

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P832627

Luminaire Tested: **TTN-D2-740-U-MQ-CG**

Issue Date: 5/14/2024

Test Information

Test Method: LM-79-08
Report Number: P832627
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2312-254-13)
Test Lab: INNOVATION CENTER
Issue Date: 5/14/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: TTN-D2-740-U-MQ-CG
Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE
4000K, 70 CRI LEDS AND MEDIUM DISTRIBUTION WITH CLEAR GLASS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5360 lumens
Efficiency: N/A
Efficacy: 126.1 lumens/watt
Luminous Opening: Circular (Dia: 0.71' x H: 0')
IES Classification: Type V - Short
BUG Rating: B2 - U0 - G1

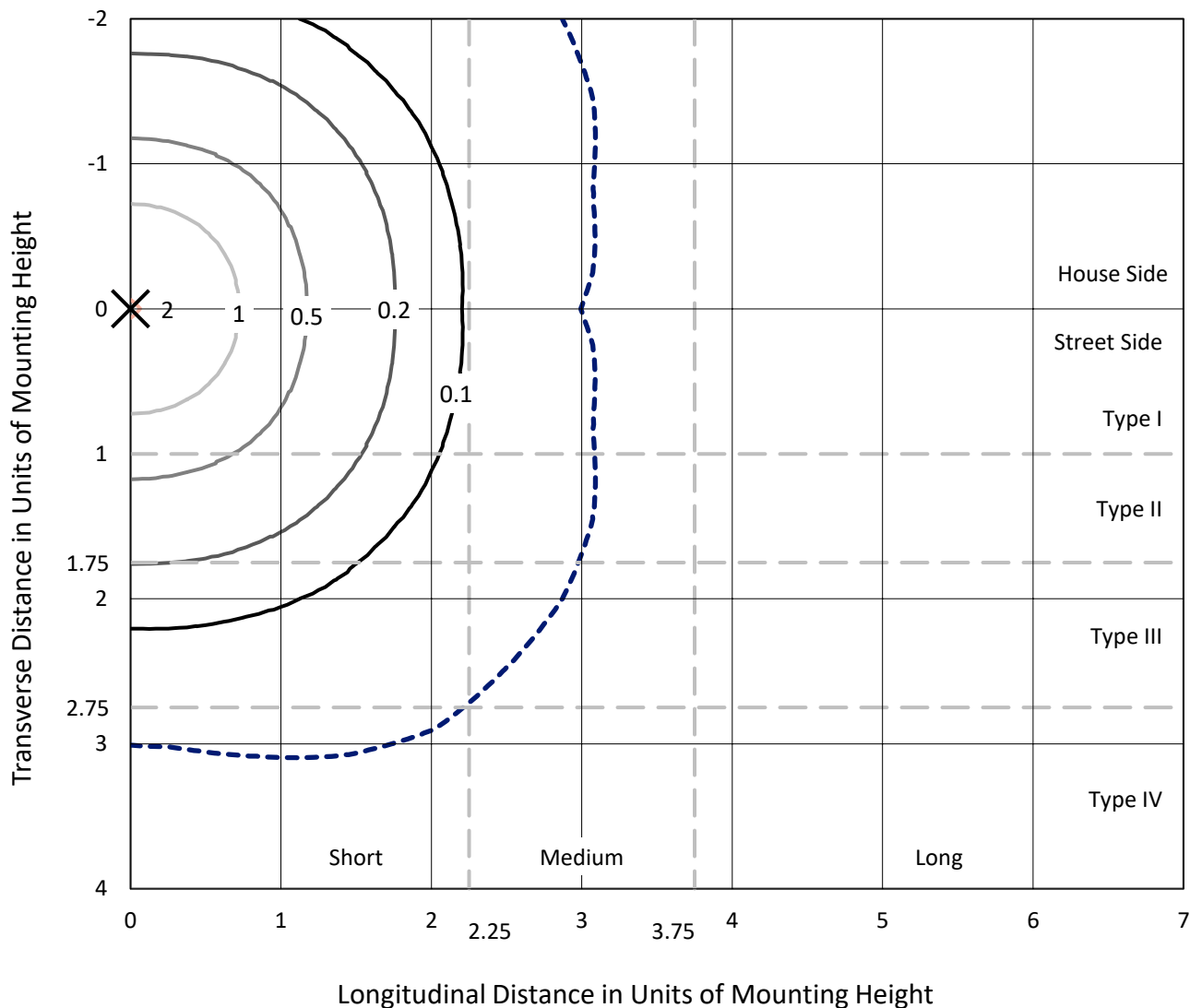
Input Watts (W): 42.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P832627
 CATALOG NUMBER: TTN-D2-740-U-MQ-CG

Iso-Footcandle Lines of Horizontal Illumination

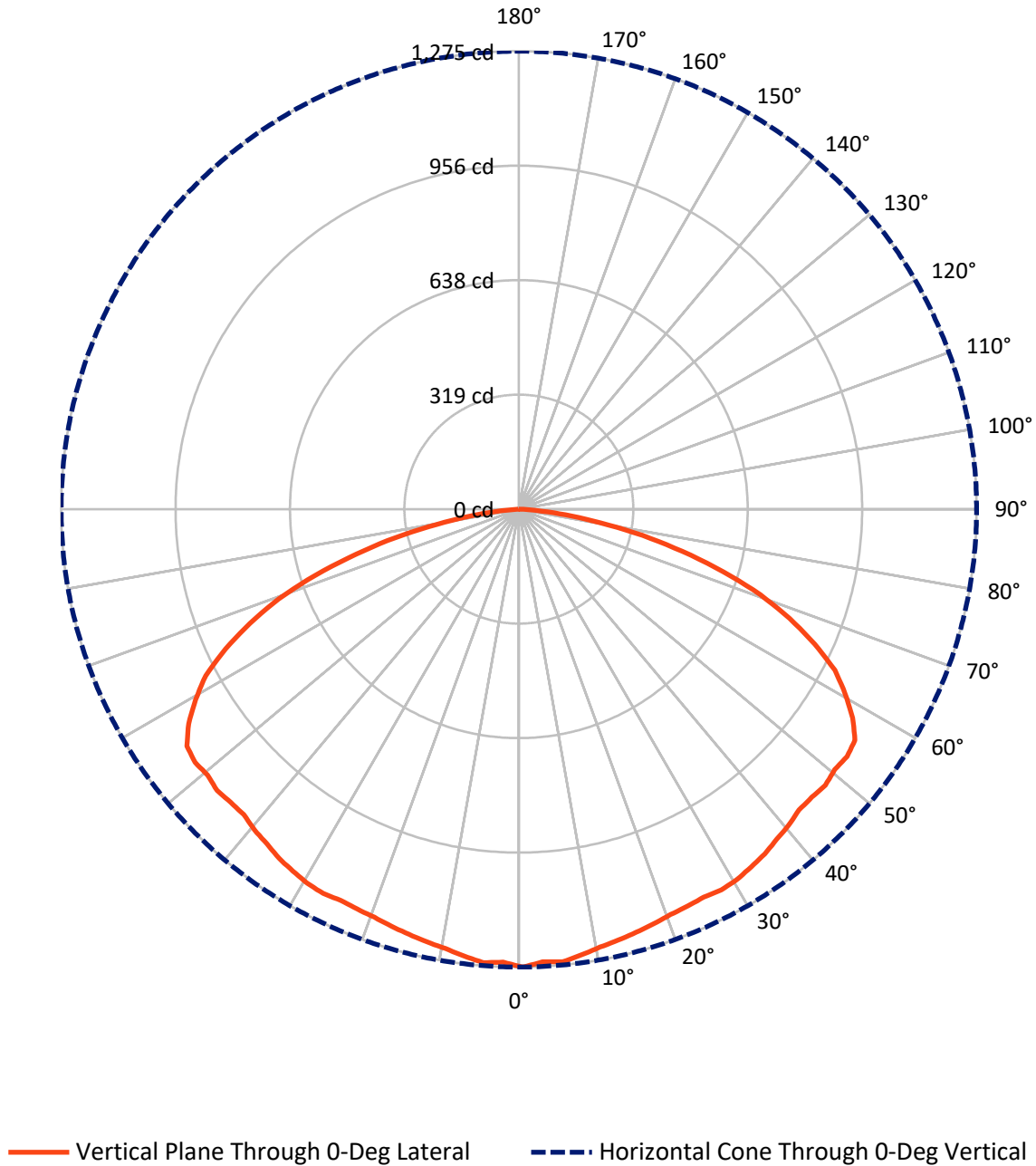
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2 fc
 Type V - Short - N/A

REPORT NUMBER: P832627
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Luminous Intensity Polar Plot



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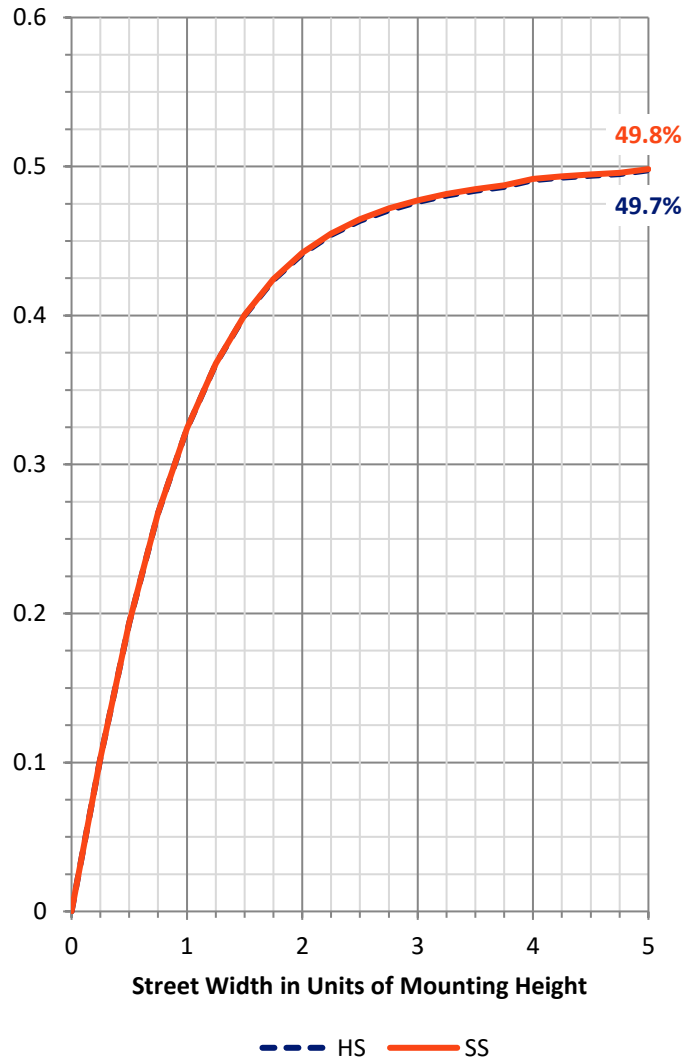
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2680.0	0.0	2680.0
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	2680.0	0.0	2680.0
	% Fixture	50.0	0.0	50.0
Total	Lumens	5360.0	0.0	5360.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	119.8	2.2
10°-20°	346.4	6.5
20°-30°	557.3	10.4
30°-40°	744.4	13.9
40°-50°	904.5	16.9
50°-60°	1050.9	19.6
60°-70°	969.6	18.1
70°-80°	567.6	10.6
80°-90°	99.5	1.9
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	5360.0	100.0
0°-180°	5360.0	100.0

Coefficient of Utilization



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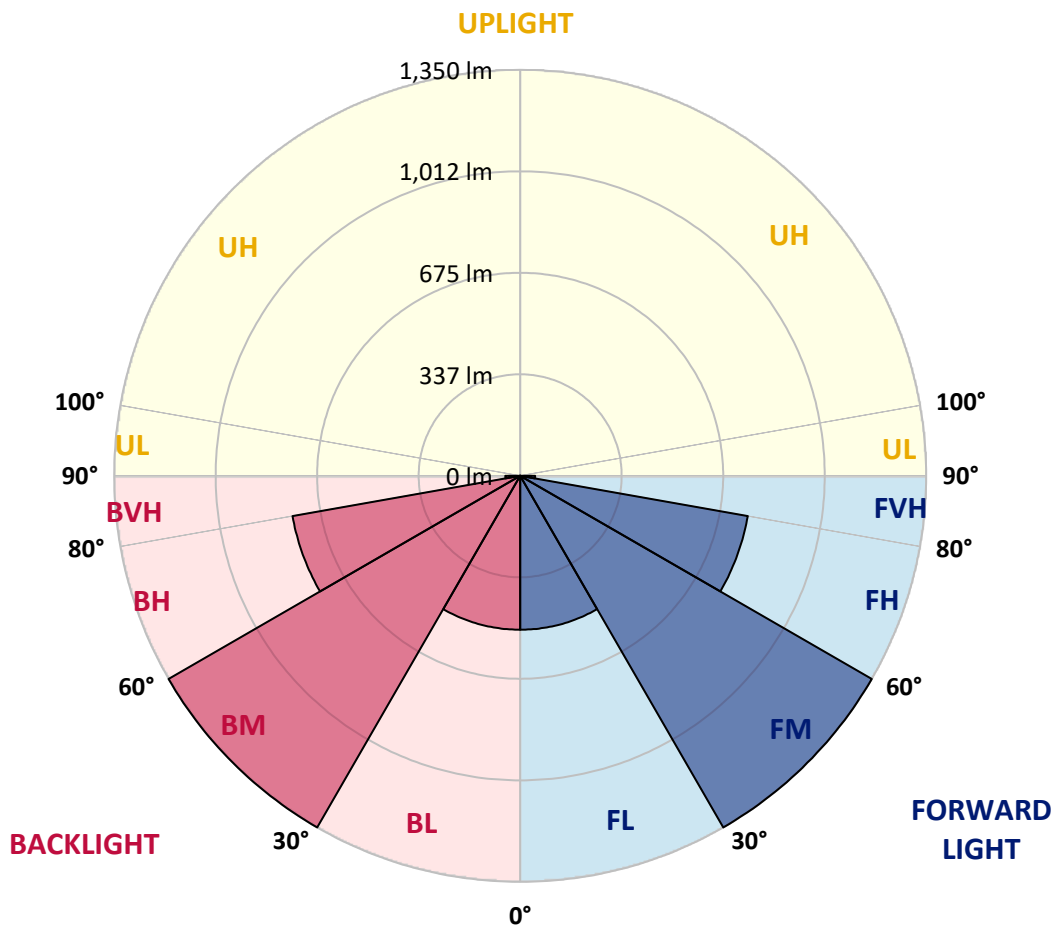
CATALOG NUMBER: TTN-D2-740-U-MQ-CG

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	511.7	9.5			
FM (30°-60°)	1349.9	25.2			
FH (60°-80°)	768.6	14.3			G1/1800
FVH (80°-90°)	49.7	0.9			G1/100
BL (0°-30°)	511.7	9.5	B2/1000		
BM (30°-60°)	1349.9	25.2	B2/2500		
BH (60°-80°)	768.6	14.3	B2/1000		G1/1800
BVH (80°-90°)	49.7	0.9			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G1

Type V Short





REPORT NUMBER: P832627
 CATALOG NUMBER: TTN-D2-740-U-MQ-CG

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1275.1	1275.1	1275.1	1275.1	1275.1	1275.1	1275.1	1275.1	1275.1	1275.1	1275.1
2.5°	1262.1	1266.4	1262.1	1262.1	1262.1	1262.1	1262.1	1262.1	1262.1	1262.1	1266.4
5°	1266.4	1266.4	1266.4	1266.4	1262.1	1262.1	1262.1	1262.1	1262.1	1266.4	1266.4
7.5°	1253.4	1253.4	1253.4	1253.4	1253.4	1249.0	1253.4	1253.4	1253.4	1253.4	1253.4
10°	1240.3	1240.3	1240.3	1240.3	1240.3	1240.3	1240.3	1240.3	1240.3	1240.3	1240.3
12.5°	1231.6	1231.6	1231.6	1231.6	1231.6	1231.6	1231.6	1231.6	1231.6	1227.3	1227.3
15°	1222.9	1222.9	1222.9	1222.9	1227.3	1227.3	1222.9	1222.9	1222.9	1222.9	1222.9
17.5°	1214.2	1214.2	1214.2	1214.2	1218.6	1218.6	1218.6	1214.2	1214.2	1214.2	1214.2
20°	1205.5	1205.5	1205.5	1205.5	1209.9	1209.9	1209.9	1209.9	1209.9	1205.5	1205.5
22.5°	1201.1	1201.1	1201.1	1201.1	1205.5	1205.5	1205.5	1205.5	1201.1	1201.1	1201.1
25°	1196.8	1201.1	1201.1	1201.1	1205.5	1209.9	1209.9	1205.5	1201.1	1196.8	1196.8
27.5°	1201.1	1201.1	1201.1	1205.5	1205.5	1209.9	1209.9	1205.5	1201.1	1201.1	1201.1
30°	1196.8	1196.8	1196.8	1201.1	1205.5	1209.9	1205.5	1205.5	1201.1	1196.8	1196.8
32.5°	1188.1	1188.1	1192.4	1196.8	1201.1	1201.1	1201.1	1196.8	1192.4	1188.1	1188.1
35°	1179.4	1179.4	1179.4	1183.7	1192.4	1192.4	1192.4	1188.1	1183.7	1179.4	1175.0
37.5°	1166.3	1170.7	1170.7	1179.4	1183.7	1188.1	1183.7	1179.4	1170.7	1166.3	1166.3
40°	1157.6	1157.6	1162.0	1170.7	1179.4	1179.4	1175.0	1170.7	1162.0	1157.6	1157.6
42.5°	1144.6	1144.6	1153.3	1162.0	1175.0	1175.0	1170.7	1162.0	1153.3	1144.6	1144.6
45°	1144.6	1144.6	1153.3	1170.7	1179.4	1188.1	1179.4	1170.7	1153.3	1144.6	1140.2
47.5°	1148.9	1148.9	1157.6	1179.4	1196.8	1205.5	1192.4	1175.0	1157.6	1148.9	1144.6
50°	1140.2	1144.6	1162.0	1183.7	1205.5	1209.9	1205.5	1179.4	1162.0	1140.2	1140.2
52.5°	1144.6	1144.6	1166.3	1201.1	1222.9	1231.6	1222.9	1201.1	1162.0	1140.2	1140.2
55°	1135.9	1131.5	1162.0	1201.1	1236.0	1253.4	1236.0	1201.1	1157.6	1131.5	1127.2
57.5°	1096.7	1096.7	1135.9	1175.0	1218.6	1227.3	1214.2	1175.0	1131.5	1096.7	1088.0
60°	1044.5	1048.8	1088.0	1131.5	1170.7	1175.0	1166.3	1131.5	1088.0	1048.8	1035.8
62.5°	987.9	996.6	1035.8	1079.3	1127.2	1135.9	1122.8	1079.3	1027.1	1001.0	979.2
65°	905.2	918.3	961.8	1009.7	1061.9	1057.5	1057.5	1005.3	966.1	922.6	900.9
67.5°	813.8	826.9	857.3	922.6	966.1	961.8	957.4	922.6	857.3	826.9	813.8
70°	713.7	722.4	752.9	818.2	857.3	861.7	848.6	813.8	752.9	731.1	709.4
72.5°	596.2	600.6	644.1	696.3	735.5	731.1	726.8	696.3	639.7	618.0	591.9
75°	470.0	474.4	513.5	561.4	591.9	587.5	583.2	561.4	513.5	487.4	465.7
77.5°	352.5	348.2	387.3	422.1	439.6	443.9	435.2	417.8	383.0	361.2	348.2
80°	230.7	226.3	261.1	287.2	300.3	300.3	295.9	282.9	256.8	239.4	230.7
82.5°	130.6	126.2	148.0	165.4	178.4	174.1	169.7	161.0	148.0	134.9	126.2
85°	47.9	47.9	60.9	69.6	78.3	78.3	74.0	69.6	56.6	52.2	47.9
87.5°	4.4	4.4	8.7	13.1	13.1	13.1	8.7	8.7	4.4	4.4	4.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

MCGRAW EDISON

Report Number: SP1-2411-284-2

Test Date: 11/20/2024

Luminaire Tested: TTN-D0-740-U-WQ

Data in this report applies to TT and TTN families of products

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2411-284-2
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 11/20/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: MCGRAW EDISON
 Catalog Number: **TTN-D0-740-U-WQ**
 Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE. 4000K, 70 CRI LEDS AND WIDE DISTRIBUTION

Spectral Parameters

CCT (K): 3863
 CIE u': 0.2247
 CIE v': 0.5111
 Duv: 0.0055
 CIE x: 0.3911
 CIE y: 0.3954
 CIE z: 0.2136
 Peak Wavelength (nm): 448
 Dominant Wavelength (nm): 577
 Purity: 36.03443
 Rf: 74.7
 Rg: 95.4

CRI (Ra):	71.9		
R1:	69.4	R9:	-23.5
R2:	76.9	R10:	45.4
R3:	83.3	R11:	68.7
R4:	72.7	R12:	38.7
R5:	68.4	R13:	70.0
R6:	67.5	R14:	90.3
R7:	82.0	R15:	62.1
R8:	55.3		



Test Conditions

Stabilization Time: 37M
 Operation Time: 1H 37M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2411-284-2

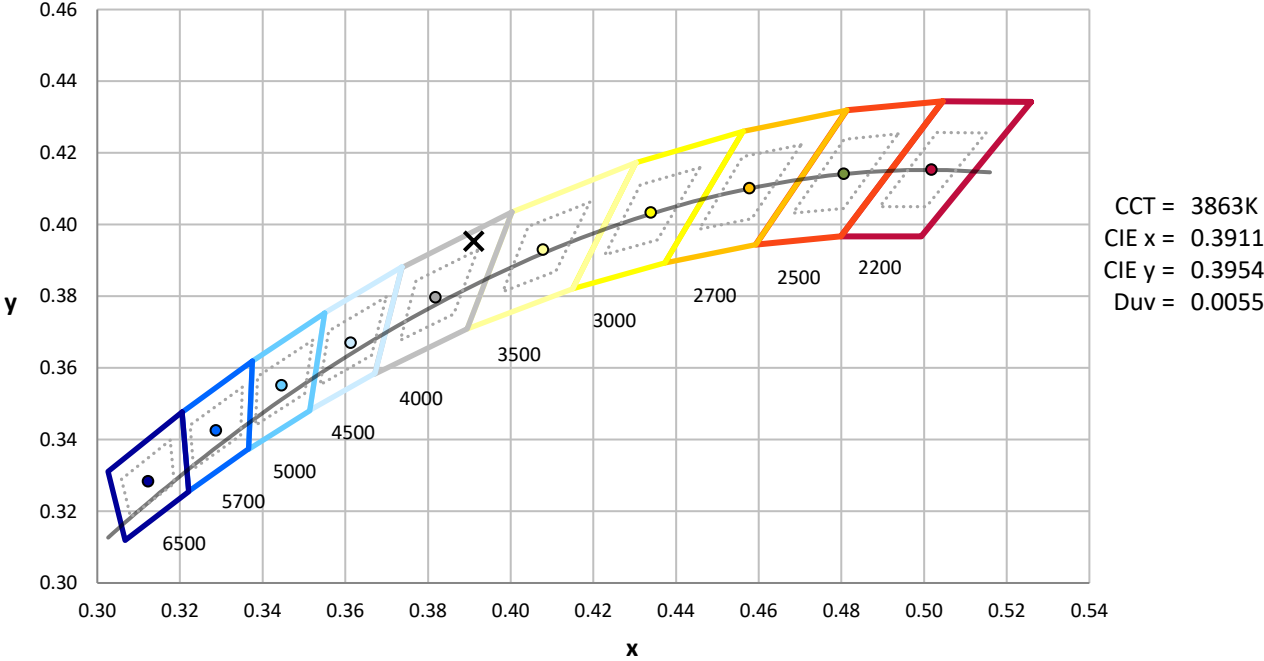
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085	10/22/2024	10/22/2025
Room Thermometer	IN0046	10/22/2024	10/22/2025

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CIE 1931 Chromaticity Diagram



CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 4000K 7-step quadrangle

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Photopic Flux vs. Wavelength



Photopic Lumens: NR

λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	118	NR	620	730	NR	750	25	NR	880	1	NR
365	0	NR	495	170	NR	625	680	NR	755	22	NR	885	0	NR
370	0	NR	500	245	NR	630	630	NR	760	19	NR	890	0	NR
375	0	NR	505	338	NR	635	579	NR	765	17	NR	895	0	NR
380	0	NR	510	431	NR	640	529	NR	770	14	NR	900	0	NR
385	0	NR	515	521	NR	645	477	NR	775	13	NR	905	0	NR
390	1	NR	520	596	NR	650	429	NR	780	11	NR	910	0	NR
395	3	NR	525	655	NR	655	383	NR	785	9	NR	915	0	NR
400	6	NR	530	701	NR	660	338	NR	790	8	NR	920	0	NR
405	9	NR	535	739	NR	665	298	NR	795	7	NR	925	0	NR
410	16	NR	540	766	NR	670	261	NR	800	6	NR	930	0	NR
415	32	NR	545	791	NR	675	228	NR	805	5	NR	935	0	NR
420	65	NR	550	813	NR	680	200	NR	810	5	NR	940	0	NR
425	131	NR	555	833	NR	685	173	NR	815	4	NR	945	0	NR
430	245	NR	560	852	NR	690	151	NR	820	3	NR	950	0	NR
435	432	NR	565	870	NR	695	130	NR	825	3	NR	955	0	NR
440	622	NR	570	885	NR	700	112	NR	830	3	NR	960	0	NR
445	870	NR	575	900	NR	705	97	NR	835	2	NR	965	0	NR
450	969	NR	580	911	NR	710	83	NR	840	2	NR	970	0	NR
455	544	NR	585	916	NR	715	71	NR	845	2	NR	975	0	NR
460	304	NR	590	912	NR	720	60	NR	850	1	NR	980	0	NR
465	231	NR	595	901	NR	725	51	NR	855	1	NR	985	0	NR
470	142	NR	600	882	NR	730	43	NR	860	1	NR	990	0	NR
475	96	NR	605	855	NR	735	37	NR	865	1	NR	995	0	NR
480	92	NR	610	820	NR	740	32	NR	870	1	NR	1000	0	NR
485	96	NR	615	776	NR	745	29	NR	875	1	NR			

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Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.45

λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	118	NR	620	730	NR	750	25	NR	880	1	NR
365	0	NR	495	170	NR	625	680	NR	755	22	NR	885	0	NR
370	0	NR	500	245	NR	630	630	NR	760	19	NR	890	0	NR
375	0	NR	505	338	NR	635	579	NR	765	17	NR	895	0	NR
380	0	NR	510	431	NR	640	529	NR	770	14	NR	900	0	NR
385	0	NR	515	521	NR	645	477	NR	775	13	NR	905	0	NR
390	1	NR	520	596	NR	650	429	NR	780	11	NR	910	0	NR
395	3	NR	525	655	NR	655	383	NR	785	9	NR	915	0	NR
400	6	NR	530	701	NR	660	338	NR	790	8	NR	920	0	NR
405	9	NR	535	739	NR	665	298	NR	795	7	NR	925	0	NR
410	16	NR	540	766	NR	670	261	NR	800	6	NR	930	0	NR
415	32	NR	545	791	NR	675	228	NR	805	5	NR	935	0	NR
420	65	NR	550	813	NR	680	200	NR	810	5	NR	940	0	NR
425	131	NR	555	833	NR	685	173	NR	815	4	NR	945	0	NR
430	245	NR	560	852	NR	690	151	NR	820	3	NR	950	0	NR
435	432	NR	565	870	NR	695	130	NR	825	3	NR	955	0	NR
440	622	NR	570	885	NR	700	112	NR	830	3	NR	960	0	NR
445	870	NR	575	900	NR	705	97	NR	835	2	NR	965	0	NR
450	969	NR	580	911	NR	710	83	NR	840	2	NR	970	0	NR
455	544	NR	585	916	NR	715	71	NR	845	2	NR	975	0	NR
460	304	NR	590	912	NR	720	60	NR	850	1	NR	980	0	NR
465	231	NR	595	901	NR	725	51	NR	855	1	NR	985	0	NR
470	142	NR	600	882	NR	730	43	NR	860	1	NR	990	0	NR
475	96	NR	605	855	NR	735	37	NR	865	1	NR	995	0	NR
480	92	NR	610	820	NR	740	32	NR	870	1	NR	1000	0	NR
485	96	NR	615	776	NR	745	29	NR	875	1	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.72

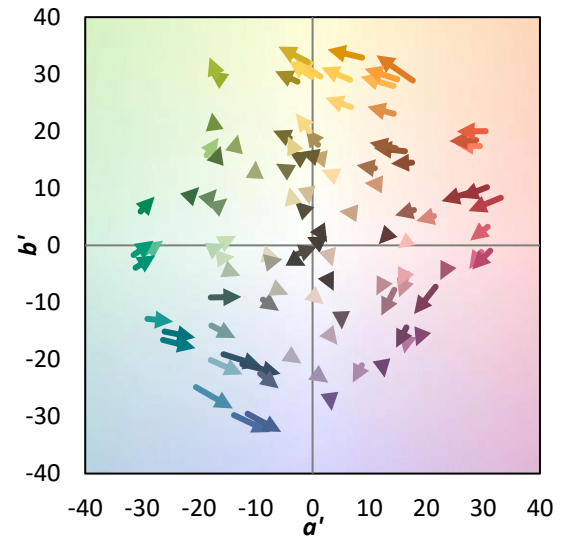
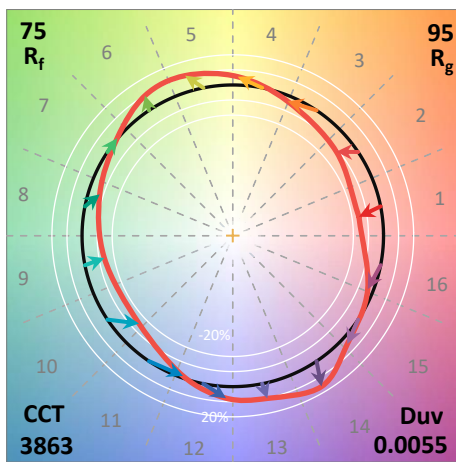
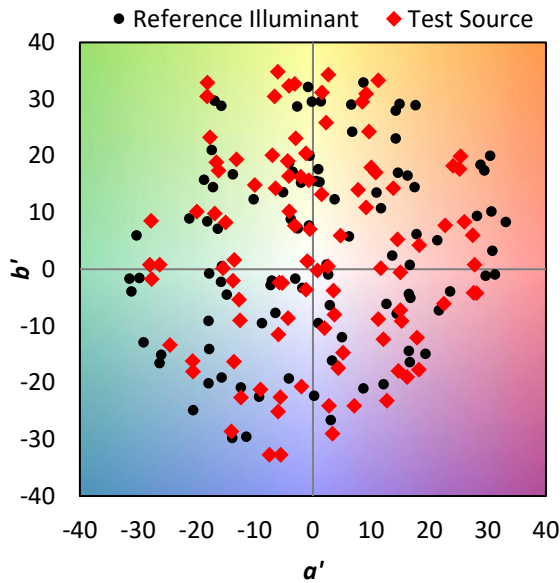
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	118	NR	620	730	NR	750	25	NR	880	1	NR
365	0	NR	495	170	NR	625	680	NR	755	22	NR	885	0	NR
370	0	NR	500	245	NR	630	630	NR	760	19	NR	890	0	NR
375	0	NR	505	338	NR	635	579	NR	765	17	NR	895	0	NR
380	0	NR	510	431	NR	640	529	NR	770	14	NR	900	0	NR
385	0	NR	515	521	NR	645	477	NR	775	13	NR	905	0	NR
390	1	NR	520	596	NR	650	429	NR	780	11	NR	910	0	NR
395	3	NR	525	655	NR	655	383	NR	785	9	NR	915	0	NR
400	6	NR	530	701	NR	660	338	NR	790	8	NR	920	0	NR
405	9	NR	535	739	NR	665	298	NR	795	7	NR	925	0	NR
410	16	NR	540	766	NR	670	261	NR	800	6	NR	930	0	NR
415	32	NR	545	791	NR	675	228	NR	805	5	NR	935	0	NR
420	65	NR	550	813	NR	680	200	NR	810	5	NR	940	0	NR
425	131	NR	555	833	NR	685	173	NR	815	4	NR	945	0	NR
430	245	NR	560	852	NR	690	151	NR	820	3	NR	950	0	NR
435	432	NR	565	870	NR	695	130	NR	825	3	NR	955	0	NR
440	622	NR	570	885	NR	700	112	NR	830	3	NR	960	0	NR
445	870	NR	575	900	NR	705	97	NR	835	2	NR	965	0	NR
450	969	NR	580	911	NR	710	83	NR	840	2	NR	970	0	NR
455	544	NR	585	916	NR	715	71	NR	845	2	NR	975	0	NR
460	304	NR	590	912	NR	720	60	NR	850	1	NR	980	0	NR
465	231	NR	595	901	NR	725	51	NR	855	1	NR	985	0	NR
470	142	NR	600	882	NR	730	43	NR	860	1	NR	990	0	NR
475	96	NR	605	855	NR	735	37	NR	865	1	NR	995	0	NR
480	92	NR	610	820	NR	740	32	NR	870	1	NR	1000	0	NR
485	96	NR	615	776	NR	745	29	NR	875	1	NR			

Summary

$R_f = 74.7$
 $R_g = 95.4$
 CIE $R_a = 71.9$
 $R_g = -23.5$

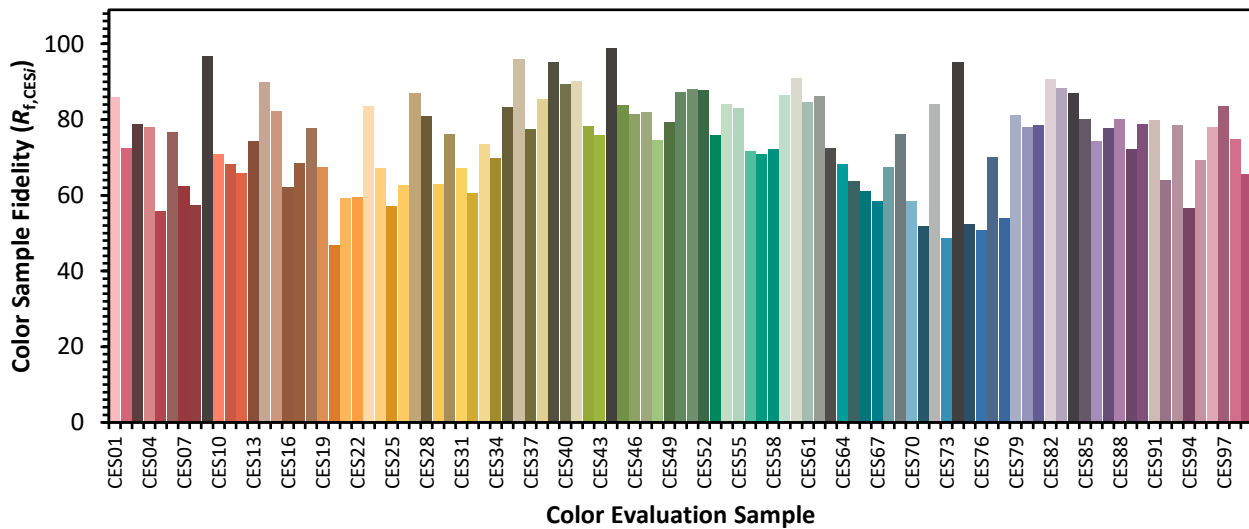


Color Vector Graphics



Individual Sample Fidelity Index ($R_{f,i}$)

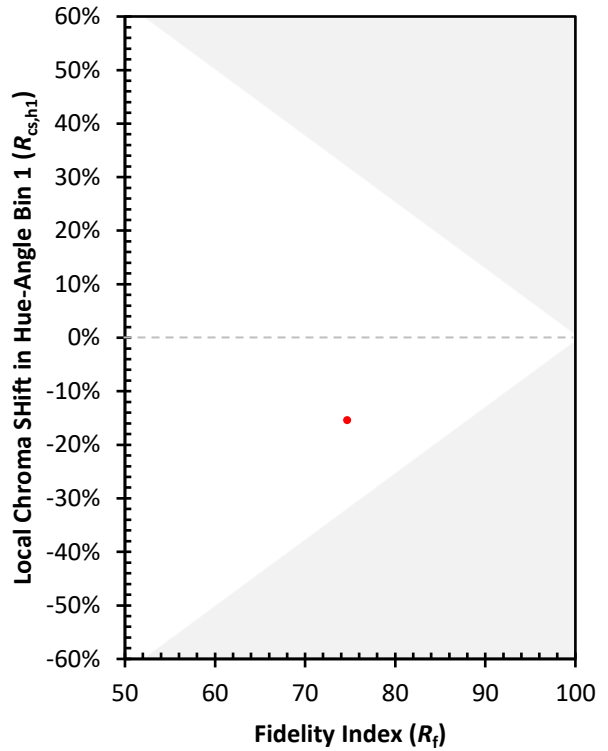
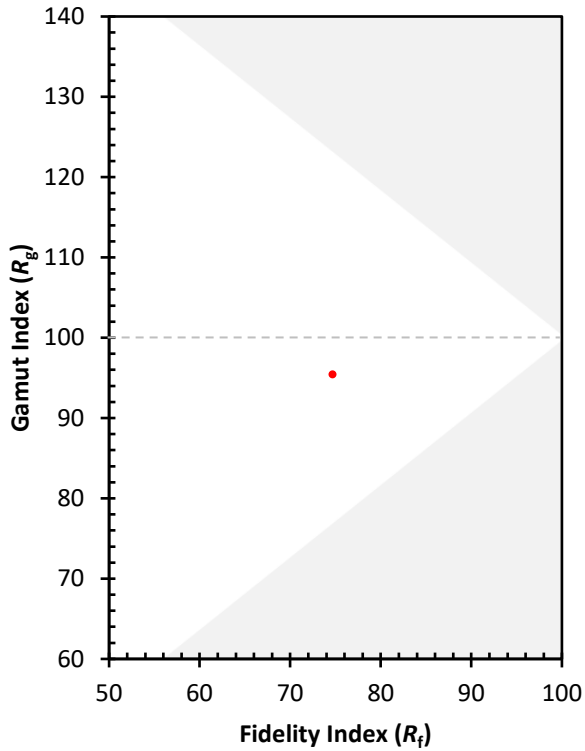
CES01 = 85	CES26 = 63	CES51 = 88	CES76 = 51
CES02 = 61	CES27 = 87	CES52 = 88	CES77 = 70
CES03 = 30	CES28 = 81	CES53 = 76	CES78 = 54
CES04 = 70	CES29 = 63	CES54 = 84	CES79 = 81
CES05 = 47	CES30 = 76	CES55 = 83	CES80 = 78
CES06 = 50	CES31 = 67	CES56 = 72	CES81 = 79
CES07 = 40	CES32 = 61	CES57 = 71	CES82 = 91
CES08 = 39	CES33 = 73	CES58 = 72	CES83 = 88
CES09 = 29	CES34 = 70	CES59 = 86	CES84 = 87
CES10 = 74	CES35 = 83	CES60 = 91	CES85 = 80
CES11 = 57	CES36 = 96	CES61 = 85	CES86 = 74
CES12 = 63	CES37 = 77	CES62 = 86	CES87 = 78
CES13 = 42	CES38 = 85	CES63 = 72	CES88 = 80
CES14 = 74	CES39 = 95	CES64 = 68	CES89 = 72
CES15 = 71	CES40 = 89	CES65 = 64	CES90 = 79
CES16 = 46	CES41 = 90	CES66 = 61	CES91 = 80
CES17 = 49	CES42 = 78	CES67 = 58	CES92 = 64
CES18 = 56	CES43 = 76	CES68 = 67	CES93 = 78
CES19 = 71	CES44 = 99	CES69 = 76	CES94 = 57
CES20 = 65	CES45 = 84	CES70 = 58	CES95 = 69
CES21 = 86	CES46 = 81	CES71 = 52	CES96 = 78
CES22 = 78	CES47 = 82	CES72 = 84	CES97 = 84
CES23 = 92	CES48 = 75	CES73 = 49	CES98 = 75
CES24 = 91	CES49 = 79	CES74 = 95	CES99 = 66
CES25 = 72	CES50 = 87	CES75 = 52	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)