

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



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

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P630547

Luminaire Tested: GWS-SA1D-830-U-RW-W-GRSWH

Issue Date: 1/10/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P630547  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-782-51)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 1/10/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: McGRAW-EDISON  
Catalog Number: GWS-SA1D-830-U-RW-W-GRSWH  
Description: GALLEON WALL SLIM LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND RECTANGULAR WIDE OPTICS W/ FACTORY INSTALLED GLARE SHIELD, WH  
Light Source: (16) 3000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

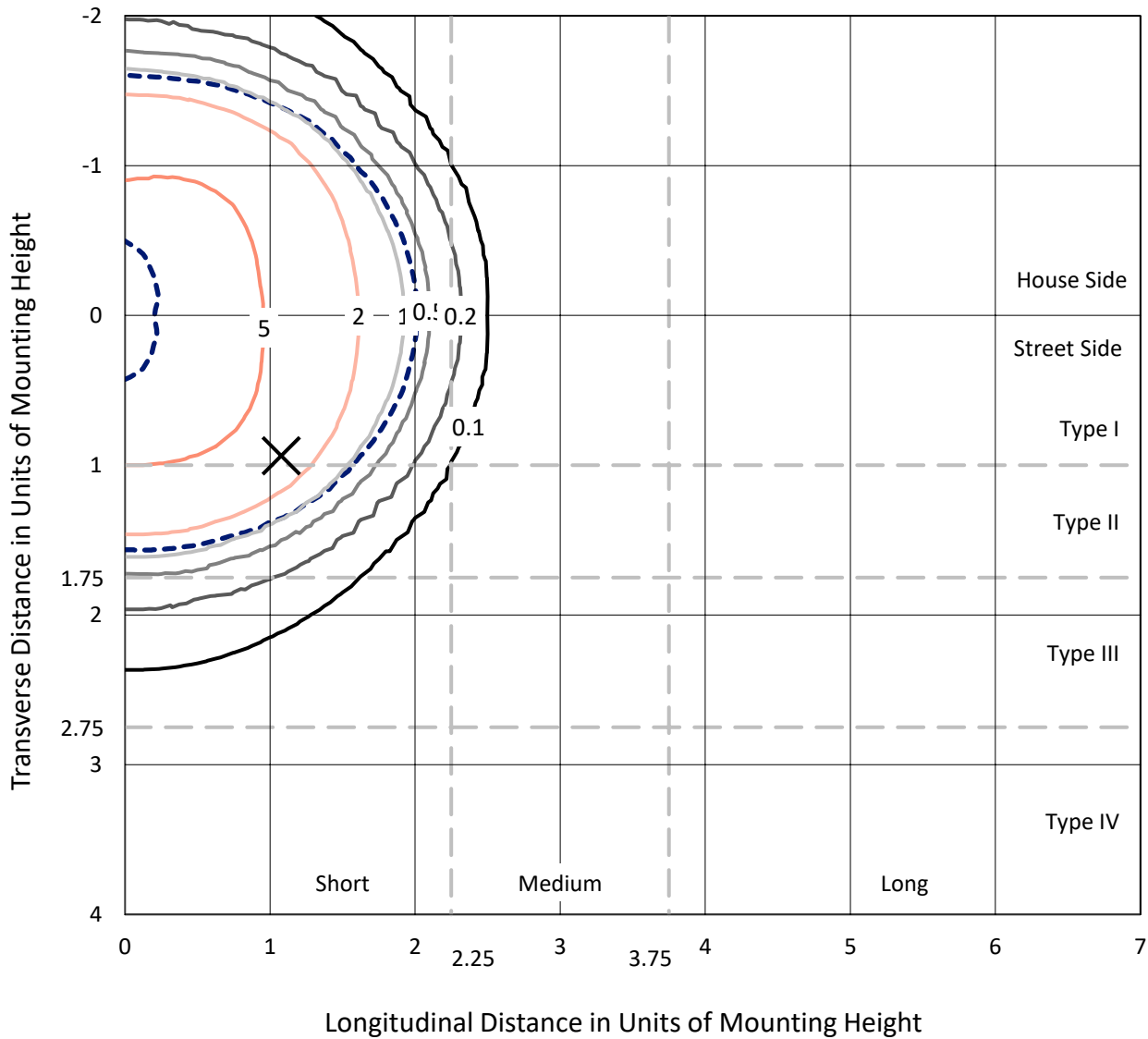
Lumens per Lamp: N/A  
Luminaire Lumens: 4246.4 lumens  
Efficiency: N/A  
Efficacy: 95.9 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type V - Short  
BUG Rating: B2 - U0 - G0  
  
Input Watts (W): 44.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 0  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



REPORT NUMBER: P630547  
 CATALOG NUMBER: GWS-SA1D-830-U-RW-W-GRSWH

### Iso-Footcandle Lines of Horizontal Illumination

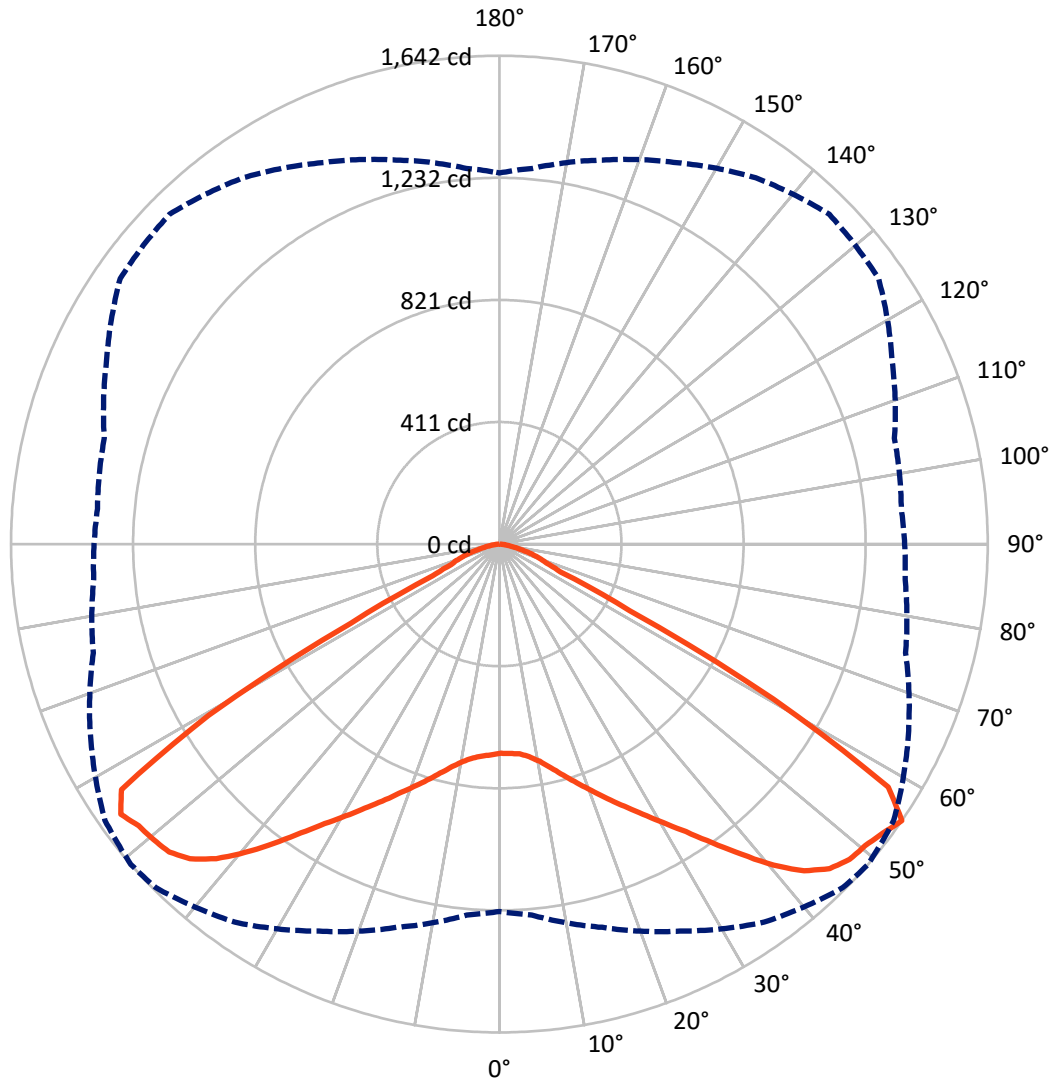
✕ Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 7.8 fc  
 Type V - Short - N/A

REPORT NUMBER: P630547  
CATALOG NUMBER: GWS-SA1D-830-U-RW-W-GRSWH

### Luminous Intensity Polar Plot



— Vertical Plane Through 49-Deg Lateral    - - - Horizontal Cone Through 55-Deg Vertical

REPORT NUMBER: P630547

CATALOG NUMBER: GWS-SA1D-830-U-RW-W-GRSWH

**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2102.4	0.0	2102.4
	% Fixture	49.5	0.0	49.5
<b>Street Side</b>	Lumens	2144.0	0.0	2144.0
	% Fixture	50.5	0.0	50.5
<b>Total</b>	Lumens	4246.4	0.0	4246.4
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	68.6	1.6
10°-20°	226.3	5.3
20°-30°	431.1	10.2
30°-40°	730.8	17.2
40°-50°	1099.8	25.9
50°-60°	1203.9	28.4
60°-70°	380.7	9.0
70°-80°	91.4	2.2
80°-90°	13.7	0.3
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°	4246.4	100.0
0°-180°	4246.4	100.0

**Coefficient of Utilization**



REPORT NUMBER: P630547

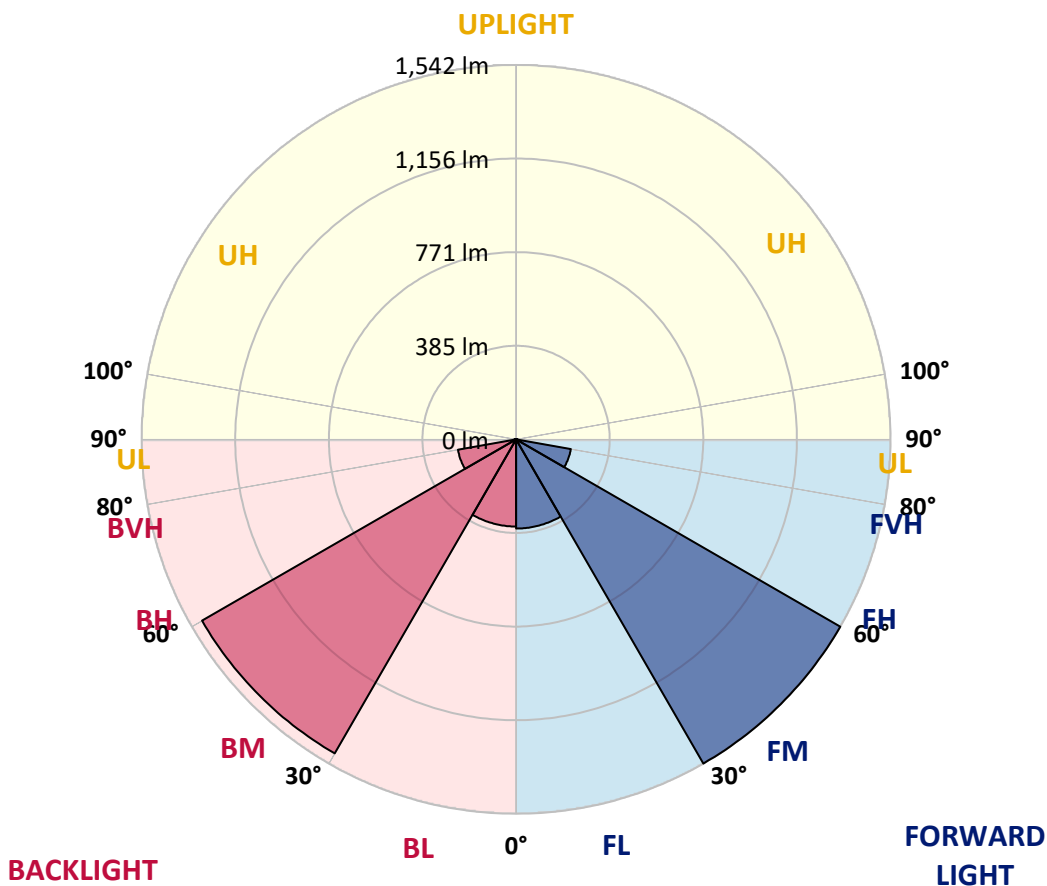
CATALOG NUMBER: GWS-SA1D-830-U-RW-W-GRSWH

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	367.1	8.6			
FM (30°-60°)	1541.6	36.3			
FH (60°-80°)	229.0	5.4			G0/660
FVH (80°-90°)	6.3	0.1			G0/10
BL (0°-30°)	358.9	8.5	B1/500		
BM (30°-60°)	1493.0	35.2	B2/2500		
BH (60°-80°)	243.1	5.7	B1/500		G0/660
BVH (80°-90°)	7.4	0.2			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G0**

Type V Short





REPORT NUMBER: P630547

CATALOG NUMBER: GWS-SA1D-830-U-RW-W-GRSWH

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	49°	55°	65°	75°	85°
0°	703.4	703.4	703.4	703.4	703.4	703.4	703.4	703.4	703.4	703.4	703.4
2.5°	693.1	693.8	695.2	697.6	700.0	703.4	704.8	706.5	706.2	708.3	708.3
5°	689.6	690.7	692.7	696.2	700.3	706.9	708.6	712.8	716.9	722.1	723.8
7.5°	693.8	695.2	697.6	703.1	709.3	717.9	721.4	728.3	736.2	745.6	749.4
10°	701.7	703.4	707.6	716.6	726.6	739.7	742.8	751.4	764.2	777.0	784.6
12.5°	710.7	713.5	721.1	735.2	750.1	767.3	772.2	782.9	796.7	813.3	823.6
15°	721.1	723.5	735.2	755.2	778.4	801.2	806.7	817.1	832.6	848.8	863.3
17.5°	742.8	747.0	760.8	783.9	810.8	837.8	844.0	855.7	868.2	880.9	894.8
20°	772.5	776.0	793.6	822.2	854.0	878.5	884.7	895.1	901.0	907.5	919.3
22.5°	802.2	807.0	827.1	860.9	898.2	924.8	929.6	939.3	935.2	933.1	940.7
25°	839.2	845.7	865.4	902.4	940.3	973.1	976.9	985.2	978.3	967.6	967.3
27.5°	885.1	891.0	911.3	949.3	987.0	1021.1	1028.4	1039.5	1024.3	1011.1	1001.8
30°	939.6	943.4	965.9	1006.3	1045.0	1077.4	1086.8	1097.8	1086.4	1064.7	1055.3
32.5°	1003.2	1008.4	1034.3	1076.7	1111.3	1143.7	1153.1	1166.9	1154.4	1129.9	1118.2
35°	1079.5	1084.7	1112.0	1158.2	1193.5	1227.0	1233.5	1244.9	1229.4	1201.1	1191.7
37.5°	1162.4	1168.9	1203.5	1247.3	1284.3	1323.3	1323.7	1327.1	1305.0	1269.8	1259.4
40°	1255.6	1264.3	1298.8	1344.4	1388.9	1420.7	1420.4	1410.7	1373.4	1318.8	1302.9
42.5°	1347.8	1354.7	1389.6	1436.6	1481.1	1511.2	1502.2	1478.7	1424.8	1350.6	1329.5
45°	1414.5	1419.7	1456.3	1509.1	1554.3	1573.0	1556.8	1528.4	1455.6	1370.6	1339.5
47.5°	1445.9	1452.8	1489.8	1542.3	1593.4	1604.1	1584.7	1558.1	1473.5	1389.3	1347.5
50°	1429.0	1438.0	1479.7	1528.4	1586.1	1608.2	1594.4	1567.8	1492.5	1407.6	1361.6
52.5°	1385.1	1393.8	1446.6	1505.6	1570.9	1614.8	1614.4	1592.7	1514.3	1412.8	1362.3
55°	1235.3	1252.2	1334.4	1436.2	1552.3	1634.1	1642.4	1619.3	1517.7	1414.1	1369.6
57.5°	803.9	833.6	911.7	1044.3	1277.0	1486.3	1542.3	1547.8	1492.9	1408.3	1371.0
60°	335.7	359.5	421.3	509.4	701.7	950.7	1059.1	1167.9	1299.1	1346.8	1358.2
62.5°	208.6	210.7	216.9	236.9	301.1	422.7	492.4	594.3	789.4	955.5	1032.2
65°	188.2	189.2	190.6	189.2	192.4	207.2	225.8	261.4	340.8	423.4	521.5
67.5°	165.8	167.1	168.2	167.1	168.2	168.9	170.9	174.0	188.6	200.3	209.3
70°	134.0	136.1	137.8	137.1	141.2	141.2	143.3	145.7	153.0	161.6	167.8
72.5°	102.2	100.5	102.6	103.3	107.1	109.1	112.2	115.0	123.3	128.5	136.4
75°	66.3	64.6	67.7	69.4	74.6	77.4	80.1	82.9	88.8	92.2	99.8
77.5°	35.9	35.6	38.7	41.1	46.6	50.1	52.1	54.2	59.1	60.1	64.9
80°	20.7	20.7	22.8	24.5	28.0	31.8	33.8	35.6	39.0	40.1	42.1
82.5°	11.4	11.4	12.4	13.5	16.2	18.3	20.0	21.4	24.5	25.6	26.6
85°	5.5	5.2	5.9	6.6	7.6	8.6	9.7	10.4	12.8	13.5	14.8
87.5°	0.7	0.7	0.7	1.0	1.4	2.1	2.4	2.4	3.8	4.5	5.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P630547

CATALOG NUMBER: GWS-SA1D-830-U-RW-W-GRSWH

**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	703.4	703.4	703.4	703.4	703.4	703.4	703.4	703.4	703.4	703.4	703.4
2.5°	710.3	705.9	708.6	709.7	709.7	708.6	704.1	702.8	700.7	697.6	697.6
5°	726.2	722.8	723.5	721.7	717.6	712.4	704.1	700.0	696.5	692.7	692.4
7.5°	753.5	749.0	748.3	741.8	730.7	719.7	707.2	699.6	694.5	689.6	689.3
10°	789.1	784.9	779.8	766.6	750.4	734.2	717.3	706.9	699.3	692.4	692.0
12.5°	828.8	824.0	814.3	795.0	774.6	758.7	739.4	723.5	712.1	702.8	701.0
15°	872.0	865.1	848.5	825.7	805.7	788.7	768.0	745.2	728.0	713.1	711.4
17.5°	905.1	896.1	878.2	856.8	840.2	823.3	796.3	767.7	742.8	724.2	721.4
20°	927.9	920.7	900.3	884.4	874.7	859.9	828.5	796.0	768.0	744.5	743.2
22.5°	949.0	940.3	920.3	911.0	911.0	901.0	870.9	832.6	799.8	772.5	769.1
25°	972.8	963.5	948.3	947.2	952.1	947.6	911.3	870.2	831.9	801.2	795.6
27.5°	1006.0	995.6	986.6	992.8	999.7	994.9	954.5	906.8	866.4	835.4	830.5
30°	1058.8	1046.0	1037.7	1045.3	1058.8	1044.6	1000.8	950.4	909.6	875.4	873.0
32.5°	1120.3	1105.8	1097.1	1109.2	1121.3	1099.2	1055.7	1007.3	964.5	928.6	924.5
35°	1194.2	1175.9	1163.1	1179.3	1191.7	1170.0	1126.8	1080.9	1033.2	995.9	990.4
37.5°	1259.8	1237.7	1229.0	1251.8	1268.4	1254.2	1207.3	1164.1	1112.0	1071.2	1068.8
40°	1307.4	1285.7	1279.5	1317.1	1346.1	1342.7	1300.5	1251.1	1202.1	1155.1	1150.6
42.5°	1328.1	1313.0	1314.3	1365.1	1410.0	1432.1	1394.5	1341.6	1294.3	1245.6	1242.5
45°	1332.6	1323.3	1334.4	1397.9	1457.0	1502.2	1470.1	1425.9	1372.4	1325.4	1324.0
47.5°	1337.5	1332.3	1349.2	1416.6	1486.7	1539.1	1521.2	1475.6	1421.4	1375.5	1372.0
50°	1348.9	1346.8	1365.8	1429.7	1500.8	1549.2	1528.8	1483.5	1427.9	1382.7	1374.4
52.5°	1352.3	1348.9	1376.1	1450.1	1524.3	1548.8	1505.0	1445.9	1390.0	1339.5	1330.9
55°	1363.0	1356.8	1375.5	1457.6	1556.8	1568.8	1503.6	1415.2	1337.1	1268.4	1248.0
57.5°	1365.8	1358.9	1371.0	1445.2	1521.5	1510.8	1321.6	1142.0	994.9	918.6	927.2
60°	1350.9	1353.0	1332.3	1324.0	1220.4	1077.4	809.1	646.8	508.0	449.3	462.1
62.5°	1028.4	1037.0	966.2	840.2	646.1	512.1	338.8	263.1	222.7	212.4	214.1
65°	519.0	530.8	457.2	378.1	281.1	227.2	196.5	190.3	188.2	185.8	185.8
67.5°	205.5	208.9	206.2	193.0	179.6	174.7	173.4	172.7	170.2	168.9	169.2
70°	165.1	167.8	163.7	155.4	149.9	149.5	148.8	147.5	145.7	145.7	146.8
72.5°	134.7	137.4	131.6	126.4	122.2	119.1	117.4	116.4	114.0	114.0	115.0
75°	99.1	100.8	96.0	95.3	90.8	87.7	85.0	83.6	80.5	79.1	80.1
77.5°	66.0	65.6	63.2	63.2	61.5	57.7	54.6	51.5	47.3	44.5	45.2
80°	42.8	42.8	41.8	41.8	40.1	37.0	33.2	30.0	27.6	25.6	25.6
82.5°	27.3	26.9	26.6	26.2	25.6	22.4	19.7	17.6	15.9	14.5	14.8
85°	15.2	15.2	14.5	14.5	13.1	11.4	10.0	8.6	7.6	7.3	7.3
87.5°	5.2	5.2	4.8	4.8	4.1	3.1	2.4	2.1	1.7	1.4	1.7
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: SP1-2408-195-9

Test Date: 08/07/2024

Luminaire Tested: GALN-SB1A-830-U-5WQ

Data in this report applies to families of products including GALN-SB1A-830-U-5WQ.

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2408-195-9  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 08/07/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: MCGRAW EDISON  
 Catalog Number: **GALN-SB1A-830-U-5WQ**  
 Description: GALLEON AREA AND ROADWAY LUMINAIRE. (1) 80 CRI, 3000K, 350MA HIGH DENSITY LIGHTSQUARE WITH 26 LEDS AND TYPE V WIDE OPTICS

**Spectral Parameters**

CCT (K): 3050  
 CIE u': 0.2476  
 CIE v': 0.5251  
 Duv: 0.0034  
 CIE x: 0.4383  
 CIE y: 0.4131  
 CIE z: 0.1487  
 Peak Wavelength (nm): 603  
 Dominant Wavelength (nm): 581  
 Purity: 55.55201  
 Rf: 81.5  
 Rg: 99.2

CRI (Ra):	81.0		
R1:	79.6	R9:	7.1
R2:	85.6	R10:	67.0
R3:	92.0	R11:	82.7
R4:	82.6	R12:	63.2
R5:	78.9	R13:	80.3
R6:	81.7	R14:	95.0
R7:	85.2	R15:	71.7
R8:	62.0		



**Test Conditions**

Stabilization Time: 20M  
 Operation Time: 1H 20M  
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2408-195-9

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: SP1-2408-195-9

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2408-195-9

**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	168	NR	620	940	NR	750	35	NR	880	1	NR
365	0	NR	495	233	NR	625	897	NR	755	30	NR	885	1	NR
370	0	NR	500	300	NR	630	847	NR	760	26	NR	890	1	NR
375	0	NR	505	372	NR	635	790	NR	765	22	NR	895	1	NR
380	0	NR	510	430	NR	640	730	NR	770	19	NR	900	1	NR
385	0	NR	515	483	NR	645	668	NR	775	16	NR	905	1	NR
390	0	NR	520	524	NR	650	605	NR	780	14	NR	910	0	NR
395	2	NR	525	555	NR	655	545	NR	785	12	NR	915	0	NR
400	4	NR	530	581	NR	660	485	NR	790	10	NR	920	0	NR
405	7	NR	535	604	NR	665	430	NR	795	9	NR	925	0	NR
410	17	NR	540	623	NR	670	378	NR	800	8	NR	930	0	NR
415	34	NR	545	645	NR	675	331	NR	805	7	NR	935	0	NR
420	68	NR	550	667	NR	680	290	NR	810	6	NR	940	0	NR
425	128	NR	555	693	NR	685	251	NR	815	5	NR	945	0	NR
430	214	NR	560	719	NR	690	218	NR	820	4	NR	950	0	NR
435	339	NR	565	754	NR	695	188	NR	825	4	NR	955	0	NR
440	507	NR	570	791	NR	700	162	NR	830	3	NR	960	0	NR
445	573	NR	575	830	NR	705	139	NR	835	3	NR	965	0	NR
450	356	NR	580	873	NR	710	119	NR	840	3	NR	970	0	NR
455	217	NR	585	913	NR	715	102	NR	845	2	NR	975	0	NR
460	168	NR	590	948	NR	720	88	NR	850	2	NR	980	0	NR
465	113	NR	595	974	NR	725	76	NR	855	2	NR	985	0	NR
470	85	NR	600	994	NR	730	65	NR	860	1	NR	990	0	NR
475	85	NR	605	998	NR	735	55	NR	865	1	NR	995	0	NR
480	94	NR	610	994	NR	740	47	NR	870	1	NR	1000	0	NR
485	120	NR	615	973	NR	745	41	NR	875	1	NR			

REPORT NUMBER: SP1-2408-195-9

**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 1.27**

$\lambda$ (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	168	NR	620	940	NR	750	35	NR	880	1	NR
365	0	NR	495	233	NR	625	897	NR	755	30	NR	885	1	NR
370	0	NR	500	300	NR	630	847	NR	760	26	NR	890	1	NR
375	0	NR	505	372	NR	635	790	NR	765	22	NR	895	1	NR
380	0	NR	510	430	NR	640	730	NR	770	19	NR	900	1	NR
385	0	NR	515	483	NR	645	668	NR	775	16	NR	905	1	NR
390	0	NR	520	524	NR	650	605	NR	780	14	NR	910	0	NR
395	2	NR	525	555	NR	655	545	NR	785	12	NR	915	0	NR
400	4	NR	530	581	NR	660	485	NR	790	10	NR	920	0	NR
405	7	NR	535	604	NR	665	430	NR	795	9	NR	925	0	NR
410	17	NR	540	623	NR	670	378	NR	800	8	NR	930	0	NR
415	34	NR	545	645	NR	675	331	NR	805	7	NR	935	0	NR
420	68	NR	550	667	NR	680	290	NR	810	6	NR	940	0	NR
425	128	NR	555	693	NR	685	251	NR	815	5	NR	945	0	NR
430	214	NR	560	719	NR	690	218	NR	820	4	NR	950	0	NR
435	339	NR	565	754	NR	695	188	NR	825	4	NR	955	0	NR
440	507	NR	570	791	NR	700	162	NR	830	3	NR	960	0	NR
445	573	NR	575	830	NR	705	139	NR	835	3	NR	965	0	NR
450	356	NR	580	873	NR	710	119	NR	840	3	NR	970	0	NR
455	217	NR	585	913	NR	715	102	NR	845	2	NR	975	0	NR
460	168	NR	590	948	NR	720	88	NR	850	2	NR	980	0	NR
465	113	NR	595	974	NR	725	76	NR	855	2	NR	985	0	NR
470	85	NR	600	994	NR	730	65	NR	860	1	NR	990	0	NR
475	85	NR	605	998	NR	735	55	NR	865	1	NR	995	0	NR
480	94	NR	610	994	NR	740	47	NR	870	1	NR	1000	0	NR
485	120	NR	615	973	NR	745	41	NR	875	1	NR			

REPORT NUMBER: SP1-2408-195-9

**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: NR**

**M/P: 2.32**

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	168	NR	620	940	NR	750	35	NR	880	1	NR
365	0	NR	495	233	NR	625	897	NR	755	30	NR	885	1	NR
370	0	NR	500	300	NR	630	847	NR	760	26	NR	890	1	NR
375	0	NR	505	372	NR	635	790	NR	765	22	NR	895	1	NR
380	0	NR	510	430	NR	640	730	NR	770	19	NR	900	1	NR
385	0	NR	515	483	NR	645	668	NR	775	16	NR	905	1	NR
390	0	NR	520	524	NR	650	605	NR	780	14	NR	910	0	NR
395	2	NR	525	555	NR	655	545	NR	785	12	NR	915	0	NR
400	4	NR	530	581	NR	660	485	NR	790	10	NR	920	0	NR
405	7	NR	535	604	NR	665	430	NR	795	9	NR	925	0	NR
410	17	NR	540	623	NR	670	378	NR	800	8	NR	930	0	NR
415	34	NR	545	645	NR	675	331	NR	805	7	NR	935	0	NR
420	68	NR	550	667	NR	680	290	NR	810	6	NR	940	0	NR
425	128	NR	555	693	NR	685	251	NR	815	5	NR	945	0	NR
430	214	NR	560	719	NR	690	218	NR	820	4	NR	950	0	NR
435	339	NR	565	754	NR	695	188	NR	825	4	NR	955	0	NR
440	507	NR	570	791	NR	700	162	NR	830	3	NR	960	0	NR
445	573	NR	575	830	NR	705	139	NR	835	3	NR	965	0	NR
450	356	NR	580	873	NR	710	119	NR	840	3	NR	970	0	NR
455	217	NR	585	913	NR	715	102	NR	845	2	NR	975	0	NR
460	168	NR	590	948	NR	720	88	NR	850	2	NR	980	0	NR
465	113	NR	595	974	NR	725	76	NR	855	2	NR	985	0	NR
470	85	NR	600	994	NR	730	65	NR	860	1	NR	990	0	NR
475	85	NR	605	998	NR	735	55	NR	865	1	NR	995	0	NR
480	94	NR	610	994	NR	740	47	NR	870	1	NR	1000	0	NR
485	120	NR	615	973	NR	745	41	NR	875	1	NR			

**Summary**

$R_f = 81.5$   
 $R_g = 99.2$   
 $CIE R_a = 81.0$   
 $R_9 = 7.1$



**Color Vector Graphics**





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

CES01 = 86	CES26 = 74	CES51 = 89	CES76 = 70
CES02 = 63	CES27 = 88	CES52 = 92	CES77 = 86
CES03 = 31	CES28 = 89	CES53 = 81	CES78 = 72
CES04 = 70	CES29 = 67	CES54 = 87	CES79 = 90
CES05 = 50	CES30 = 68	CES55 = 85	CES80 = 88
CES06 = 51	CES31 = 71	CES56 = 78	CES81 = 78
CES07 = 42	CES32 = 70	CES57 = 76	CES82 = 95
CES08 = 41	CES33 = 71	CES58 = 78	CES83 = 90
CES09 = 29	CES34 = 82	CES59 = 92	CES84 = 94
CES10 = 76	CES35 = 90	CES60 = 95	CES85 = 86
CES11 = 59	CES36 = 93	CES61 = 93	CES86 = 72
CES12 = 65	CES37 = 87	CES62 = 83	CES87 = 85
CES13 = 43	CES38 = 75	CES63 = 77	CES88 = 83
CES14 = 74	CES39 = 94	CES64 = 83	CES89 = 75
CES15 = 71	CES40 = 89	CES65 = 77	CES90 = 81
CES16 = 47	CES41 = 85	CES66 = 80	CES91 = 96
CES17 = 50	CES42 = 86	CES67 = 79	CES92 = 73
CES18 = 56	CES43 = 81	CES68 = 84	CES93 = 84
CES19 = 72	CES44 = 99	CES69 = 91	CES94 = 64
CES20 = 66	CES45 = 87	CES70 = 78	CES95 = 80
CES21 = 87	CES46 = 82	CES71 = 76	CES96 = 84
CES22 = 79	CES47 = 77	CES72 = 92	CES97 = 87
CES23 = 92	CES48 = 71	CES73 = 71	CES98 = 81
CES24 = 91	CES49 = 81	CES74 = 93	CES99 = 74
CES25 = 72	CES50 = 89	CES75 = 74	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)