

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: P319814

Luminaire Tested: **GLEON-SA0C-827-U-SL3**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P319814
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-22)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA0C-827-U-SL3
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(10) 80 CRI, 2700K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 51469 lumens
Efficiency: N/A
Efficacy: 92.2 lumens/watt
Luminous Opening: Rectangular (W 2.5' x L: 1' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B4 - U0 - G5

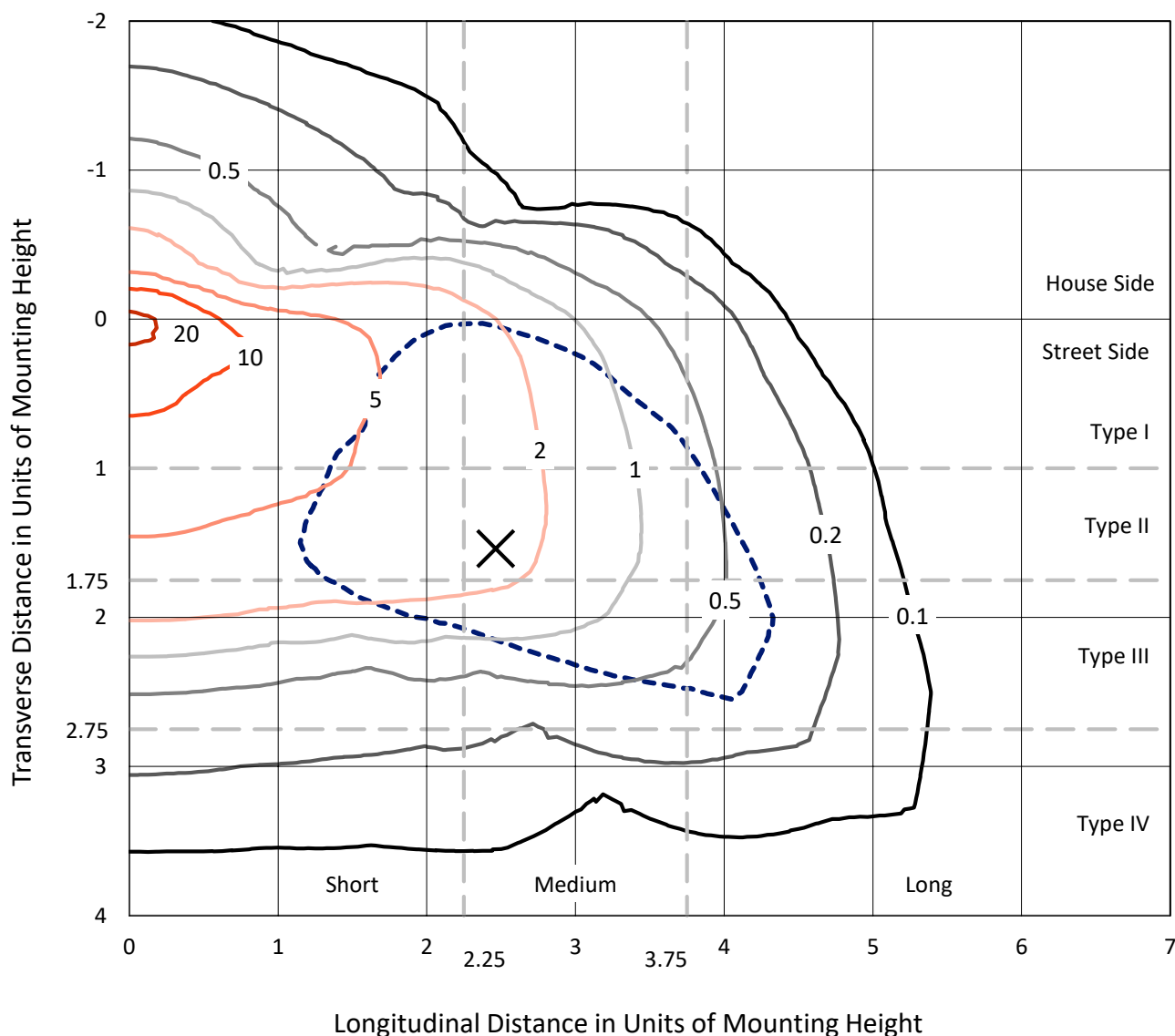
Input Watts (W): 558
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



REPORT NUMBER: P319814
 CATALOG NUMBER: GLEON-SA0C-827-U-SL3

Iso-Footcandle Lines of Horizontal Illumination

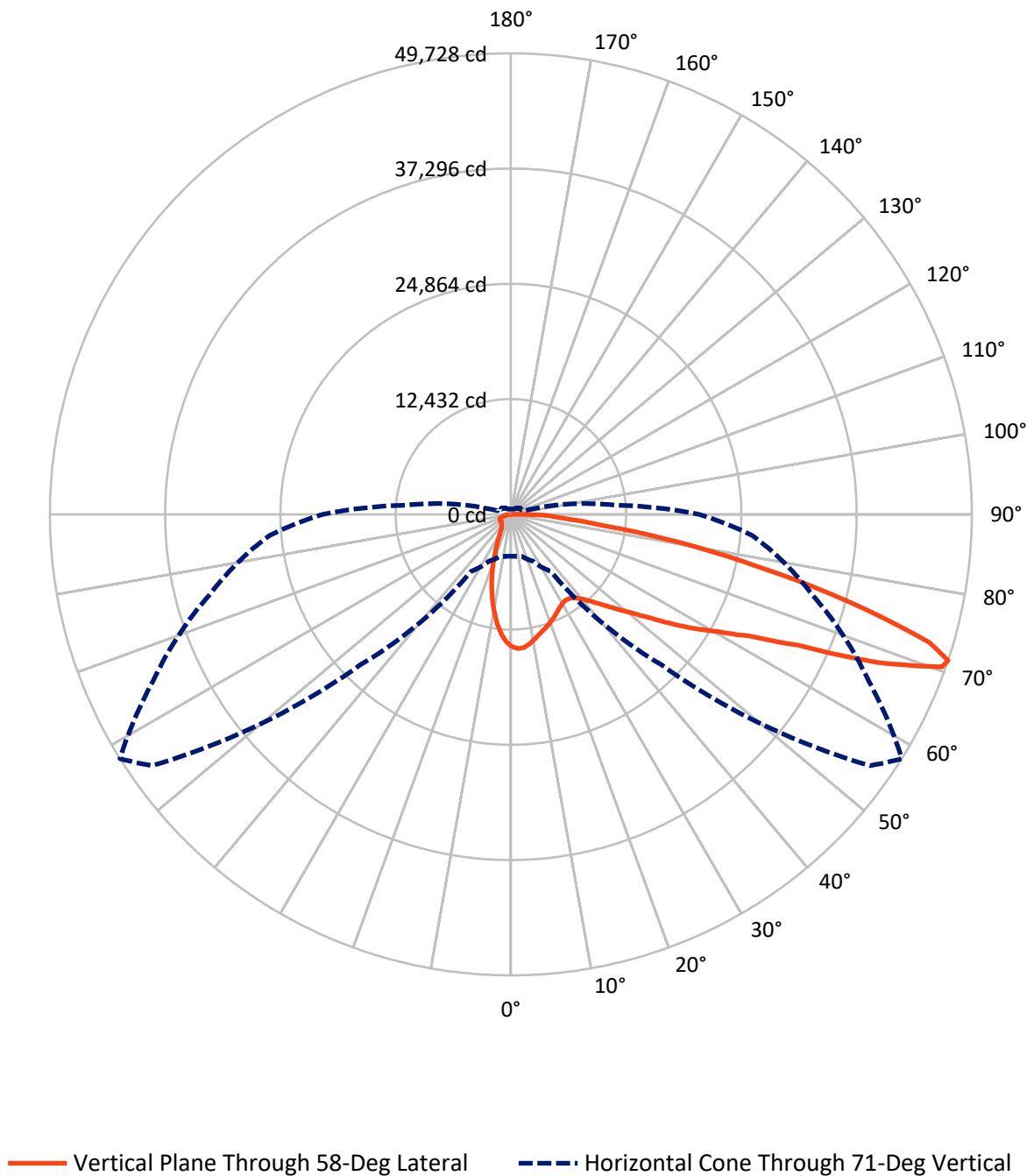
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 22.8 fc
 Type III - Medium - N/A

REPORT NUMBER: P319814
CATALOG NUMBER: GLEON-SA0C-827-U-SL3

Luminous Intensity Polar Plot



REPORT NUMBER: P319814

CATALOG NUMBER: GLEON-SA0C-827-U-SL3

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	7695.0	0.0	7695.0
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	43774.0	0.0	43774.0
	% Fixture	85.0	0.0	85.0
Total	Lumens	51469.0	0.0	51469.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	1230.2	2.4
10°-20°	2735.6	5.3
20°-30°	3476.7	6.8
30°-40°	4428.6	8.6
40°-50°	6279.9	12.2
50°-60°	9718.4	18.9
60°-70°	13230.4	25.7
70°-80°	8826.2	17.1
80°-90°	1543.1	3.0
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°	51469.0	100.0
0°-180°	51469.0	100.0

Coefficient of Utilization



REPORT NUMBER: P319814

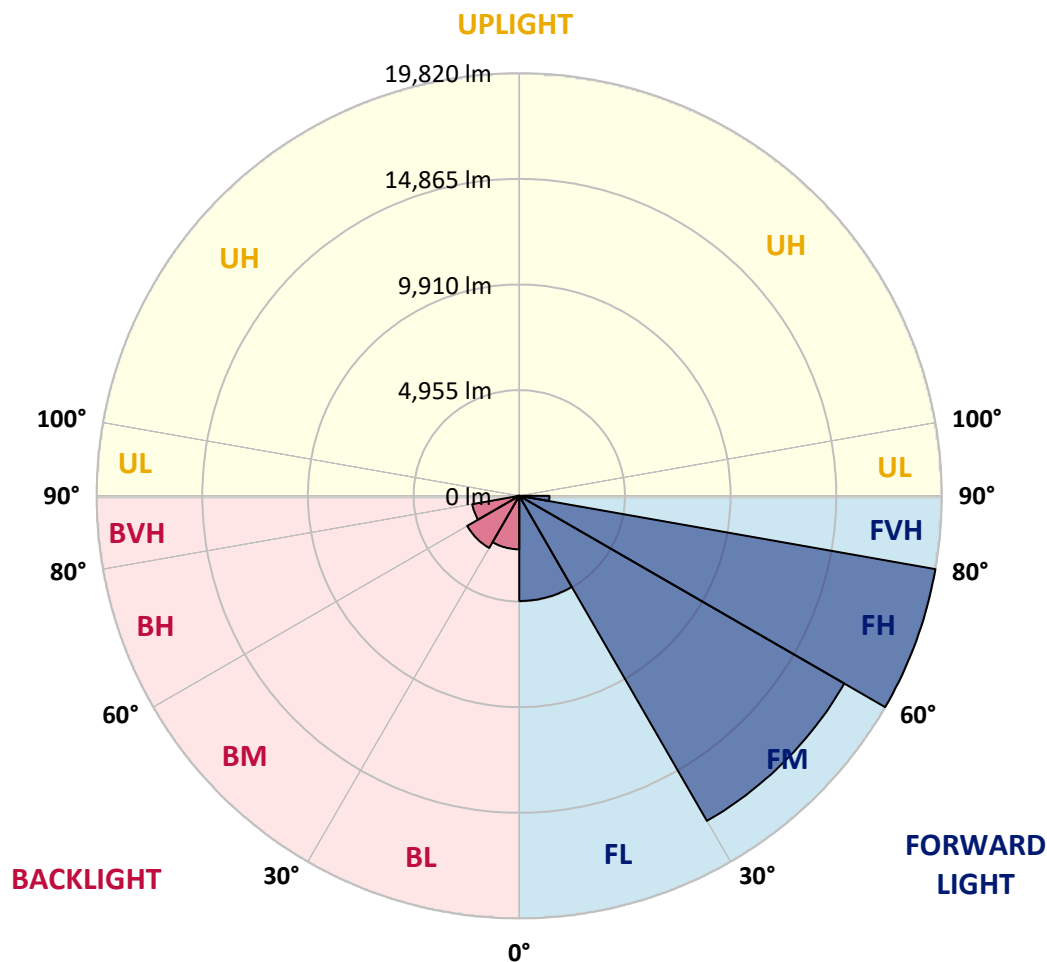
CATALOG NUMBER: GLEON-SA0C-827-U-SL3

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	4934.1	9.6			
FM	(30°-60°)	17604.9	34.2			
FH	(60°-80°)	19820.1	38.5			G5
FVH	(80°-90°)	1414.9	2.7			G5
BL	(0°-30°)	2508.3	4.9	B4/5000		
BM	(30°-60°)	2822.0	5.5	B3/5000		
BH	(60°-80°)	2236.5	4.3	B3/2500		G3/2500
BVH	(80°-90°)	128.2	0.2			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B4-U0-G5

Type III Medium





REPORT NUMBER: P319814

CATALOG NUMBER: GLEON-SA0C-827-U-SL3

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	58°	65°	75°	85°
0°	14260.4	14260.4	14260.4	14260.4	14260.4	14260.4	14260.4	14260.4	14260.4	14260.4	14260.4
2.5°	14638.6	14618.9	14626.1	14611.8	14577.7	14543.6	14493.4	14502.4	14432.5	14328.5	14199.4
5°	14362.5	14355.4	14409.2	14439.6	14464.7	14445.0	14430.7	14448.6	14346.4	14203.0	13978.9
7.5°	13783.5	13704.6	13772.7	13874.9	13971.7	14045.2	14142.0	14154.6	14090.0	13939.4	13645.4
10°	12960.5	12885.2	12985.6	13145.2	13338.8	13514.5	13709.9	13745.8	13758.4	13622.1	13265.3
12.5°	12107.1	12049.8	12150.2	12374.3	12695.2	12965.9	13277.9	13331.7	13442.8	13351.4	12913.9
15°	11343.4	11321.9	11443.8	11664.3	12033.6	12447.8	12897.8	12996.4	13184.6	13154.2	12639.6
17.5°	10683.6	10678.2	10771.5	11002.7	11411.5	11935.0	12519.5	12686.2	12965.9	13001.8	12413.7
20°	1										



REPORT NUMBER: P319814

CATALOG NUMBER: GLEON-SA0C-827-U-SL3

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	14260.4	14260.4	14260.4	14260.4	14260.4	14260.4	14260.4	14260.4	14260.4	14260.4	14260.4
2.5°	14136.6	14106.2	13978.9	13865.9	13747.6	13593.4	13423.1	13401.6	13297.6	13317.3	13281.5
5°	13857.0	13779.9	13473.3	13195.4	12867.3	12573.3	12254.2	12107.1	11895.6	11881.2	11827.5
7.5°	13457.2	13313.7	12838.6	12311.5	11784.4	11282.4	10785.8	10459.5	10126.0	9984.4	9971.8
10°	13007.1	12763.3	12064.1	11284.2	10524.0	9790.8	9080.8	8555.5	8082.2	7858.1	7849.1
12.5°	12580.5	12220.1	11260.9	10199.5	9159.7	8209.5	7236.0	6545.7	5952.3	5753.3	5669.0
15°	12218.3	11710.9	10479.2	9122.0	7859.9	6540.3	5432.3	4706.2	4157.6	3967.6	3931.7
17.5°	11866.9	11214.3	9677.8	8033.8	6508.1	5057.6	3947.9	3408.2	3116.0	3038.9	3037.1
20°	11517.3	10703.3	8840.6	6920.4	5201.1	3782.9	3035.3	2793.3	2694.7	2685.7	2671.4
22.5°	11121.1	10161.9	7960.3	5803.5	4059.0	2974.3	2579.9	2483.1	2470.6	2502.8	2502.8
25°	10749.9	9624.0	7067.4	470							

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

Invue

Report Number: SP1-2407-157-9

Test Date: 10/03/2024

Luminaire Tested: EMM2-HTN-SA1A-827-U-5WQ

Data applicable to all product families utilizing light square engine

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-157-9
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/03/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Invue
 Catalog Number: **EMM2-HTN-SA1A-827-U-5WQ**
 Description: Epic Modern Light Square 40W 5WQ Optic

Spectral Parameters

CCT (K): 2764
 CIE u' : 0.2591
 CIE v' : 0.5290
 Duv: 0.0020
 CIE x: 0.4581
 CIE y: 0.4156
 CIE z: 0.1263
 Peak Wavelength (nm): 603
 Dominant Wavelength (nm): 583
 Purity: 62.2537
 R_f: 84.7
 R_g: 94.6

CRI (Ra): 80.9
 R1: 78.8
 R2: 89.9
 R3: 96.2
 R4: 79.1
 R5: 79.1
 R6: 88.8
 R7: 81.3
 R8: 54.3
 R9: -1.5
 R10: 77.9
 R11: 78.9
 R12: 71.6
 R13: 81.2
 R14: 98.5
 R15: 69.9



Test Conditions

Stabilization Time: 81M
 Operation Time: 2H 21M
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-157-9

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	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085	10/24/2023	10/24/2024
Room Thermometer	IN0046	10/24/2023	10/24/2024

REPORT NUMBER: SP1-2407-157-9

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 2700K 4-step quadrangle

REPORT NUMBER: SP1-2407-157-9

Photopic Flux vs. Wavelength



Photopic Lumens: 4337.9

λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)
360	0	0.0	490	18018	2.6	620	87426	22.8	750	2680	0.0	880	58	0.0
365	0	0.0	495	22295	3.9	625	83013	18.2	755	2287	0.0	885	46	0.0
370	0	0.0	500	26478	5.8	630	78077	14.1	760	1944	0.0	890	45	0.0
375	0	0.0	505	30524	8.5	635	72080	10.7	765	1653	0.0	895	41	0.0
380	0	0.0	510	33611	11.5	640	66249	7.9	770	1413	0.0	900	38	0.0
385	0	0.0	515	36490	15.2	645	59973	5.7	775	1198	0.0	905	33	0.0
390	0	0.0	520	38610	18.7	650	53972	3.9	780	1025	0.0	910	30	0.0
395	0	0.0	525	40511	21.9	655	48369	2.7	785	874	0.0	915	23	0.0
400	48	0.0	530	42223	24.9	660	42641	1.8	790	747	0.0	920	24	0.0
405														

REPORT NUMBER: SP1-2407-157-9

Scotopic Flux vs. Wavelength



Scotopic Lumens: 5286.7

S/P: 1.22

λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)
360	0	0.0	490	18018	75.9	620	87426	0.4	750	2680	0.0	880	58	0.0
365	0	0.0	495	22295	93.2	625	83013	0.2	755	2287	0.0	885	46	0.0
370	0	0.0	500	26478	107.8	630	78077	0.1	760	1944	0.0	890	45	0.0
375	0	0.0	505	30524	118.7	635	72080	0.1	765	1653	0.0	895	41	0.0
380	0	0.0	510	33611	122.2	640	66249	0.1	770	1413	0.0	900	38	0.0
385	0	0.0	515	36490	120.8	645	59973	0.0	775	1198	0.0	905	33	0.0
390	0	0.0	520	38610	113.9	650	53972	0.0	780	1025	0.0	910	30	0.0
395	0	0.0	525	40511	104									

REPORT NUMBER: SP1-2407-157-9

Melanopic Flux vs. Wavelength



Melanopic Lumens: 9797

M/P: 2.26

λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)
360	0	0.0	490	18018	27.7	620	87426	1.1	750	2680	0.0	880	58	0.0
365	0	0.0	495	22295	36.0	625	83013	0.7	755	2287	0.0	885	46	0.0
370	0	0.0	500	26478	44.2	630	78077	0.4	760	1944	0.0	890	45	0.0
375	0	0.0	505	30524	51.8	635	72080	0.3	765	1653	0.0	895	41	0.0
380	0	0.0	510	33611	57.0	640	66249	0.2	770	1413	0.0	900	38	0.0
385	0	0.0	515	36490	60.5	645	59973	0.1	775	1198	0.0	905	33	0.0
390	0	0.0	520	38610	61.4	650	53972	0.1	780	1025	0.0	910	30	0.0
395	0	0.0	525	40511	60.6	655	48							

REPORT NUMBER: SP1-2407-157-9

TM-30-18

Summary

$R_f = 84.7$
 $R_g = 94.6$
 $CIE R_a = 80.9$
 $R_g = -1.5$

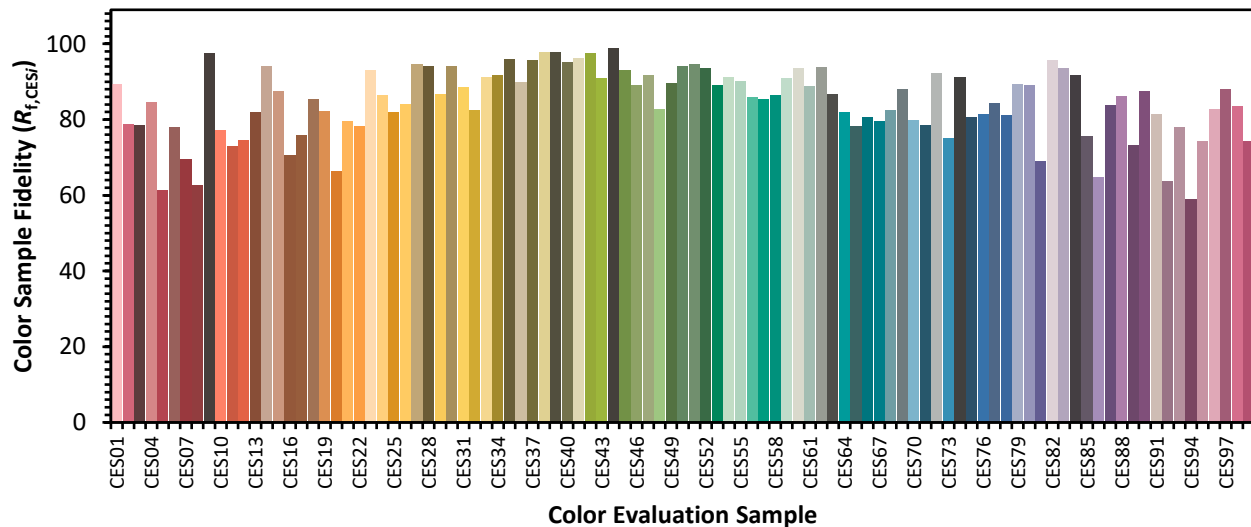


Color Vector Graphics



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

CES01 = 86	CES26 = 84	CES51 = 95	CES76 = 81
CES02 = 63	CES27 = 95	CES52 = 94	CES77 = 84
CES03 = 31	CES28 = 94	CES53 = 89	CES78 = 81
CES04 = 71	CES29 = 87	CES54 = 91	CES79 = 89
CES05 = 50	CES30 = 94	CES55 = 90	CES80 = 89
CES06 = 52	CES31 = 89	CES56 = 86	CES81 = 69
CES07 = 43	CES32 = 82	CES57 = 85	CES82 = 96
CES08 = 41	CES33 = 91	CES58 = 86	CES83 = 93
CES09 = 29	CES34 = 92	CES59 = 91	CES84 = 92
CES10 = 77	CES35 = 96	CES60 = 94	CES85 = 76
CES11 = 60	CES36 = 90	CES61 = 89	CES86 = 65
CES12 = 66	CES37 = 96	CES62 = 94	CES87 = 84
CES13 = 44	CES38 = 98	CES63 = 87	CES88 = 86
CES14 = 74	CES39 = 98	CES64 = 82	CES89 = 73
CES15 = 72	CES40 = 95	CES65 = 78	CES90 = 88
CES16 = 48	CES41 = 96	CES66 = 81	CES91 = 82
CES17 = 50	CES42 = 97	CES67 = 80	CES92 = 64
CES18 = 57	CES43 = 91	CES68 = 83	CES93 = 78
CES19 = 73	CES44 = 99	CES69 = 88	CES94 = 59
CES20 = 67	CES45 = 93	CES70 = 80	CES95 = 74
CES21 = 87	CES46 = 89	CES71 = 79	CES96 = 83
CES22 = 79	CES47 = 92	CES72 = 92	CES97 = 88
CES23 = 92	CES48 = 83	CES73 = 75	CES98 = 83
CES24 = 91	CES49 = 90	CES74 = 91	CES99 = 74
CES25 = 72	CES50 = 94	CES75 = 81	



Color Rendition by Hue-Angle Bin



Measure Comparisons


(END OF REPORT)