	9.3
PF:	≥ 0.90	
(Nominal input 120-277VAC & 100% of rated output power)		
Minimum starting temperature -30°C (-22°F)*		
Sound Rating: Class A standards		

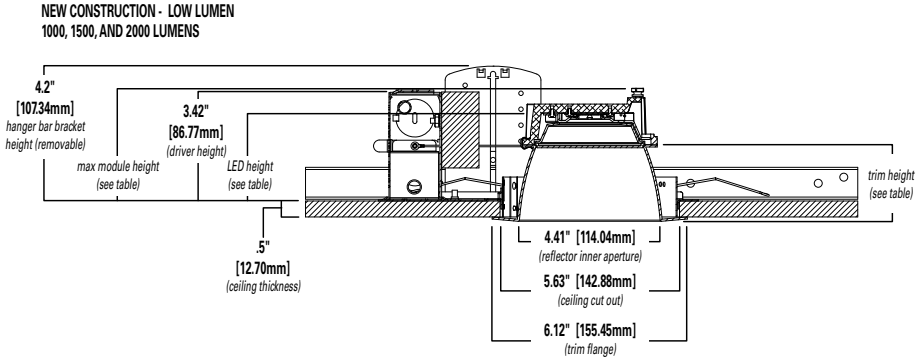
Series	4000 lumen	
Input Voltage (VAC)	120V	277V
Input Current (A)	0.345	0.15
Input Power (W)	41.3	40.7
In-rush Current (A)	1.05	2.23
In-rush Duration (ms)	0.32	0.34
THDi (%)	10.06	14.01
PF:	≥ 0.90	
(Nominal input 120-277VAC & 100% of rated output power)		
Minimum starting temperature -30°C (-22°F)*		
Sound Rating: Class A standards		

Notes:
***** Emergency Battery packs are rated for a minimum starting temperature of 0°C.

DIMENSIONS







High Lumen (3000 & 4000 Lumens)

Distribution	Max. Module Height	Trim Height	LED Height
Narrow	5.6"	2.5″	2.9″
Medium	5.7″	2.6″	3.0″
Wide	5.5″	2.4″	2.8″
Baffle	5.5″	2.4″	2.8″

Low Lumen (1000, 1500 & 2000 Lumens)*

Max. Module Height	Trim Height	LED Height
3.6"	2.5″	2.7″
3.7″	2.6″	2.8″
3.5″	2.4″	2.6″
3.1″	2.4″	2.6″

*Max. height w/hanger bar bracket 4.2″

Ordering Information

Sample Number: HC420D010REM7 - HM412835 - 41MDC
A complete luminaire consists of a housing frame, LED module, and reflector (ordered separately)

Mounting Frame	Lumens	Input / Control
HC4 = 4" new construction and remodeler housing **HC4CP** = 4" new construction and remodeler housing, CCEA Chicago Plenum rated	**10** = 1000 lumens (nominal) **15 =** 1500 lumens (nominal) **20 =** 2000 lumens (nominal) **30 =** 3000 lumens (nominal) **40 =** 4000 lumens (nominal)	**D010** = 120-277VAC 50/60Hz 0-10V analog 1%-100% dimming **D010347** = 347VAC 50/60Hz 0-10V analog 1%-100% dimming (Canada only) [1] **DLV** = Distributed Low Voltage driver, 1%-100% dimming DLV for use with DLVP system only. Refer to DLVP low-voltage power module and DLVP specifications for details. [1]

Factory Installed Options	Accessories
REM7 = 7 watt emergency module with remote test / indicator light, use with D010 only [1] **REM14** = 14 watt emergency module with remote test / indicator light, use with D010 only [1] **REMV7** = 7 watt emergency module with remote test / indicator light, use with DLV only [1, 2] **REMV14** = 14 watt emergency module with remote test / indicator light, use with DLV only [1, 2] **IEM7** = integral 7 watt emergency module with integral test / indicator light, use with D010 only [1] **IEM14** = integral 14 watt emergency module with integral test / indicator light, use with D010 only [1] **BOD7ST** = 7.5 watt Bodine self-test diagnostic emergency module with remote test / indicator light, use with D010 only [1] **IEMV7** = integral 7 watt emergency module with integral test / indicator light, use with DLV only [1, 2] **IEMV14** = integral 14 watt emergency module with integral test / indicator light, use with DLV only [1, 2] **LWTPD1** = factory installed Enlighted wireless tile mount sensor kit, use with D010 only [1] **WTA**=Factory installed WaveLinx sensor Kit **1, 5**	**HB128APK** = L channel hanger bar, 26", pair (replacement) **RMB22** = Adjustable wood joist mounting bars, pair, extend to 22" long **H347** = 347 to 120V step down transformer, 75VA **H347200** = 347 to 120V step down transformer, 200VA **PORLWTPD1** = Enlighted wireless sensor kit, field installed, use with D010 only [1] **WTA**=Factory installed WaveLinx sensor Kit **1, 5**

LED Module	Lumens	CRI/CCT
HM4 = 4" LED module	**12**=1000, 1500 and 2000 lumens (nominal), use with HC410*, HC415*, HC420* housings **34**=3000 and 4000 lumens (nominal), use with HC430*, HC440* housings	**827** = 80 CRI (minimum), 2700K CCT **830** = 80 CRI (minimum), 3000K CCT **835** = 80 CRI (minimum), 3500K CCT **840** = 80 CRI (minimum), 4000K CCT **927** = 90 CRI (minimum), 2700K CCT **930** = 90 CRI (minimum), 3000K CCT **935** = 90 CRI (minimum), 3500K CCT **940** = 90 CRI (minimum), 4000K CCT

Reflector	Distribution[3]	Finish	Flange	Accessories
41 = 4" conical reflector	**ND** = narrow 50° beam angle 0.84 SC (nominal) **MD** = medium 60° beam angle 1.00 SC (nominal) **WD** = wide 75° beam angle 1.24 SC (nominal) **RWW** = rotatable wall wash with linear spread lens	**C** = Specular clear **H** = Semi-specular clear **W** = White	**Blank** = Polished flange standard with C & H reflectors **Blank** = White flange standard with W reflector **WF** = White flange option available with C & H reflectors	**41RWWPK** = rotatable wall wash insert for 4" reflector –replacement part kit

Baffle	Distribution[3]	Finish	Flange	Accessories
41 = 4" baffle reflector	**WD** = wide 75° beam angle 1.24 SC (nominal) **RWW** = rotatable wall wash with linear spread lens	**BB** = Black baffle **WB** = White baffle	**Blank** = White flange standard with BB, & WB **BF** = Black flange option with BB	**41RWWPK** = rotatable wall wash insert for 4" reflector –replacement part kit

IEM Reflector	Distribution[3]	Finish	Flange	Integral Emergency
41 = 4" conical reflector for integral emergency only	**ND** = narrow 50° beam angle 0.84 SC (nominal) **MD** = medium 60° beam angle 1.00 SC (nominal) **WD** = wide 75° beam angle 1.24 SC (nominal)	**C** = Specular clear **H** = Semi-specular clear **W** = White	**Blank** = Polished flange standard with C & H reflectors **Blank** = White flange standard with W reflector **WF** = White flange option available with C & H reflectors	**IEM** = Reflector for integral emergency only

IEM Baffle	Distribution[3]	Finish	Flange	Integral Emergency
41 = 4" baffle reflector for integral emergency only	**WD** = wide 75° beam angle 1.24 SC (nominal)	**BB** = Black baffle **WB** = White baffle	**Blank** = White flange standard with BB, & WB **BF** = Black flange option with BB	**IEM** = Reflector for integral emergency only

Reflector	Distribution[3]	Finish	Flange
41PS = 4" non-conductive polymer 'dead front' conical reflector[4]	**MD** = medium 60° beam angle 1.00 SC (nominal)	**W** = White	**Blank** = White flange standard with W reflector

Notes:
1. Not available with CP version
2. ULus for U.S. only
3. Values are nominal for white reflector, others may vary.
4. 41PS reflector only available in NON-IC environments and up to 3000 lumens.
5. WTA = WaveLinx tile mount sensor kit for daylight dimming, PIR motion sensing, and optional RLTS - Real Time Location Services, use with D010 only (Refer to WaveLinx system specifications)

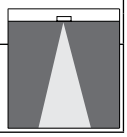
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PHOTOMETRY

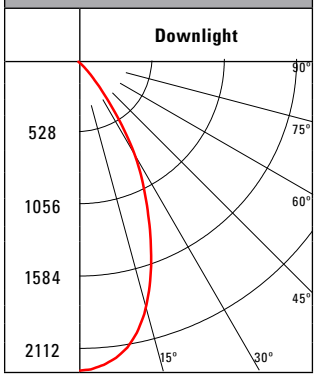
NARROW DISTRIBUTION - SPECULAR CLEAR FINISH, 2000 LUMEN MODEL, 80 CRI, 3500K

NARROW (50° BEAM*)

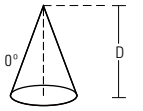
Test Number	P255618
Housing	HC420D010
Module	HM412835
Reflector	41NDC
Lumens	1667 Lm
Efficacy	83.4 Lm/W
SC	0.84
UGR	12.2



CANDLEPOWER DISTRIBUTION



CONE OF LIGHT



MH	FC	L	W
5.5'	69.8	4.4	4.4
7'	43.1	5.6	5.6
8'	33	6.4	6.4
9'	26.1	7.2	7.2
10'	21.1	8.2	8.2
12'	14.7	9.8	9.8

CANDELA TABLE

Degrees Vertical	Candela
0	2112
5	2079
15	1784
25	1157
35	534
45	116
55	13
65	0
75	0
85	0
90	0

ZONAL LUMEN SUMMARY

Zone	Lumens	% Fixture
0-30	1219	73.1
0-40	1553	93.1
0-60	1666	99.9
0-90	1667	100
90-180	0	0
0-180	1667	100

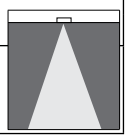
LUMINANCE

Average Candela Degrees	Average 0° Luminance
45	15974
55	2141
65	0
75	0
85	0

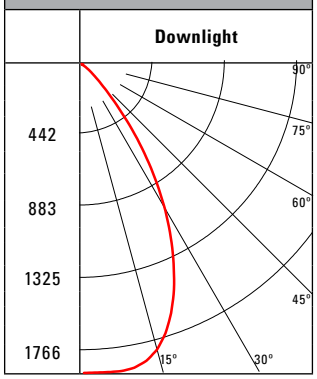
MEDIUM DISTRIBUTION - SPECULAR CLEAR FINISH, 2000 LUMEN MODEL, 80 CRI, 3500K

MEDIUM (60° BEAM*)

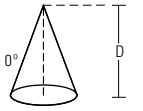
Test Number	P255818
Housing	HC420D010
Module	HM412835
Reflector	41MDC
Lumens	1793 Lm
Efficacy	89.7 Lm/W
SC	1.0
UGR	13.6



CANDLEPOWER DISTRIBUTION



CONE OF LIGHT



MH	FC	L	W
5.5'	58.2	5.2	5.2
7'	35.9	6.6	6.6
8'	27.5	7.6	7.6
9'	21.7	8.6	8.6
10'	17.6	9.6	9.6
12'	12.2	11.6	11.6

CANDELA TABLE

Degrees Vertical	Candela
0	1761
5	1764
15	1686
25	1257
35	655
45	164
55	28
65	8
75	2
85	0
90	0

ZONAL LUMEN SUMMARY

Zone	Lumens	% Fixture
0-30	1209	67.4
0-40	1615	90.1
0-60	1784	99.5
0-90	1793	100
90-180	0	0
0-180	1793	100

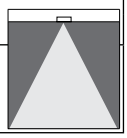
LUMINANCE

Average Candela Degrees	Average 0° Luminance
45	22576
55	4707
65	1753
75	941
85	0

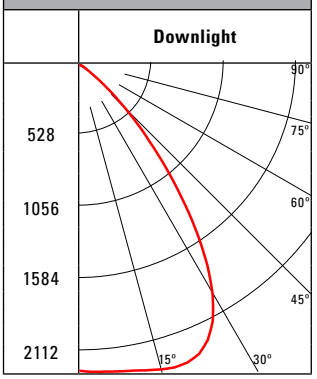
WIDE DISTRIBUTION - SPECULAR CLEAR FINISH, 2000 LUMEN MODEL, 80 CRI, 3500K

WIDE (75° BEAM*)

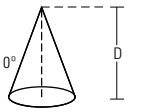
Test Number	P256018
Housing	HC420D010
Module	HM412835
Reflector	41WDC
Lumens	1889 Lm
Efficacy	94.4 Lm/W
SC	1.24
UGR	15.7



CANDLEPOWER DISTRIBUTION



CONE OF LIGHT



MH	FC	L	W
5.5'	41.6	6.6	6.6
7'	25.7	8.6	8.6
8'	19.7	9.8	9.8
9'	15.5	11	11
10'	12.6	12.2	12.2
12'	8.7	14.6	14.6

CANDELA TABLE

Degrees Vertical	Candela
0	1257
5	1265
15	1295
25	1247
35	841
45	312
55	50
65	13
75	5
85	0
90	0

ZONAL LUMEN SUMMARY

Zone	Lumens	% Fixture
0-30	1054	55.8
0-40	1571	83.2
0-60	1871	99.1
0-90	1889	100
90-180	0	0
0-180	1889	100

LUMINANCE

Average Candela Degrees	Average 0° Luminance
45	43057
55	8564
65	2906
75	1883
85	0

*Value are nominal for specular clear reflectors, others may vary.
SC = Spacing Criteria
UGR = Unified Glare Rating

Photometric Multipliers (nominal lumen values)

1000 Lumen	1500 Lumen	2000 Lumen	3000 Lumen	4000 Lumen
0.53	0.72	1.00	1.38	1.87

Multipliers for relative lumen values with other series models.

CCT Multipliers – 80CRI

2700K	3000K	3500K	4000K
0.91	0.94	1.00	1.01

Multipliers for relative lumen values with other series color temperatures.

Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Semi-Specular	Matte White White Baffle	Black Baffle
Multiplier	1.00	0.95	0.97	0.82

Multipliers for relative lumen values with other color finishes.

CCT Multipliers – 90CRI

2700K	3000K	3500K	4000K
0.75	0.82	0.89	0.89

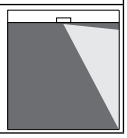
Multipliers for relative lumen values with other series color temperatures.

Halo Commercial

PHOTOMETRY

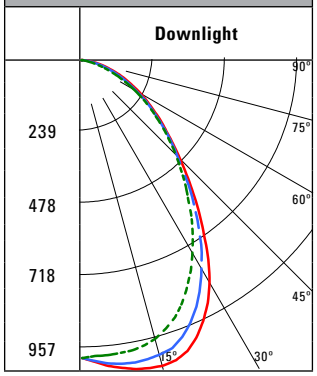
WALL WASH DISTRIBUTION - SPECULAR CLEAR FINISH, 2000 LUMEN MODEL, 80 CRI, 3500K

WALL WASH	
Test Number	P256338
Housing	HC420D010
Module	HM412835
Reflector	41RWWC
Lumens	1816 Lm
Efficacy	90.8 Lm/W
SC	1.20



SC = Spacing Criteria, nominal for specular clear reflector, others may vary.

CANDLEPOWER DISTRIBUTION



CANDELA TABLE

Degrees Vertical	Candela
0	901
5	929
15	957
25	871
35	647
45	420
55	267
65	156
75	70
85	8
90	0

ZONAL LUMEN SUMMARY

Zone	Lumens	% Fixture
0-30	700	38.5
0-40	1078	59.3
0-60	1630	89.8
0-90	1816	100
90-180	0	0
0-180	1816	100

LUMINANCE

Average Candela Degrees	Average 0° Luminance
45	57956
55	45350
65	35998
75	26547
85	8498

SINGLE UNIT FOOTCANDLES

	2.5′ from wall (distance from fixture along wall)						
1	9.4	6.9	3.2	1.1	0.3	0.1	0
2	12.4	9.5	5.2	2.4	0.9	0.3	0.1
3	13.7	11.1	5.9	2.5	1.1	0.4	0.2
4	10.7	9.4	6.1	3	1.2	0.5	0.2
5	7.7	7	5.4	3.1	1.5	0.6	0.2
6	5.5	5.2	4.3	3	1.6	0.8	0.3
7	4	3.9	3.4	2.6	1.6	0.9	0.4
8	3	2.9	2.6	2.1	1.5	0.9	0.5
9	2.3	2.2	2.1	1.8	1.4	1	0.6
10	1.8	1.8	1.6	1.4	1.2	0.9	0.6

MULTIPLE UNIT FOOTCANDLES

	2.5′ from wall (distance from fixture along wall) 3			2.5′ from wall (distance from fixture along wall) 4		
1	10.5	9.8	10.5	10.5	9.8	10.5
2	14.8	14.5	14.8	14.8	14.5	14.8
3	16.2	17	16.2	16.2	17	16.2
4	13.7	15.8	13.7	13.7	15.8	13.7
5	10.8	12.6	10.8	10.8	12.6	10.8
6	8.5	9.6	8.5	8.5	9.6	8.5
7	6.6	7.3	6.6	6.6	7.3	6.6
8	5.2	5.6	5.2	5.2	5.6	5.2
9	4.1	4.4	4.1	4.1	4.4	4.1
10	3.2	3.4	3.2	3.2	3.4	3.2

Photometric Multipliers (nominal lumen values)

1000 Lumen	1500 Lumen	2000 Lumen	3000 Lumen	4000 Lumen
0.53	0.72	1.00	1.38	1.87

Multipliers for relative lumen values with other series models.

CCT Multipliers – 80CRI

2700K	3000K	3500K	4000K
0.91	0.94	1.00	1.01

Multipliers for relative lumen values with other series color temperatures.

Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Semi-Specular	Matte White White Baffle	Black Baffle
Multiplier	1.00	0.95	0.97	0.82

Multipliers for relative lumen values with other color finishes.

CCT Multipliers – 90CRI

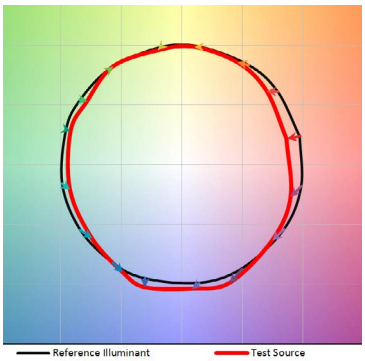
2700K	3000K	3500K	4000K
0.75	0.82	0.89	0.89

Multipliers for relative lumen values with other series color temperatures.

COLOR METRICS

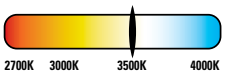
TM-30-15 & CRI/CIE (3500K)

80 CRI Color Metric Summary - 3500K*



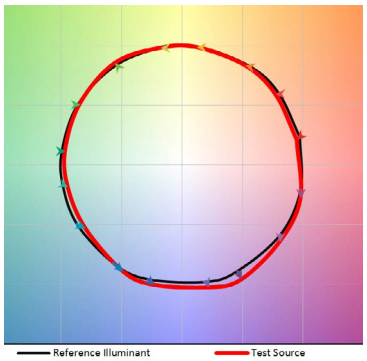
* Color values are based on 61WDWB reflector, other finishes and field results may vary.

TM-30-15	R_f = 84
	R_g = 95
CRI/CIE	R_a = 85
	R_9 = 14



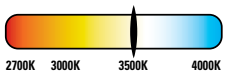
53° narrow
61° medium
76° wide
Nominal Beam

90 CRI Color Metric Summary - 3500K*



* Color values are based on 61WDWB reflector, other finishes and field results may vary.

TM-30-15	R_f = 91
	R_g = 100
CRI/CIE	R_a = 92
	R_9 = 77



53° narrow
61° medium
76° wide
Nominal Beam

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