

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: P833545

Luminaire Tested: **TTN-D2-735-U-WQ-SG-UPL1**

Issue Date: 5/15/2024

**Test Information**

Test Method: LM-79-08  
Report Number: P833545  
REPORT IS FROM IESNA LM-79-08 TEST DATA - UPLIGHT (G3-2308-121-4) AND  
Test Lab: INNOVATION CENTER  
Issue Date: 5/15/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: TTN-D2-735-U-WQ-SG-UPL1  
Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE WITH UPLIGHT  
3500K, 70 CRI LEDS AND WIDE DISTRIBUTION WITH SOLITE GLASS  
Light Source: -  
Ballast/Driver: -

**Summary**

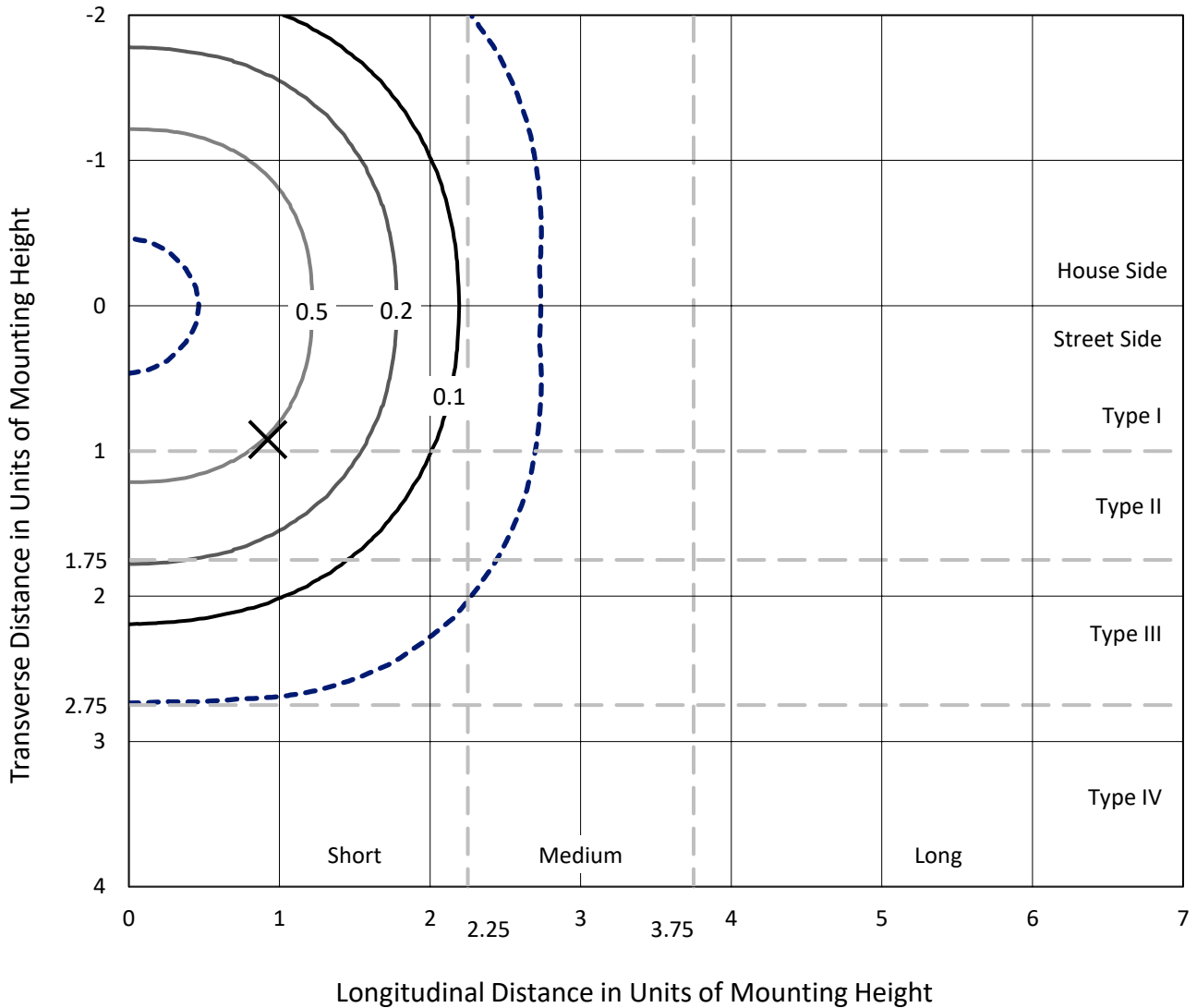
Lumens per Lamp: N/A  
Luminaire Lumens: 4965.9 lumens  
Efficiency: N/A  
Efficacy: 110.1 lumens/watt  
Luminous Opening: Vertical Cylinder (Dia: 0.71' x H: 0.1')  
IES Classification: Type V - Short  
BUG Rating: B2 - U3 - G1  
  
Input Watts (W): 45.1  
Input Voltage (V): NR  
Input Current (Ain): 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



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### Iso-Footcandle Lines of Horizontal Illumination

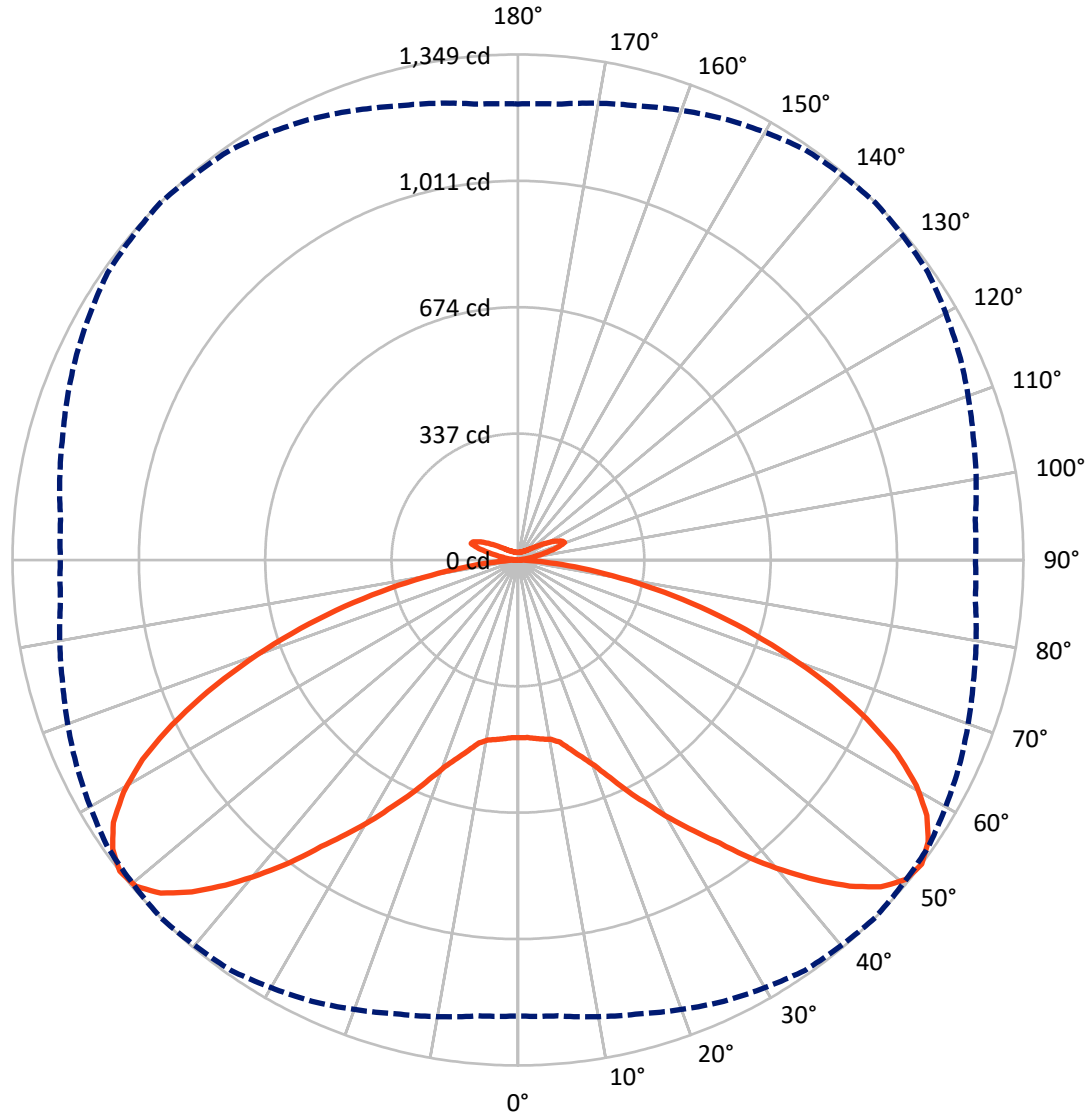
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.8 fc  
 Type V - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral      - - - Horizontal Cone Through 52.5-Deg Vertical

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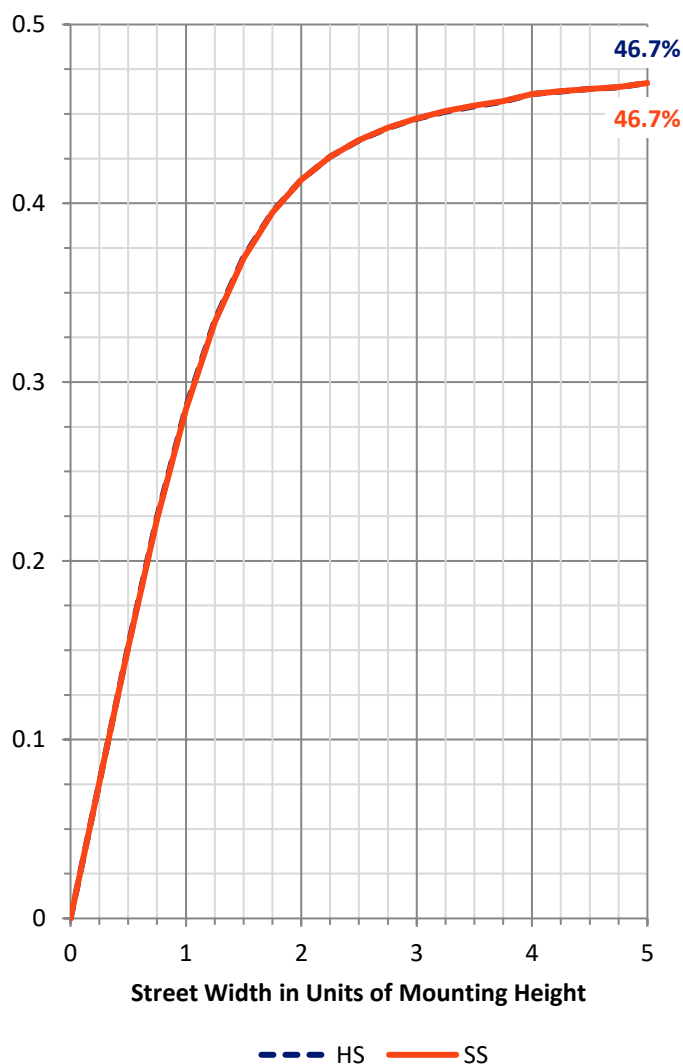
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2332.7	150.2	2482.9
	% Fixture	47.0	3.0	50.0
<b>Street Side</b>	Lumens	2332.7	150.2	2482.9
	% Fixture	47.0	3.0	50.0
<b>Total</b>	Lumens	4665.4	300.5	4965.9
	% Fixture	93.9	6.1	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	45.8	0.9
10°-20°	150.5	3.0
20°-30°	317.7	6.4
30°-40°	580.4	11.7
40°-50°	923.9	18.6
50°-60°	1117.2	22.5
60°-70°	939.4	18.9
70°-80°	497.9	10.0
80°-90°	92.5	1.9
90°-100°	6.7	0.1
100°-110°	68.2	1.4
110°-120°	99.6	2.0
120°-130°	57.8	1.2
130°-140°	30.6	0.6
140°-150°	18.2	0.4
150°-160°	11.2	0.2
160°-170°	6.1	0.1
170°-180°	2.0	0.0
0°-90°	4665.4	93.9
0°-180°	4965.9	100.0

**Coefficient of Utilization**



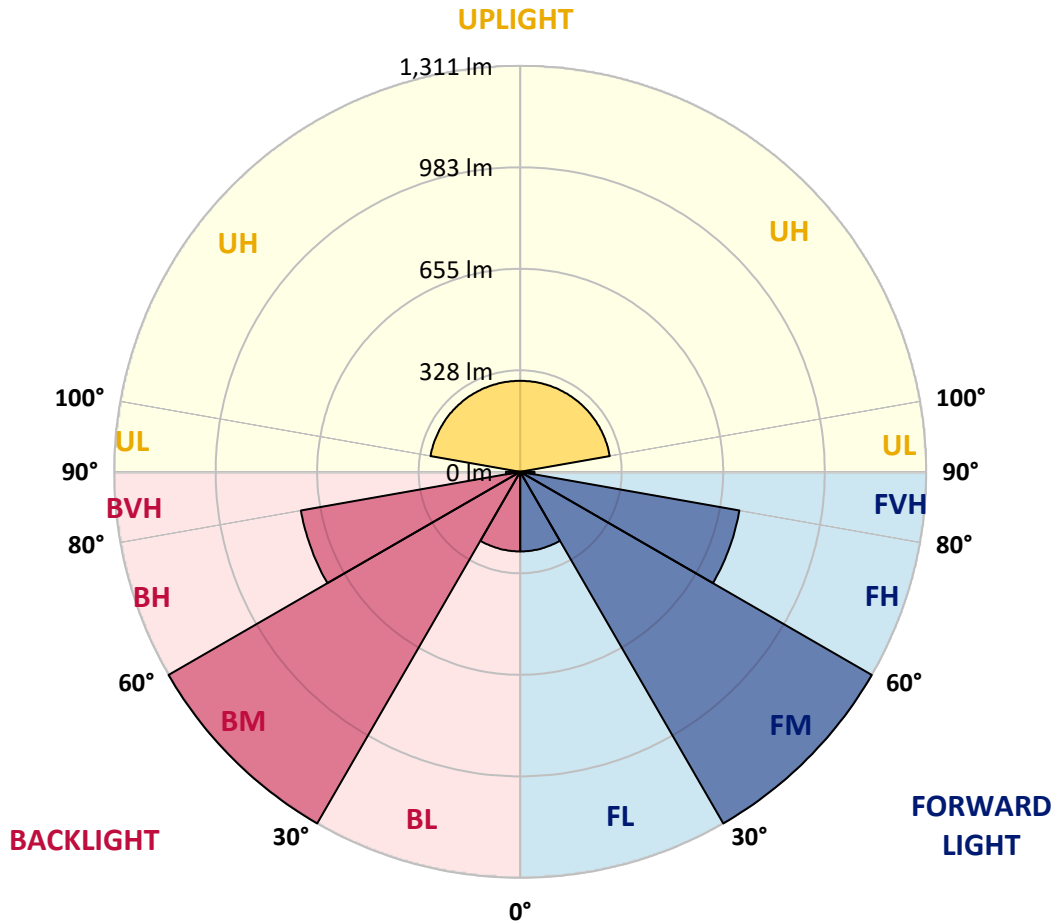
REPORT NUMBER: P833545  
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	257.0	5.2			
FM (30°-60°)	1310.7	26.4			
FH (60°-80°)	718.7	14.5			G1/1800
FVH (80°-90°)	46.3	0.9			G1/100
BL (0°-30°)	257.0	5.2	B1/500		
BM (30°-60°)	1310.7	26.4	B2/2500		
BH (60°-80°)	718.7	14.5	B2/1000		G1/1800
BVH (80°-90°)	46.3	0.9			G1/100
UL (90°-100°)	6.7	0.1		U1/10	
UH (100°-180°)	293.8	5.9		U3/500	

**BUG Rating: B2-U3-G1**

Type V Short





REPORT NUMBER: P833545

CATALOG NUMBER: TTN-D2-735-U-WQ-SG-UPL1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	474.3	474.3	474.3	474.3	474.3	474.3	474.3	474.3	474.3	474.3	474.3
2.5°	474.3	474.3	474.3	474.3	474.3	474.3	474.3	474.3	474.3	474.3	474.3
5°	478.4	478.4	474.3	478.4	478.4	478.4	478.4	478.4	478.4	478.4	478.4
7.5°	478.4	478.4	478.4	482.5	482.5	482.5	482.5	478.4	478.4	478.4	478.4
10°	486.7	486.7	486.7	486.7	486.7	486.7	486.7	486.7	486.7	486.7	486.7
12.5°	499.0	499.0	499.0	499.0	499.0	499.0	499.0	499.0	499.0	499.0	499.0
15°	519.6	519.6	519.6	519.6	523.8	523.8	523.8	519.6	519.6	519.6	519.6
17.5°	544.4	544.4	548.5	548.5	552.6	552.6	552.6	548.5	544.4	548.5	544.4
20°	581.5	581.5	581.5	585.6	589.8	585.6	589.8	581.5	581.5	581.5	581.5
22.5°	622.7	622.7	622.7	626.9	631.0	631.0	631.0	622.7	622.7	622.7	622.7
25°	672.2	672.2	672.2	676.4	680.5	684.6	684.6	676.4	672.2	672.2	668.1
27.5°	721.7	721.7	730.0	734.1	738.2	738.2	738.2	730.0	725.9	725.9	725.9
30°	779.5	779.5	787.7	791.8	800.1	800.1	800.1	787.7	783.6	779.5	779.5
32.5°	833.1	837.2	845.5	853.7	861.9	861.9	866.1	849.6	841.3	837.2	837.2
35°	890.8	894.9	903.2	915.6	923.8	927.9	932.1	915.6	903.2	899.1	899.1
37.5°	956.8	960.9	973.3	985.7	1002.2	1010.4	1014.5	989.8	969.2	960.9	960.9
40°	1031.0	1035.2	1047.5	1064.0	1080.5	1088.8	1092.9	1068.2	1047.5	1039.3	1035.2
42.5°	1092.9	1101.2	1113.5	1138.3	1154.8	1167.1	1167.1	1138.3	1113.5	1101.2	1101.2
45°	1150.6	1158.9	1179.5	1204.3	1229.0	1241.4	1237.2	1208.4	1179.5	1163.0	1158.9
47.5°	1196.0	1204.3	1229.0	1257.9	1290.9	1303.2	1299.1	1266.1	1229.0	1208.4	1204.3
50°	1220.8	1224.9	1253.7	1295.0	1328.0	1340.4	1332.1	1299.1	1257.9	1229.0	1224.9
52.5°	1216.6	1220.8	1253.7	1299.1	1336.2	1348.6	1336.2	1299.1	1257.9	1224.9	1220.8
55°	1191.9	1196.0	1229.0	1278.5	1315.6	1328.0	1315.6	1278.5	1233.1	1200.1	1196.0
57.5°	1146.5	1150.6	1183.6	1233.1	1274.4	1286.7	1270.2	1229.0	1183.6	1150.6	1150.6
60°	1080.5	1084.7	1117.6	1171.3	1208.4	1220.8	1200.1	1167.1	1121.8	1084.7	1080.5
62.5°	993.9	993.9	1031.0	1084.7	1117.6	1134.1	1113.5	1076.4	1035.2	993.9	998.0
65°	890.8	886.7	923.8	973.3	1010.4	1022.8	1002.2	969.2	927.9	890.8	890.8
67.5°	783.6	783.6	812.5	853.7	886.7	899.1	878.4	849.6	816.6	783.6	783.6
70°	668.1	668.1	688.7	730.0	758.8	767.1	754.7	725.9	697.0	668.1	668.1
72.5°	552.6	548.5	569.1	602.1	626.9	635.1	622.7	606.3	573.3	552.6	552.6
75°	437.2	433.0	445.4	474.3	494.9	503.1	490.8	478.4	453.7	437.2	437.2
77.5°	325.8	321.7	334.1	358.8	371.2	375.3	367.1	358.8	338.2	325.8	325.8
80°	222.7	218.6	226.8	243.3	255.7	255.7	251.6	247.4	231.0	222.7	226.8
82.5°	132.0	127.8	136.1	148.5	156.7	152.6	152.6	148.5	136.1	132.0	132.0
85°	57.7	53.6	57.7	66.0	74.2	70.1	70.1	70.1	61.9	57.7	57.7
87.5°	8.2	8.2	8.2	12.4	16.5	12.4	12.4	12.4	8.2	8.2	8.2
90°	2.6	2.6	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.6	2.6
92.5°	2.6	2.6	2.6	3.6	4.1	3.6	4.1	3.1	3.1	2.6	2.6
95°	3.1	3.1	3.6	4.6	5.7	6.2	6.2	3.6	3.6	3.1	3.1
97.5°	4.1	4.6	4.6	5.7	9.3	17.0	10.3	5.1	5.1	4.6	4.1
100°	6.7	7.2	7.2	12.9	27.2	36.5	26.2	13.4	9.8	7.2	7.2
102.5°	21.6	22.6	27.8	41.6	61.7	56.0	47.3	44.7	30.8	24.7	23.6
105°	55.0	54.5	58.6	69.4	86.4	84.8	78.1	70.9	61.2	56.5	56.5
107.5°	72.5	72.5	76.1	85.3	98.2	114.6	116.2	92.0	80.7	75.6	75.0
110°	81.7	81.7	84.8	92.5	109.5	132.6	131.6	113.6	99.7	93.0	92.0



REPORT NUMBER: P833545  
 CATALOG NUMBER: TTN-D2-735-U-WQ-SG-UPL1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
112.5°	83.8	84.3	88.4	100.2	118.7	129.0	124.4	117.2	111.0	105.9	104.9
115°	86.9	86.9	91.5	102.8	113.1	117.2	112.1	106.4	102.3	100.2	101.3
117.5°	85.8	87.4	88.4	94.6	101.3	104.4	101.8	94.1	91.0	90.0	88.4
120°	79.7	79.7	80.7	83.8	87.4	88.9	87.9	82.8	80.2	79.7	78.6
122.5°	70.9	71.5	70.9	72.5	75.0	76.6	75.6	71.5	70.4	70.4	69.4
125°	62.2	62.2	61.7	62.7	64.3	63.7	64.3	62.2	61.7	61.7	61.2
127.5°	56.0	55.5	54.5	55.0	55.5	55.5	56.0	54.0	54.5	55.0	54.5
130°	49.9	49.9	48.8	48.8	48.8	47.8	48.8	47.8	48.3	48.8	49.3
132.5°	44.2	44.2	42.7	42.2	42.2	42.2	42.7	42.2	43.2	44.2	44.2
135°	39.6	39.6	38.0	38.6	38.6	38.0	38.6	38.0	39.1	39.6	39.6
137.5°	36.0	36.0	35.0	35.0	35.0	34.4	35.0	35.0	35.5	36.5	37.0
140°	32.9	32.9	32.4	32.4	31.9	32.4	32.4	32.4	32.9	33.4	33.4
142.5°	31.4	30.8	30.3	29.8	30.3	30.3	30.3	29.8	30.3	31.4	31.4
145°	28.8	28.8	28.3	28.3	28.3	28.8	28.3	28.3	28.8	28.8	29.3
147.5°	27.2	27.2	26.7	27.2	27.2	27.2	27.2	26.7	27.2	27.2	27.8
150°	26.7	26.2	25.7	26.2	26.2	25.7	25.7	25.7	25.7	26.2	26.2
152.5°	25.2	25.2	24.7	25.2	24.7	24.7	24.7	24.7	24.7	25.2	25.7
155°	24.2	24.2	23.6	24.2	24.2	24.2	24.2	24.2	24.2	24.2	24.2
157.5°	23.1	23.6	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.6	23.6
160°	22.6	22.6	22.6	22.6	22.1	22.1	22.1	22.6	22.6	22.6	23.1
162.5°	22.1	22.1	22.1	22.1	21.6	21.6	21.6	21.6	22.1	22.1	22.6
165°	22.1	21.6	21.6	21.6	21.1	21.1	21.1	21.1	21.6	22.1	21.6
167.5°	21.1	21.1	21.1	21.1	21.1	20.6	20.6	21.1	21.1	21.1	21.6
170°	21.1	21.1	20.6	20.6	20.6	20.6	20.6	20.6	20.6	20.6	21.1
172.5°	21.1	21.1	21.1	21.1	20.6	20.6	20.6	20.6	20.6	21.1	21.1
175°	21.1	21.1	21.1	21.1	20.6	20.6	20.6	21.1	21.1	21.1	20.6
177.5°	21.1	21.1	21.1	21.1	20.6	21.1	21.1	21.1	21.1	21.1	21.1
180°	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1	21.1



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: SP1-2411-284-1

Test Date: 11/15/2024

Luminaire Tested: TTN-D0-735-U-WQ

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

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2411-284-1  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 11/15/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: MCGRAW EDISON  
 Catalog Number: **TTN-D0-735-U-WQ**  
 Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE. 3500K, 70 CRI LEDS AND WIDE DISTRIBUTION

**Spectral Parameters**

CCT (K): 3405  
 CIE u': 0.2365  
 CIE v': 0.5180  
 Duv: 0.0036  
 CIE x: 0.4148  
 CIE y: 0.4038  
 CIE z: 0.1814  
 Peak Wavelength (nm): 596  
 Dominant Wavelength (nm): 579  
 Purity: 45.70672  
 Rf: 76.6  
 Rg: 95.4

CRI (Ra):	73.9		
R1:	71.3	R9:	-18.0
R2:	80.3	R10:	53.1
R3:	87.8	R11:	68.6
R4:	73.2	R12:	42.6
R5:	69.8	R13:	72.5
R6:	71.8	R14:	92.7
R7:	82.8	R15:	64.3
R8:	54.1		



**Test Conditions**

Stabilization Time: 38M  
 Operation Time: 1H 38M  
 Sphere Temperature (°C): 24.9

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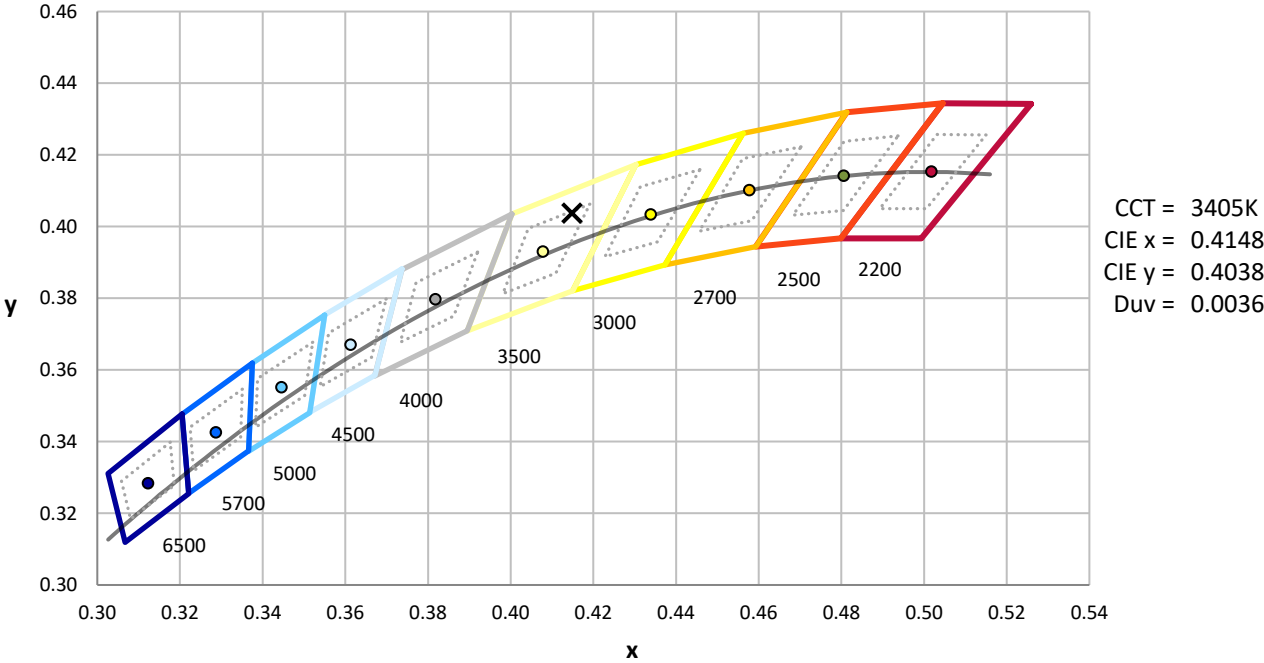
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085	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 3500K 4-step quadrangle

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**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)
360	0	NR	490	119	NR	620	846	NR	750	28	NR	880	1	NR
365	0	NR	495	160	NR	625	793	NR	755	25	NR	885	0	NR
370	0	NR	500	225	NR	630	739	NR	760	22	NR	890	0	NR
375	0	NR	505	308	NR	635	681	NR	765	19	NR	895	0	NR
380	0	NR	510	392	NR	640	623	NR	770	16	NR	900	0	NR
385	0	NR	515	474	NR	645	563	NR	775	14	NR	905	0	NR
390	0	NR	520	545	NR	650	506	NR	780	12	NR	910	0	NR
395	1	NR	525	603	NR	655	451	NR	785	10	NR	915	0	NR
400	3	NR	530	649	NR	660	399	NR	790	9	NR	920	0	NR
405	5	NR	535	687	NR	665	352	NR	795	8	NR	925	0	NR
410	11	NR	540	721	NR	670	307	NR	800	6	NR	930	0	NR
415	21	NR	545	751	NR	675	268	NR	805	6	NR	935	0	NR
420	43	NR	550	779	NR	680	234	NR	810	5	NR	940	0	NR
425	88	NR	555	811	NR	685	203	NR	815	4	NR	945	0	NR
430	163	NR	560	843	NR	690	176	NR	820	4	NR	950	0	NR
435	288	NR	565	873	NR	695	152	NR	825	3	NR	955	0	NR
440	416	NR	570	907	NR	700	131	NR	830	3	NR	960	0	NR
445	566	NR	575	938	NR	705	112	NR	835	3	NR	965	0	NR
450	810	NR	580	965	NR	710	96	NR	840	2	NR	970	0	NR
455	669	NR	585	986	NR	715	81	NR	845	2	NR	975	0	NR
460	338	NR	590	997	NR	720	69	NR	850	2	NR	980	0	NR
465	246	NR	595	997	NR	725	58	NR	855	1	NR	985	0	NR
470	182	NR	600	991	NR	730	49	NR	860	1	NR	990	0	NR
475	115	NR	605	968	NR	735	42	NR	865	1	NR	995	0	NR
480	97	NR	610	939	NR	740	37	NR	870	1	NR	1000	0	NR
485	103	NR	615	896	NR	745	32	NR	875	1	NR			

REPORT NUMBER: SP1-2411-284-1

**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 1.33**

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	119	NR	620	846	NR	750	28	NR	880	1	NR
365	0	NR	495	160	NR	625	793	NR	755	25	NR	885	0	NR
370	0	NR	500	225	NR	630	739	NR	760	22	NR	890	0	NR
375	0	NR	505	308	NR	635	681	NR	765	19	NR	895	0	NR
380	0	NR	510	392	NR	640	623	NR	770	16	NR	900	0	NR
385	0	NR	515	474	NR	645	563	NR	775	14	NR	905	0	NR
390	0	NR	520	545	NR	650	506	NR	780	12	NR	910	0	NR
395	1	NR	525	603	NR	655	451	NR	785	10	NR	915	0	NR
400	3	NR	530	649	NR	660	399	NR	790	9	NR	920	0	NR
405	5	NR	535	687	NR	665	352	NR	795	8	NR	925	0	NR
410	11	NR	540	721	NR	670	307	NR	800	6	NR	930	0	NR
415	21	NR	545	751	NR	675	268	NR	805	6	NR	935	0	NR
420	43	NR	550	779	NR	680	234	NR	810	5	NR	940	0	NR
425	88	NR	555	811	NR	685	203	NR	815	4	NR	945	0	NR
430	163	NR	560	843	NR	690	176	NR	820	4	NR	950	0	NR
435	288	NR	565	873	NR	695	152	NR	825	3	NR	955	0	NR
440	416	NR	570	907	NR	700	131	NR	830	3	NR	960	0	NR
445	566	NR	575	938	NR	705	112	NR	835	3	NR	965	0	NR
450	810	NR	580	965	NR	710	96	NR	840	2	NR	970	0	NR
455	669	NR	585	986	NR	715	81	NR	845	2	NR	975	0	NR
460	338	NR	590	997	NR	720	69	NR	850	2	NR	980	0	NR
465	246	NR	595	997	NR	725	58	NR	855	1	NR	985	0	NR
470	182	NR	600	991	NR	730	49	NR	860	1	NR	990	0	NR
475	115	NR	605	968	NR	735	42	NR	865	1	NR	995	0	NR
480	97	NR	610	939	NR	740	37	NR	870	1	NR	1000	0	NR
485	103	NR	615	896	NR	745	32	NR	875	1	NR			

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Melanopic Flux vs. Wavelength



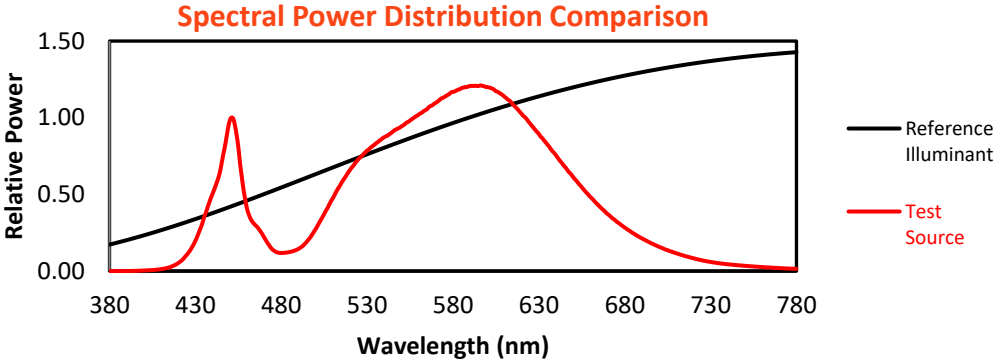
Melanopic Lumens: NR

M/P: 2.47

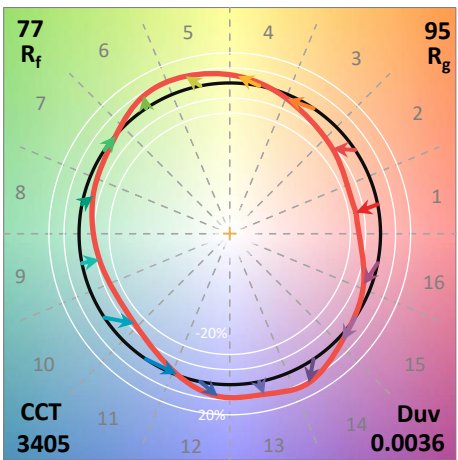
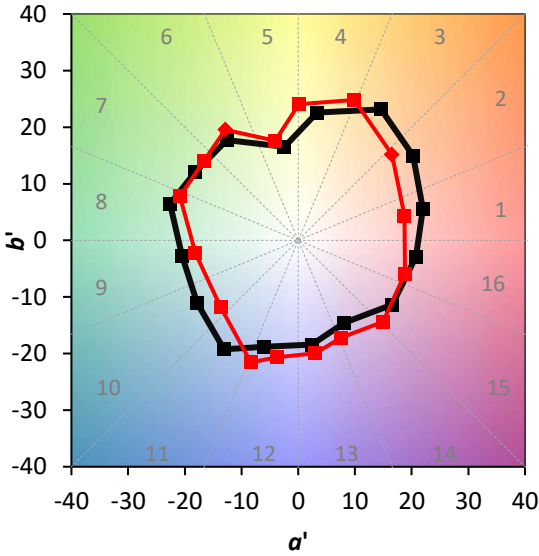
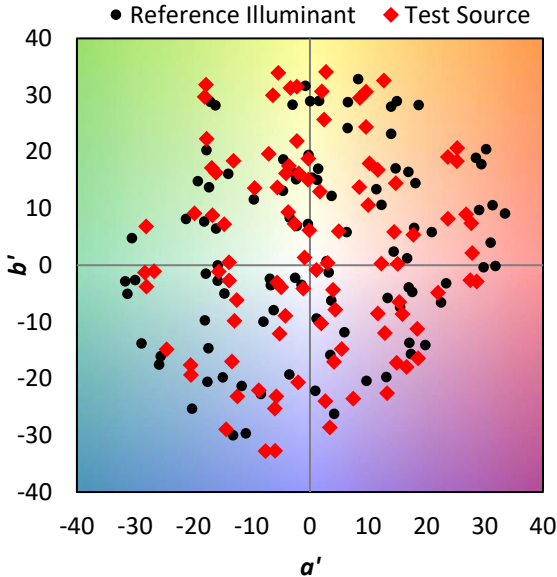
λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	119	NR	620	846	NR	750	28	NR	880	1	NR
365	0	NR	495	160	NR	625	793	NR	755	25	NR	885	0	NR
370	0	NR	500	225	NR	630	739	NR	760	22	NR	890	0	NR
375	0	NR	505	308	NR	635	681	NR	765	19	NR	895	0	NR
380	0	NR	510	392	NR	640	623	NR	770	16	NR	900	0	NR
385	0	NR	515	474	NR	645	563	NR	775	14	NR	905	0	NR
390	0	NR	520	545	NR	650	506	NR	780	12	NR	910	0	NR
395	1	NR	525	603	NR	655	451	NR	785	10	NR	915	0	NR
400	3	NR	530	649	NR	660	399	NR	790	9	NR	920	0	NR
405	5	NR	535	687	NR	665	352	NR	795	8	NR	925	0	NR
410	11	NR	540	721	NR	670	307	NR	800	6	NR	930	0	NR
415	21	NR	545	751	NR	675	268	NR	805	6	NR	935	0	NR
420	43	NR	550	779	NR	680	234	NR	810	5	NR	940	0	NR
425	88	NR	555	811	NR	685	203	NR	815	4	NR	945	0	NR
430	163	NR	560	843	NR	690	176	NR	820	4	NR	950	0	NR
435	288	NR	565	873	NR	695	152	NR	825	3	NR	955	0	NR
440	416	NR	570	907	NR	700	131	NR	830	3	NR	960	0	NR
445	566	NR	575	938	NR	705	112	NR	835	3	NR	965	0	NR
450	810	NR	580	965	NR	710	96	NR	840	2	NR	970	0	NR
455	669	NR	585	986	NR	715	81	NR	845	2	NR	975	0	NR
460	338	NR	590	997	NR	720	69	NR	850	2	NR	980	0	NR
465	246	NR	595	997	NR	725	58	NR	855	1	NR	985	0	NR
470	182	NR	600	991	NR	730	49	NR	860	1	NR	990	0	NR
475	115	NR	605	968	NR	735	42	NR	865	1	NR	995	0	NR
480	97	NR	610	939	NR	740	37	NR	870	1	NR	1000	0	NR
485	103	NR	615	896	NR	745	32	NR	875	1	NR			

**Summary**

$R_f = 76.6$   
 $R_g = 95.4$   
 $CIE R_a = 73.9$   
 $R_g = -18.0$



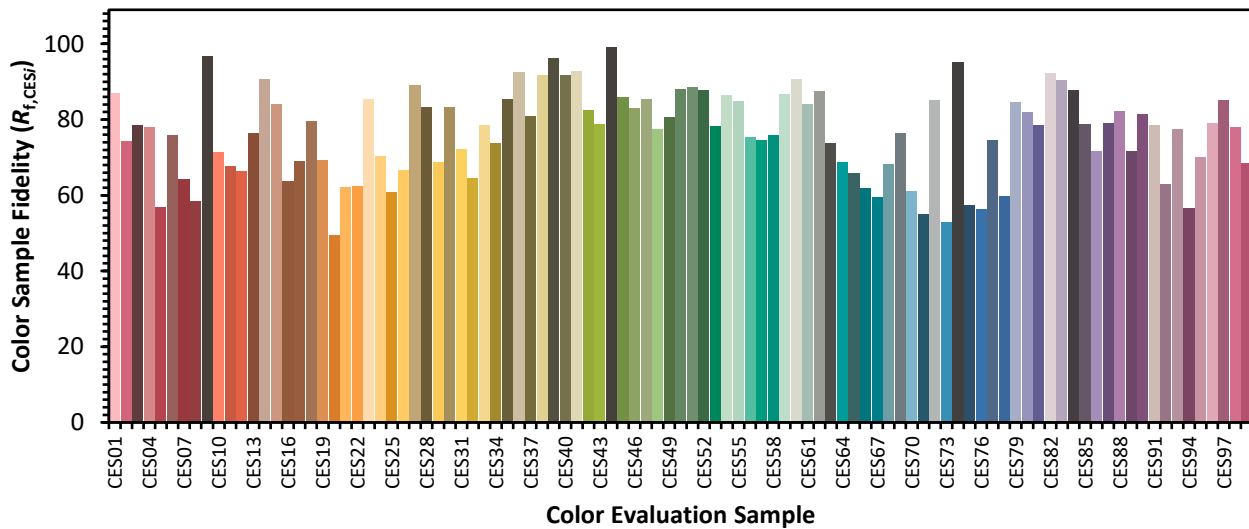
**Color Vector Graphics**





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

CES01 = 86	CES26 = 67	CES51 = 88	CES76 = 56
CES02 = 62	CES27 = 89	CES52 = 88	CES77 = 75
CES03 = 31	CES28 = 83	CES53 = 78	CES78 = 60
CES04 = 70	CES29 = 69	CES54 = 86	CES79 = 85
CES05 = 48	CES30 = 83	CES55 = 85	CES80 = 82
CES06 = 51	CES31 = 72	CES56 = 75	CES81 = 78
CES07 = 41	CES32 = 65	CES57 = 75	CES82 = 92
CES08 = 40	CES33 = 78	CES58 = 76	CES83 = 90
CES09 = 29	CES34 = 74	CES59 = 87	CES84 = 88
CES10 = 75	CES35 = 86	CES60 = 91	CES85 = 79
CES11 = 58	CES36 = 93	CES61 = 84	CES86 = 72
CES12 = 64	CES37 = 81	CES62 = 88	CES87 = 79
CES13 = 43	CES38 = 92	CES63 = 74	CES88 = 82
CES14 = 74	CES39 = 96	CES64 = 69	CES89 = 72
CES15 = 71	CES40 = 92	CES65 = 66	CES90 = 82
CES16 = 47	CES41 = 93	CES66 = 62	CES91 = 79
CES17 = 50	CES42 = 83	CES67 = 60	CES92 = 63
CES18 = 56	CES43 = 79	CES68 = 68	CES93 = 77
CES19 = 72	CES44 = 99	CES69 = 76	CES94 = 56
CES20 = 65	CES45 = 86	CES70 = 61	CES95 = 70
CES21 = 86	CES46 = 83	CES71 = 55	CES96 = 79
CES22 = 79	CES47 = 85	CES72 = 85	CES97 = 85
CES23 = 92	CES48 = 78	CES73 = 53	CES98 = 78
CES24 = 91	CES49 = 81	CES74 = 95	CES99 = 68
CES25 = 72	CES50 = 88	CES75 = 57	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)