

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: HALO COMMERCIAL

Report Number: P837665

Luminaire Tested: HCSQ455D010-HM44560935-41SQLWW

Issue Date: 5/17/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P837665  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-5)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/17/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ455D010-HM44560935-41SQLWW  
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, LENSED WALLWASH TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3500K CCT  
Ballast/Driver: -

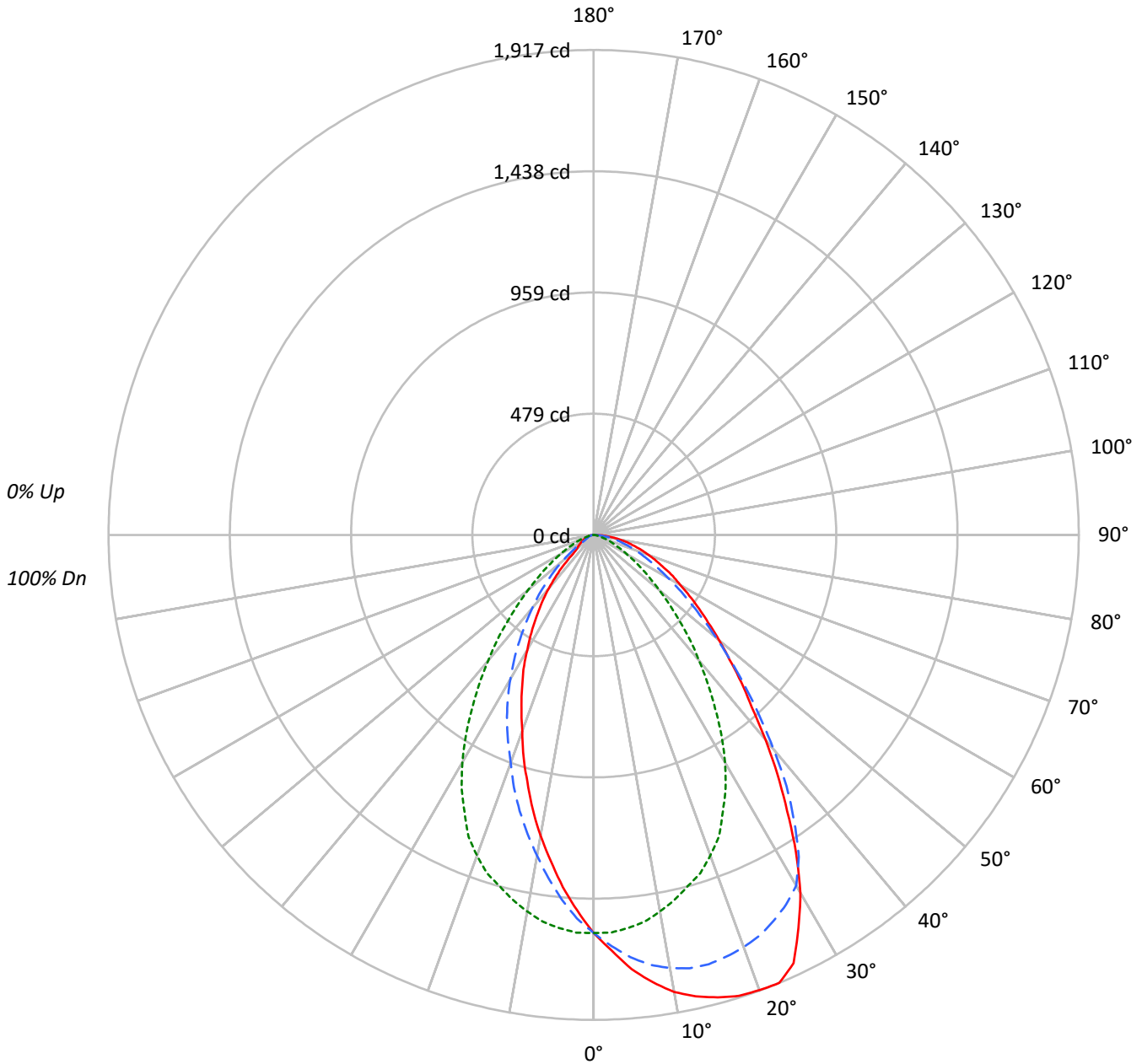
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2545.1 lumens  
Efficiency: N/A  
Efficacy: 47.1 lumens/watt  
Spacing Criteria (0/90/45): 1.07 / 1.04 / 1.12  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 54  
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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### Luminous Intensity Polar Plot





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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	50	30	10	0		
RCR	0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100		
	1	111	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89	89	89	89	89	89		
	2	103	97	91	87	101	95	90	86	92	87	84	88	85	82	86	83	80	78	78	78	78	78	78		
	3	96	87	81	76	94	86	80	75	83	78	74	81	76	72	78	74	71	69	69	69	69	69	69		
	4	89	79	72	67	87	78	71	66	76	70	65	74	69	64	72	67	64	62	62	62	62	62	62		
	5	83	72	65	59	81	71	64	59	69	63	58	68	62	58	66	61	57	55	55	55	55	55	55		
	6	78	66	59	53	76	66	58	53	64	57	53	62	57	52	61	56	52	50	50	50	50	50	50		
	7	73	61	54	48	71	60	53	48	59	53	48	58	52	48	56	51	47	45	45	45	45	45	45		
	8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42	42	42	42	42	42		
	9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38	38	38	38	38	38		
	10	61	49	42	37	60	48	42	37	48	41	37	47	41	37	46	41	37	35	35	35	35	35	35		

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

	0°	45°	90°	135°	180°
0°	152424	152424	152424	152424	152424
5°	167554	162993	151713	140636	135862
10°	180469	171026	148637	126681	118772
15°	189814	176164	144151	113261	101396
20°	197412	178773	138969	98711	85134
25°	199682	179875	129059	86602	71574
30°	182749	179002	116090	73650	58672
35°	157574	163380	98974	60444	46454
40°	133506	139715	81846	47701	34714
45°	113137	115890	65432	35470	22318
50°	97540	95189	50790	23888	13459
55°	85952	78402	38829	13191	12059
60°	76532	65720	28966	7343	10811
65°	70098	56275	21479	6648	9719
70°	65118	48690	15805	6316	9489
75°	60973	42595	10855	5839	8347
80°	58522	37378	7476	6248	7476
85°	57021	32234	5002	5002	5002

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 45°  
 Luminance: 117726 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	147.5	5.8
10°-20°	406.2	16.0
20°-30°	567.9	22.3
30°-40°	555.1	21.8
40°-50°	402.8	15.8
50°-60°	242.8	9.5
60°-70°	136.5	5.4
70°-80°	67.6	2.7
80°-90°	18.5	0.7
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°-30°	1121.7	44.1
0°-40°	1676.8	65.9
0°-60°	2322.5	91.3
0°-90°	2545.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2545.1	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	1573	1573	1573	1573	1573	
5°	1723	1676	1560	1446	1397	168
15°	1893	1756	1437	1129	1011	536
25°	1868	1683	1207	810	670	842
35°	1332	1382	837	511	393	834
45°	826	846	478	259	163	640
55°	509	464	230	78	71	458
65°	306	246	94	29	42	306
75°	163	114	29	16	22	175
85°	51	29	4	4	4	57
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	1573.4	1573.4	1573.4	1573.4	1573.4	1573.4	1573.4	1573.4	1573.4
2.5°	1644.9	1640.4	1627.0	1600.2	1573.4	1542.2	1517.7	1499.8	1486.4
5°	1723.0	1714.1	1676.1	1620.3	1560.1	1499.8	1446.2	1415.0	1397.1
7.5°	1783.2	1767.6	1714.1	1635.9	1542.2	1450.7	1368.1	1319.0	1298.9
10°	1834.6	1807.8	1738.6	1633.7	1511.0	1390.4	1287.8	1229.7	1207.4
12.5°	1868.1	1839.0	1754.2	1631.5	1477.5	1330.2	1209.7	1133.8	1111.5
15°	1892.6	1856.9	1756.5	1613.6	1437.3	1267.7	1129.3	1040.0	1011.0
17.5°	1910.5	1861.4	1747.5	1593.5	1401.6	1203.0	1046.7	950.8	921.7
20°	1914.9	1861.4	1734.1	1564.5	1348.0	1138.2	957.5	861.5	825.8
22.5°	1917.2	1854.7	1714.1	1528.8	1292.2	1064.6	883.8	783.4	745.4
25°	1868.1	1832.3	1682.8	1468.6	1207.4	984.2	810.2	700.8	669.6
27.5°	1752.0	1749.8	1647.1	1388.2	1129.3	897.2	734.3	629.4	600.4
30°	1633.7	1635.9	1600.2	1298.9	1037.8	814.6	658.4	555.7	524.5
32.5°	1488.6	1511.0	1508.7	1198.5	939.6	736.5	584.7	488.8	457.5
35°	1332.4	1372.6	1381.5	1084.7	836.9	647.2	511.1	424.0	392.8
37.5°	1191.8	1232.0	1252.1	984.2	741.0	569.1	441.9	366.0	334.8
40°	1055.7	1089.1	1104.8	868.2	647.2	488.8	377.2	305.8	274.5
42.5°	924.0	973.1	968.6	770.0	564.7	424.0	319.2	247.7	216.5
45°	825.8	859.3	845.9	667.3	477.6	357.1	258.9	191.9	162.9
47.5°	727.6	752.1	732.0	580.3	404.0	294.6	209.8	140.6	109.4
50°	647.2	658.4	631.6	493.2	337.0	241.0	158.5	93.7	89.3
52.5°	571.4	578.0	540.1	419.6	279.0	194.2	116.1	73.7	78.1
55°	508.9	506.6	464.2	354.9	229.9	149.5	78.1	67.0	71.4
57.5°	448.6	441.9	399.5	294.6	187.5	116.1	46.9	58.0	62.5
60°	395.0	388.3	339.2	243.3	149.5	87.0	37.9	51.3	55.8
62.5°	352.6	337.0	287.9	200.9	120.5	62.5	33.5	44.6	49.1
65°	305.8	292.4	245.5	162.9	93.7	44.6	29.0	37.9	42.4
67.5°	267.8	252.2	207.6	133.9	75.9	31.2	26.8	33.5	37.9
70°	229.9	216.5	171.9	107.1	55.8	20.1	22.3	29.0	33.5
72.5°	198.6	183.0	142.8	84.8	42.4	15.6	20.1	24.6	26.8
75°	162.9	149.5	113.8	64.7	29.0	13.4	15.6	20.1	22.3
77.5°	136.1	122.8	89.3	49.1	20.1	11.2	13.4	17.9	17.9
80°	104.9	93.7	67.0	33.5	13.4	6.7	11.2	13.4	13.4
82.5°	75.9	67.0	46.9	22.3	6.7	6.7	6.7	8.9	8.9
85°	51.3	44.6	29.0	13.4	4.5	4.5	4.5	4.5	4.5
87.5°	29.0	22.3	13.4	4.5	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

Scaled Data Report



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Scaled Data Report







— 0°-180°    - - 45°-225°    - - - - 90°-270°

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