

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



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: METALUX

Report Number: P1433680

Luminaire Tested: EHBR1-60-UNV-ASM-L935-UPL36

Issue Date: 3/20/2026

**Test Information**

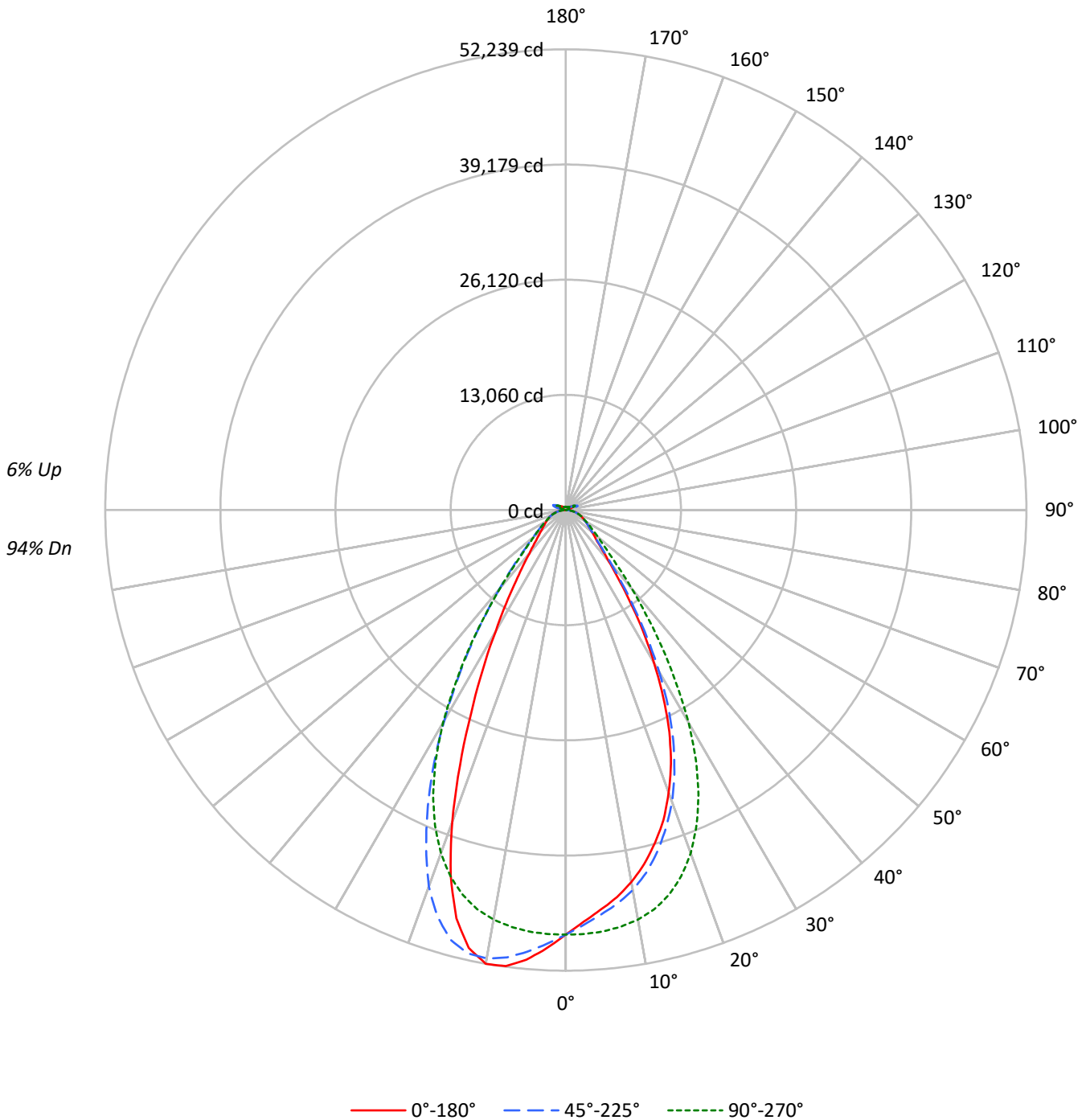
Test Method: LM-79-2019  
Report Number: P1433680  
REPORT IS A COMBINATION OF REPORTS P1431905 AND P1431635  
Test Lab: INNOVATION CENTER  
Issue Date: 3/20/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: EHBR1-60-UNV-ASM-L935-UPL36  
Description: Elevate Round Highbay at, 60000 lumens, 3500K 90CRI LEDs with ASM lens  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 57167.7 lumens  
Efficiency: N/A  
Efficacy: 159.3 lumens/watt  
Spacing Criteria (0/90/45): 0.84 / 0.99 / 0.92  
Luminous Opening: Vertical Cylinder (Dia: 1.71' x H: 0.1')  
CIE Type: Direct  
  
Input Watts (W): 358.8  
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

TEST NUMBER: P1433680  
CATALOG NUMBER: EHBR1-60-UNV-ASM-L935-UPL36

### Luminous Intensity Polar Plot





TEST NUMBER: P1433680

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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	118	118	118	118	114	114	114	114	108	108	108	102	102	102	97	97	97	97	97	97	94
1	110	107	104	101	107	104	101	99	99	97	95	94	93	91	90	89	87	87	87	87	85
2	103	97	93	88	101	95	91	87	91	87	84	87	84	81	83	81	79	79	79	79	77
3	97	89	83	78	94	87	82	77	84	79	75	80	77	73	77	74	72	72	72	72	70
4	91	82	76	71	89	81	74	70	78	72	68	75	70	67	72	68	65	65	65	65	64
5	86	76	69	64	84	75	68	64	72	67	62	70	65	61	67	63	60	60	60	60	58
6	81	70	64	59	79	69	63	58	67	62	57	65	60	56	63	59	56	56	56	56	54
7	76	66	59	54	74	65	58	54	63	57	53	61	56	52	59	55	52	52	52	52	50
8	72	61	55	50	70	61	54	50	59	53	49	57	52	49	56	51	48	48	48	48	46
9	68	58	51	47	67	57	51	46	55	50	46	54	49	45	53	48	45	45	45	45	43
10	65	54	48	43	64	53	47	43	52	47	43	51	46	42	50	45	42	42	42	42	41

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°	135°	180°
0°	226081	226081	226081	226081	226081
5°	213044	215535	224705	235482	239719
10°	201629	205899	221943	243043	245873
15°	186250	191225	215390	240550	228493
20°	165897	171484	201444	221112	183220
25°	139029	144291	178294	185463	126945
30°	104021	110052	144768	143323	82587
35°	69249	73430	103832	102155	53485
40°	43672	46672	67131	67563	36865
45°	31117	32411	42594	44425	28556
50°	25919	26125	31631	32455	24265
55°	22879	22933	25825	26507	22105
60°	21184	21003	22363	22836	21056
65°	20221	20039	20386	20783	20307
70°	19640	19301	19322	19691	19898
75°	18672	18108	18068	18710	19249
80°	16988	15806	15872	16988	18173
85°	12371	10271	10271	11740	12974

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 112.5°  
 Vertical Angle: 45°  
 Luminance: 59885 cd/sqm



TEST NUMBER: P1433680  
 CATALOG NUMBER: EHBR1-60-UNV-ASM-L935-UPL36

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	4577.6	8.0
10°-20°	12453.7	21.8
20°-30°	14605.6	25.5
30°-40°	10157.3	17.8
40°-50°	5047.7	8.8
50°-60°	3019.1	5.3
60°-70°	2124.9	3.7
70°-80°	1368.8	2.4
80°-90°	440.7	0.8
90°-100°	90.4	0.2
100°-110°	584.7	1.0
110°-120°	1079.3	1.9
120°-130°	642.3	1.1
130°-140°	389.6	0.7
140°-150°	270.6	0.5
150°-160°	177.8	0.3
160°-170°	103.2	0.2
170°-180°	34.6	0.1
0°-30°	31636.9	55.3
0°-40°	41794.2	73.1
0°-60°	49860.9	87.2
0°-90°	53795.3	94.1
90°-120°	1754.4	3.1
90°-150°	3056.8	5.3
90°-180°	3372.0	5.9
0°-180°	57167.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	48142	48142	48142	48142	48142	
5°	45488	46020	47978	50279	51184	4267
15°	39074	40118	45188	50466	47937	10897
25°	27764	28815	35605	37037	25351	12527
35°	12710	13477	19057	18749	9816	8096
45°	5035	5244	6892	7188	4620	4070
55°	3092	3099	3490	3582	2987	2805
65°	2111	2092	2128	2169	2120	2096
75°	1315	1276	1273	1318	1356	1388
85°	425	353	353	404	446	438
90°	25	68	25	73	31	33
95°	42	151	48	131	48	40
105°	204	1019	269	1088	140	272
115°	932	1205	1148	1335	983	859
125°	674	647	736	717	773	614
135°	493	498	467	521	540	386
145°	412	432	424	434	444	261
155°	369	380	380	380	396	172
165°	355	363	362	362	375	101
175°	357	362	363	362	372	34
180°	363	363	363	363	363	



TEST NUMBER: P1433680

CATALOG NUMBER: EHBR1-60-UNV-ASM-L935-UPL36

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	48142.4	48142.4	48142.4	48142.4	48142.4	48142.4	48142.4	48142.4	48142.4
2.5°	46713.3	46744.1	47070.9	47496.0	48114.4	48736.4	49240.2	49572.4	49736.7
5°	45488.3	45658.1	46020.1	46801.0	47978.1	49223.9	50279.2	50969.8	51183.8
7.5°	44294.9	44393.3	44999.1	45985.7	47652.2	49593.1	51161.2	51967.3	52164.2
10°	42838.8	43061.8	43746.1	44909.7	47154.8	49826.0	51637.9	52215.6	52239.0
12.5°	41125.4	41420.5	42127.4	43595.3	46361.3	49743.0	51478.1	51288.5	50857.9
15°	39074.3	39333.5	40118.0	41820.5	45187.7	49251.0	50466.1	48923.3	47936.6
17.5°	36859.0	37093.7	37775.3	39650.3	43533.9	48330.2	48353.7	45301.5	43440.0
20°	34096.6	34280.8	35244.9	37084.8	41402.5	46853.3	45445.0	39862.5	37657.0
22.5°	31157.3	31329.7	32186.4	34101.1	38730.4	44861.9	41394.4	34391.0	31382.0
25°	27763.9	27857.8	28814.7	30546.1	35605.1	42421.8	37036.9	28429.2	25350.9
27.5°	23946.1	24105.9	25107.2	26875.6	31929.1	39328.9	32396.8	23231.2	20391.2
30°	20008.4	20272.9	21168.4	22751.9	27846.0	35364.1	27568.0	18500.8	15885.6
32.5°	16333.3	16523.8	17162.1	18816.8	23274.6	31477.7	22930.6	14823.9	12608.6
35°	12709.7	12900.2	13477.0	15102.0	19056.9	26615.6	18749.1	11648.1	9816.5
37.5°	9715.3	10052.0	10422.2	11741.1	14955.7	22021.6	14945.8	9379.5	7962.2
40°	7569.5	7623.7	8089.4	8933.5	11635.5	17218.9	11710.4	7487.4	6389.6
42.5°	6059.2	6206.4	6406.8	7038.6	8816.2	13166.5	9204.4	6145.0	5427.3
45°	5034.6	5092.4	5244.0	5668.4	6891.6	9689.1	7187.7	5184.5	4620.2
47.5°	4404.5	4379.2	4476.7	4794.5	5612.4	7488.3	5825.4	4446.9	4051.5
50°	3862.9	3847.5	3893.5	4105.7	4714.1	5746.0	4836.9	3881.8	3616.3
52.5°	3442.2	3455.7	3460.2	3592.1	4049.7	4686.2	4119.2	3459.3	3280.6
55°	3091.9	3109.1	3099.1	3196.6	3490.0	3939.5	3582.1	3110.9	2987.2
57.5°	2818.3	2805.7	2792.2	2844.5	3064.8	3342.0	3110.9	2813.9	2731.7
60°	2546.6	2534.9	2524.9	2559.3	2688.4	2894.2	2745.3	2554.8	2531.3
62.5°	2313.8	2306.5	2305.6	2299.3	2398.6	2528.6	2427.5	2321.8	2301.1
65°	2110.6	2102.5	2091.6	2081.7	2127.8	2248.7	2169.3	2112.4	2119.6
67.5°	1907.5	1907.5	1888.5	1873.2	1918.3	1981.5	1947.3	1914.7	1922.9
70°	1723.3	1724.2	1693.6	1681.8	1695.4	1763.1	1727.8	1732.4	1745.9
72.5°	1525.6	1504.0	1481.4	1480.5	1482.3	1534.7	1522.9	1533.8	1548.2
75°	1315.3	1290.0	1275.6	1259.3	1272.8	1312.5	1318.0	1333.4	1356.0
77.5°	1112.2	1073.4	1061.6	1053.5	1044.5	1089.6	1106.7	1127.6	1160.9
80°	893.7	851.3	831.5	819.7	835.0	855.8	893.7	909.0	956.0
82.5°	660.8	629.2	604.8	604.0	611.1	630.1	662.6	691.5	718.6
85°	425.2	374.7	353.0	361.1	353.0	381.8	403.5	437.8	445.9
87.5°	153.4	120.1	114.7	126.3	123.7	132.7	151.6	165.2	166.1
90°	25.0	39.9	67.6	43.5	25.0	42.6	73.1	42.5	31.4
92.5°	36.2	60.3	108.4	56.6	32.4	57.5	102.9	55.5	40.6
95°	41.7	69.5	151.1	75.0	48.1	70.4	130.6	61.1	48.0
97.5°	53.7	76.9	173.3	91.7	74.1	87.1	147.3	64.8	57.3
100°	70.4	89.9	269.7	113.0	98.2	98.2	267.8	74.0	64.7
102.5°	118.6	190.0	571.9	211.3	148.3	191.8	619.1	145.4	77.7
105°	203.8	399.5	1018.6	441.2	268.7	436.5	1088.1	369.7	139.8
107.5°	352.2	714.6	1344.0	780.4	507.9	812.8	1401.4	725.6	319.6
110°	656.2	948.2	1408.9	1071.5	811.9	1135.4	1529.3	992.6	642.1



TEST NUMBER: P1433680  
 CATALOG NUMBER: EHBR1-60-UNV-ASM-L935-UPL36

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	886.1	1018.6	1349.5	1182.7	1056.6	1265.1	1494.1	1100.1	886.8
115°	932.4	979.7	1205.0	1154.8	1148.4	1246.7	1334.7	1096.4	983.3
117.5°	900.9	894.5	1023.2	1039.0	1109.4	1141.0	1152.9	1029.7	988.8
120°	834.2	796.2	854.6	907.4	1001.9	989.0	972.2	931.4	933.2
122.5°	750.7	706.3	733.1	772.9	867.5	839.7	822.0	832.2	857.2
125°	673.8	628.4	646.9	657.1	735.8	708.1	717.3	746.9	772.8
127.5°	605.2	574.6	585.8	575.5	625.5	612.6	641.3	674.6	696.8
130°	558.8	532.9	547.7	522.7	546.8	549.5	587.6	616.2	630.1
132.5°	520.9	504.2	521.7	491.0	497.6	511.5	547.7	572.6	581.0
135°	493.0	479.1	497.6	469.8	467.0	487.4	520.8	536.5	540.2
137.5°	469.8	457.8	477.2	455.8	449.4	469.8	494.8	507.7	504.9
140°	449.4	439.2	459.5	442.8	439.1	459.6	470.7	485.5	483.6
142.5°	427.2	419.7	443.7	432.7	429.0	447.5	453.1	464.1	461.3
145°	412.3	406.7	431.7	425.3	424.3	438.2	433.6	447.5	443.6
147.5°	399.1	395.4	417.6	415.0	415.0	425.3	419.6	431.7	427.9
150°	388.0	384.3	405.6	402.9	404.7	412.1	403.9	417.6	417.6
152.5°	376.9	372.2	391.7	388.9	390.8	398.2	390.8	406.5	405.6
155°	369.3	364.7	380.5	378.7	379.6	383.3	379.6	395.3	396.2
157.5°	364.6	361.0	373.0	372.1	372.1	374.9	373.0	386.9	387.8
160°	360.9	358.2	368.3	367.4	366.5	370.2	369.2	381.3	382.2
162.5°	357.2	354.4	366.4	364.6	364.6	364.6	364.6	376.6	378.4
165°	355.3	354.4	362.7	362.7	361.8	363.6	361.7	371.0	374.6
167.5°	355.3	353.4	362.7	362.7	361.7	359.9	361.7	370.0	373.7
170°	355.2	354.3	361.7	360.8	358.9	359.8	359.8	368.1	371.7
172.5°	357.0	356.1	364.4	362.6	361.6	361.6	360.6	367.0	372.5
175°	357.0	356.1	362.5	362.5	363.4	362.5	362.4	367.0	372.5
177.5°	359.7	358.8	362.5	362.5	361.6	363.4	365.2	369.7	377.1
180°	363.4	363.4	363.4	363.4	363.4	363.4	363.4	363.4	363.4



TEST NUMBER: P1433680  
 CATALOG NUMBER: EHBR1-60-UNV-ASM-L935-UPL36

**CIE UGR TABLE:**

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	18.86	19.97	19.33	20.41	20.87	19.62	20.74	20.09	21.17	21.64
	3H	20.67	21.66	21.16	22.12	22.63	21.18	22.17	21.67	22.63	23.14
	4H	21.41	22.34	21.92	22.81	23.34	21.83	22.76	22.34	23.23	23.76
	6H	21.98	22.83	22.50	23.32	23.86	22.32	23.18	22.84	23.66	24.20
	8H	22.16	22.97	22.69	23.47	24.02	22.48	23.29	23.01	23.79	24.34
	12H	22.26	23.03	22.80	23.53	24.10	22.56	23.33	23.10	23.83	24.40
4H	2H	19.37	20.30	19.88	20.77	21.30	20.00	20.93	20.51	21.40	21.93
	3H	21.41	22.18	21.93	22.70	23.24	21.81	22.57	22.33	23.09	23.64
	4H	22.28	22.96	22.81	23.49	24.08	22.59	23.28	23.13	23.81	24.40
	6H	22.97	23.56	23.53	24.12	24.72	23.23	23.82	23.79	24.38	24.98
	8H	23.20	23.75	23.77	24.30	24.91	23.43	23.99	24.00	24.54	25.15
	12H	23.33	23.82	23.92	24.41	25.02	23.55	24.04	24.14	24.63	25.24
8H	4H	22.53	23.09	23.10	23.64	24.25	22.84	23.39	23.41	23.95	24.55
	6H	23.35	23.80	23.95	24.40	25.02	23.60	24.05	24.20	24.65	25.27
	8H	23.65	24.05	24.27	24.67	25.30	23.88	24.29	24.50	24.90	25.53
	12H	23.86	24.21	24.47	24.80	25.51	24.07	24.42	24.68	25.02	25.72
12H	4H	22.54	23.03	23.13	23.62	24.23	22.85	23.34	23.43	23.92	24.53
	6H	23.39	23.79	24.01	24.41	25.03	23.65	24.05	24.27	24.66	25.29
	8H	23.74	24.09	24.35	24.68	25.39	23.98	24.33	24.59	24.92	25.63

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

Report Prepared for

Cooper Lighting Solutions

Metalux

Report Number: SP1-2506-472-6

Test Date: 08/01/2025

Luminaire Tested: EHBR-60-L935-N

Data in this report applies to families of products including EHBR-60-L935-N

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2506-472-6  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 08/05/2025  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: Metalux  
 Catalog Number: **EHBR-60-L935-N**  
 Description: Elevate Round Highbay at, 60000 lumens, 3500K 90CRI LEDs with N lens

**Spectral Parameters**

CCT (K): 3406  
 CIE u': 0.2394  
 CIE v': 0.5094  
 Duv: -0.0028  
 CIE x: 0.4076  
 CIE y: 0.3856  
 CIE z: 0.2068  
 Peak Wavelength (nm): 630  
 Dominant Wavelength (nm): 582  
 Purity: 38.0517  
 Rf: 91.3  
 Rg: 100

CRI (Ra): 94.6  
 R1: 96.6  
 R2: 98.4  
 R3: 98.1  
 R4: 95.8  
 R5: 96.2  
 R6: 95.4  
 R7: 91.8  
 R8: 84.4  
 R9: 63.8  
 R10: 94.7  
 R11: 96.6  
 R12: 80.9  
 R13: 97.4  
 R14: 98.3  
 R15: 93.1



**Test Conditions**

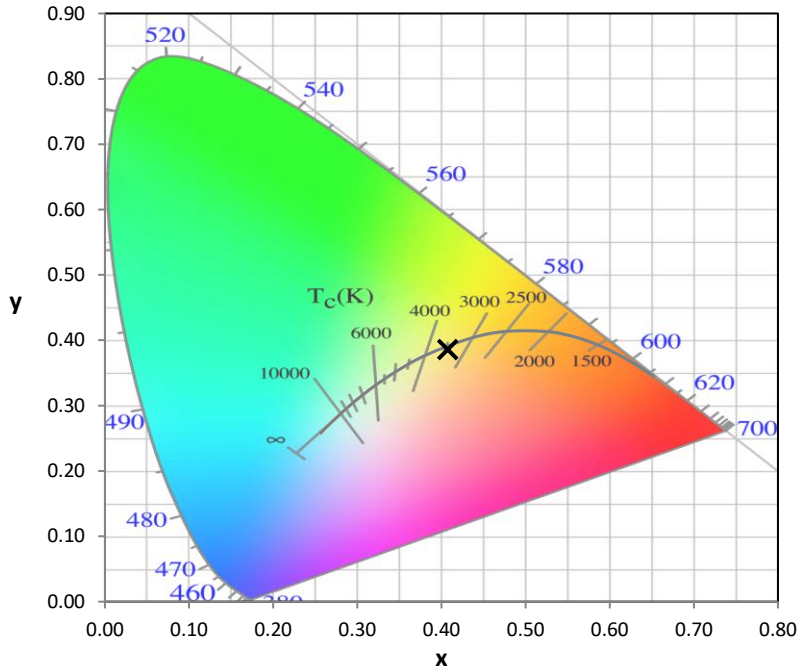
Stabilization Time: 35M  
 Operation Time: 1H 35M  
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2506-472-6

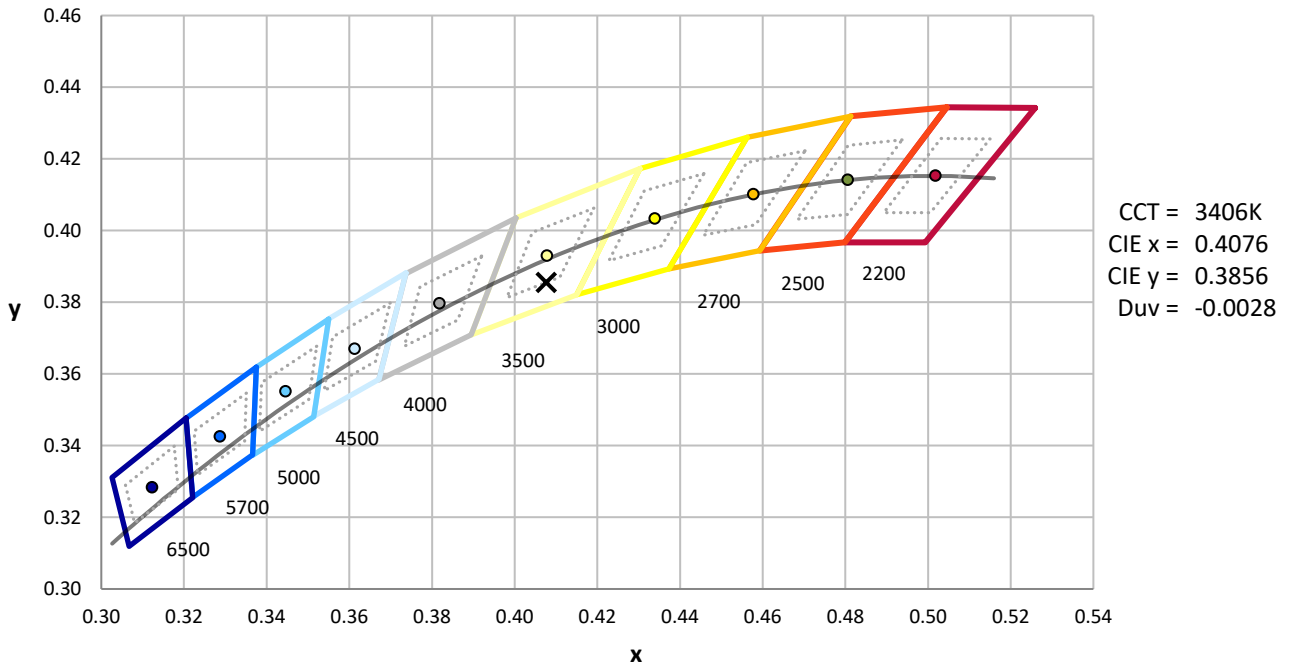
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	6/16/2025	12/16/2025
Power Meter	XITRON INXT2011004	1/21/2025	1/21/2026
AC Power Source	CHROMA 61603 IN0063	10/22/2024	10/22/2025
DC Power Source	AGILENT E3634A IN0208	10/22/2024	10/22/2025
Sphere Thermometer	ONSET IN0085	10/22/2024	10/22/2025
Room Thermometer	ONSET IN0046	10/22/2024	10/22/2025

REPORT NUMBER: SP1-2506-472-6

**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**

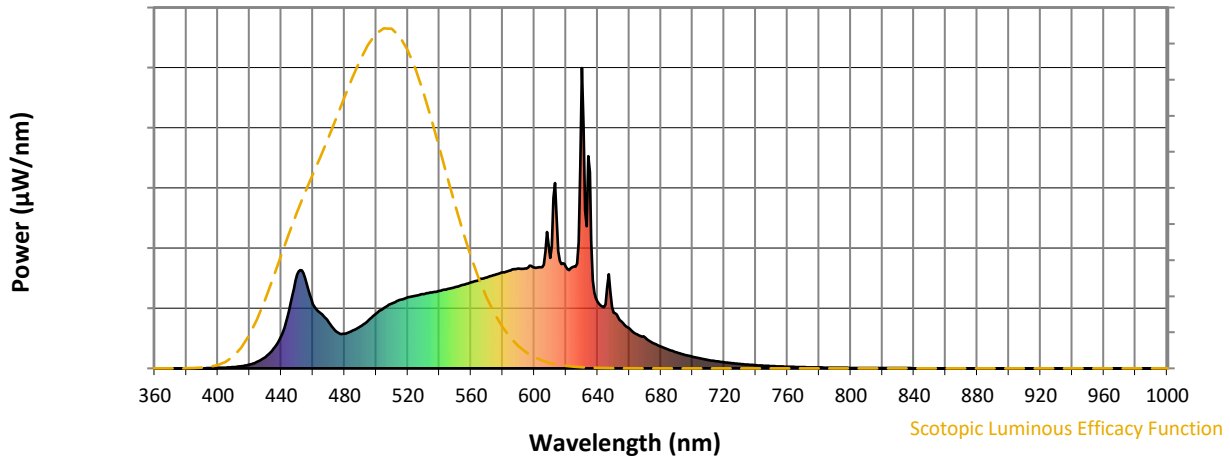


**Photopic Lumens: NR**

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	140	NR	620	338	NR	750	8	NR	880	0	NR
365	0	NR	495	159	NR	625	339	NR	755	7	NR	885	0	NR
370	0	NR	500	182	NR	630	1000	NR	760	5	NR	890	0	NR
375	0	NR	505	202	NR	635	653	NR	765	5	NR	895	0	NR
380	0	NR	510	216	NR	640	222	NR	770	4	NR	900	0	NR
385	0	NR	515	228	NR	645	214	NR	775	3	NR	905	0	NR
390	0	NR	520	236	NR	650	185	NR	780	3	NR	910	0	NR
395	1	NR	525	242	NR	655	157	NR	785	3	NR	915	0	NR
400	2	NR	530	248	NR	660	133	NR	790	2	NR	920	0	NR
405	3	NR	535	253	NR	665	113	NR	795	2	NR	925	0	NR
410	4	NR	540	258	NR	670	103	NR	800	2	NR	930	0	NR
415	7	NR	545	264	NR	675	85	NR	805	1	NR	935	0	NR
420	13	NR	550	270	NR	680	72	NR	810	1	NR	940	0	NR
425	22	NR	555	278	NR	685	62	NR	815	1	NR	945	0	NR
430	38	NR	560	286	NR	690	53	NR	820	1	NR	950	0	NR
435	65	NR	565	295	NR	695	45	NR	825	1	NR	955	0	NR
440	108	NR	570	303	NR	700	39	NR	830	1	NR	960	0	NR
445	193	NR	575	311	NR	705	33	NR	835	1	NR	965	0	NR
450	312	NR	580	319	NR	710	28	NR	840	1	NR	970	0	NR
455	300	NR	585	326	NR	715	24	NR	845	0	NR	975	0	NR
460	214	NR	590	332	NR	720	20	NR	850	0	NR	980	0	NR
465	184	NR	595	333	NR	725	17	NR	855	0	NR	985	0	NR
470	153	NR	600	336	NR	730	15	NR	860	0	NR	990	0	NR
475	122	NR	605	337	NR	735	12	NR	865	0	NR	995	0	NR
480	115	NR	610	367	NR	740	10	NR	870	0	NR	1000	0	NR
485	125	NR	615	390	NR	745	9	NR	875	0	NR			

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**Scotopic Flux vs. Wavelength**



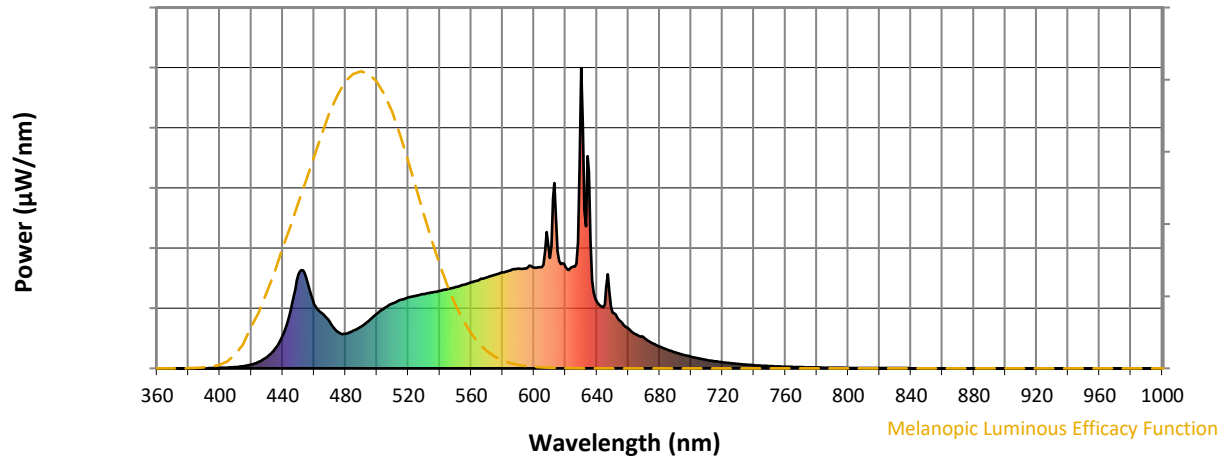
**Scotopic Lumens: NR**

**S/P: 1.62**

$\lambda$ (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	140	NR	620	338	NR	750	8	NR	880	0	NR
365	0	NR	495	159	NR	625	339	NR	755	7	NR	885	0	NR
370	0	NR	500	182	NR	630	1000	NR	760	5	NR	890	0	NR
375	0	NR	505	202	NR	635	653	NR	765	5	NR	895	0	NR
380	0	NR	510	216	NR	640	222	NR	770	4	NR	900	0	NR
385	0	NR	515	228	NR	645	214	NR	775	3	NR	905	0	NR
390	0	NR	520	236	NR	650	185	NR	780	3	NR	910	0	NR
395	1	NR	525	242	NR	655	157	NR	785	3	NR	915	0	NR
400	2	NR	530	248	NR	660	133	NR	790	2	NR	920	0	NR
405	3	NR	535	253	NR	665	113	NR	795	2	NR	925	0	NR
410	4	NR	540	258	NR	670	103	NR	800	2	NR	930	0	NR
415	7	NR	545	264	NR	675	85	NR	805	1	NR	935	0	NR
420	13	NR	550	270	NR	680	72	NR	810	1	NR	940	0	NR
425	22	NR	555	278	NR	685	62	NR	815	1	NR	945	0	NR
430	38	NR	560	286	NR	690	53	NR	820	1	NR	950	0	NR
435	65	NR	565	295	NR	695	45	NR	825	1	NR	955	0	NR
440	108	NR	570	303	NR	700	39	NR	830	1	NR	960	0	NR
445	193	NR	575	311	NR	705	33	NR	835	1	NR	965	0	NR
450	312	NR	580	319	NR	710	28	NR	840	1	NR	970	0	NR
455	300	NR	585	326	NR	715	24	NR	845	0	NR	975	0	NR
460	214	NR	590	332	NR	720	20	NR	850	0	NR	980	0	NR
465	184	NR	595	333	NR	725	17	NR	855	0	NR	985	0	NR
470	153	NR	600	336	NR	730	15	NR	860	0	NR	990	0	NR
475	122	NR	605	337	NR	735	12	NR	865	0	NR	995	0	NR
480	115	NR	610	367	NR	740	10	NR	870	0	NR	1000	0	NR
485	125	NR	615	390	NR	745	9	NR	875	0	NR			

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**Melanopic Flux vs. Wavelength**



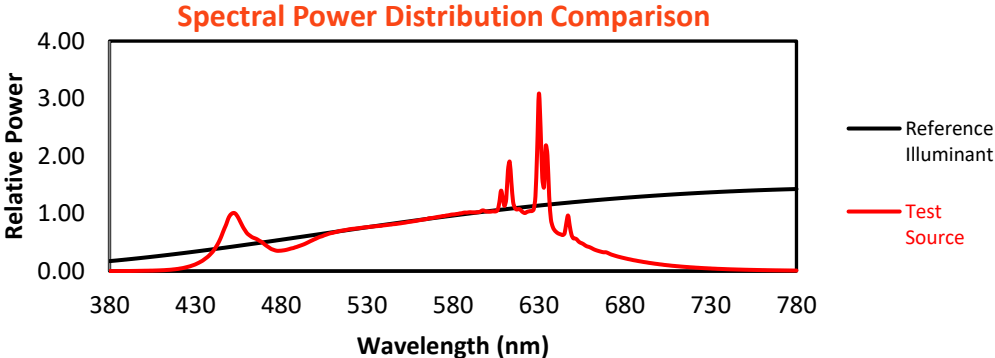
**Melanopic Lumens: NR**

**M/P: 3.3**

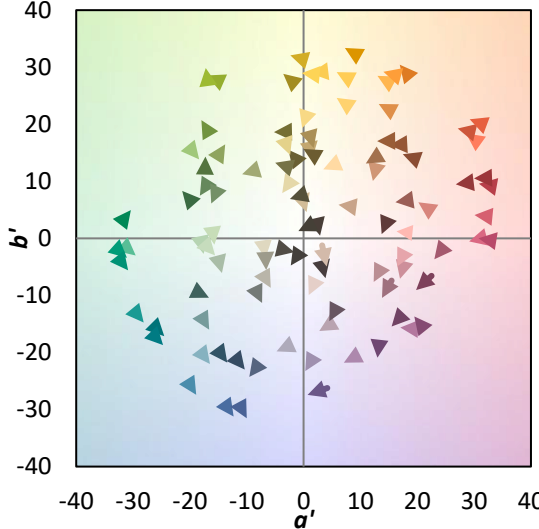
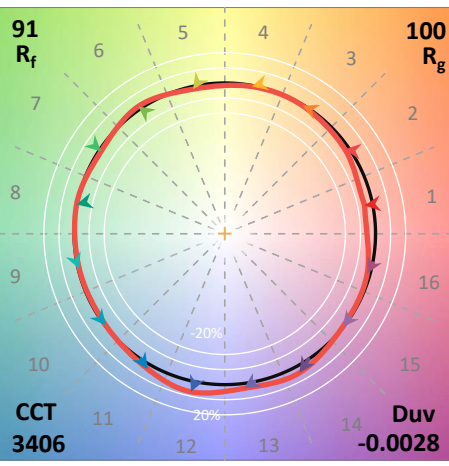
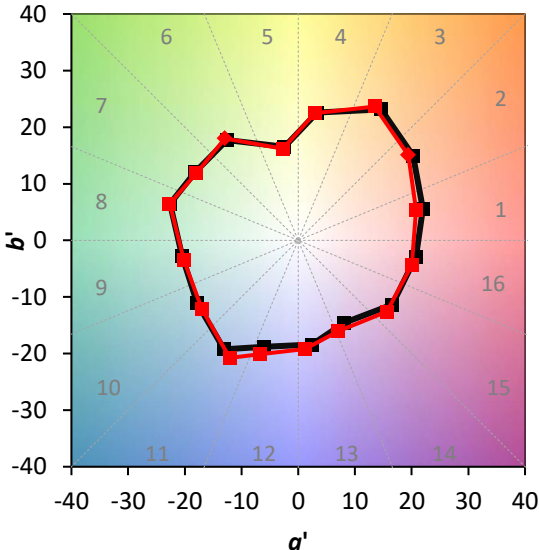
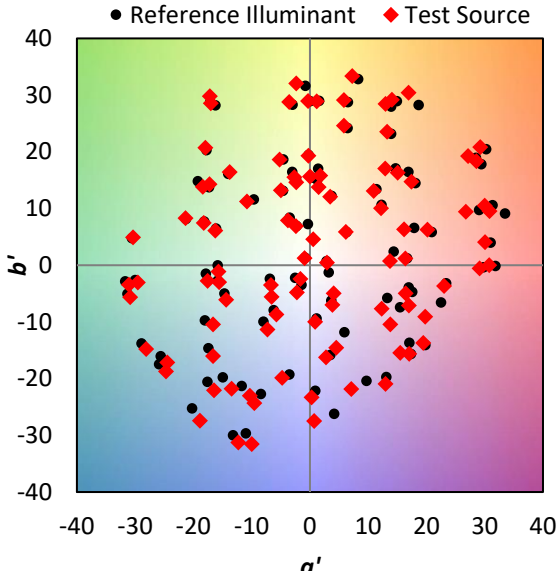
$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)
360	0	NR	490	140	NR	620	338	NR	750	8	NR	880	0	NR
365	0	NR	495	159	NR	625	339	NR	755	7	NR	885	0	NR
370	0	NR	500	182	NR	630	1000	NR	760	5	NR	890	0	NR
375	0	NR	505	202	NR	635	653	NR	765	5	NR	895	0	NR
380	0	NR	510	216	NR	640	222	NR	770	4	NR	900	0	NR
385	0	NR	515	228	NR	645	214	NR	775	3	NR	905	0	NR
390	0	NR	520	236	NR	650	185	NR	780	3	NR	910	0	NR
395	1	NR	525	242	NR	655	157	NR	785	3	NR	915	0	NR
400	2	NR	530	248	NR	660	133	NR	790	2	NR	920	0	NR
405	3	NR	535	253	NR	665	113	NR	795	2	NR	925	0	NR
410	4	NR	540	258	NR	670	103	NR	800	2	NR	930	0	NR
415	7	NR	545	264	NR	675	85	NR	805	1	NR	935	0	NR
420	13	NR	550	270	NR	680	72	NR	810	1	NR	940	0	NR
425	22	NR	555	278	NR	685	62	NR	815	1	NR	945	0	NR
430	38	NR	560	286	NR	690	53	NR	820	1	NR	950	0	NR
435	65	NR	565	295	NR	695	45	NR	825	1	NR	955	0	NR
440	108	NR	570	303	NR	700	39	NR	830	1	NR	960	0	NR
445	193	NR	575	311	NR	705	33	NR	835	1	NR	965	0	NR
450	312	NR	580	319	NR	710	28	NR	840	1	NR	970	0	NR
455	300	NR	585	326	NR	715	24	NR	845	0	NR	975	0	NR
460	214	NR	590	332	NR	720	20	NR	850	0	NR	980	0	NR
465	184	NR	595	333	NR	725	17	NR	855	0	NR	985	0	NR
470	153	NR	600	336	NR	730	15	NR	860	0	NR	990	0	NR
475	122	NR	605	337	NR	735	12	NR	865	0	NR	995	0	NR
480	115	NR	610	367	NR	740	10	NR	870	0	NR	1000	0	NR
485	125	NR	615	390	NR	745	9	NR	875	0	NR			

**Summary**

$R_f = 91.3$   
 $R_g = 100$   
 $CIE R_a = 94.6$   
 $R_9 = 63.8$



**Color Vector Graphics**



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

CES01 = 86	CES26 = 94	CES51 = 97	CES76 = 90
CES02 = 63	CES27 = 92	CES52 = 98	CES77 = 86
CES03 = 31	CES28 = 97	CES53 = 98	CES78 = 86
CES04 = 70	CES29 = 97	CES54 = 93	CES79 = 90
CES05 = 50	CES30 = 92	CES55 = 92	CES80 = 91
CES06 = 51	CES31 = 97	CES56 = 96	CES81 = 74
CES07 = 43	CES32 = 89	CES57 = 94	CES82 = 96
CES08 = 41	CES33 = 99	CES58 = 95	CES83 = 94
CES09 = 29	CES34 = 94	CES59 = 98	CES84 = 95
CES10 = 75	CES35 = 97	CES60 = 92	CES85 = 79
CES11 = 58	CES36 = 81	CES61 = 93	CES86 = 79
CES12 = 64	CES37 = 96	CES62 = 86	CES87 = 92
CES13 = 44	CES38 = 87	CES63 = 94	CES88 = 98
CES14 = 74	CES39 = 99	CES64 = 91	CES89 = 84
CES15 = 72	CES40 = 97	CES65 = 90	CES90 = 96
CES16 = 48	CES41 = 96	CES66 = 89	CES91 = 75
CES17 = 49	CES42 = 94	CES67 = 88	CES92 = 76
CES18 = 56	CES43 = 93	CES68 = 89	CES93 = 86
CES19 = 71	CES44 = 99	CES69 = 90	CES94 = 74
CES20 = 67	CES45 = 97	CES70 = 88	CES95 = 83
CES21 = 86	CES46 = 97	CES71 = 83	CES96 = 92
CES22 = 78	CES47 = 91	CES72 = 94	CES97 = 96
CES23 = 91	CES48 = 91	CES73 = 83	CES98 = 95
CES24 = 90	CES49 = 96	CES74 = 90	CES99 = 92
CES25 = 71	CES50 = 98	CES75 = 85	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)