

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: P837632

Luminaire Tested: HCSQ450D010-HM44560940-41SQMW

Issue Date: 5/17/2024

Test Information

Test Method: LM-79-2019
Report Number: P837632
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-3)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 5/17/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCSQ450D010-HM44560940-41SQMW
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, MATTE WHITE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: -

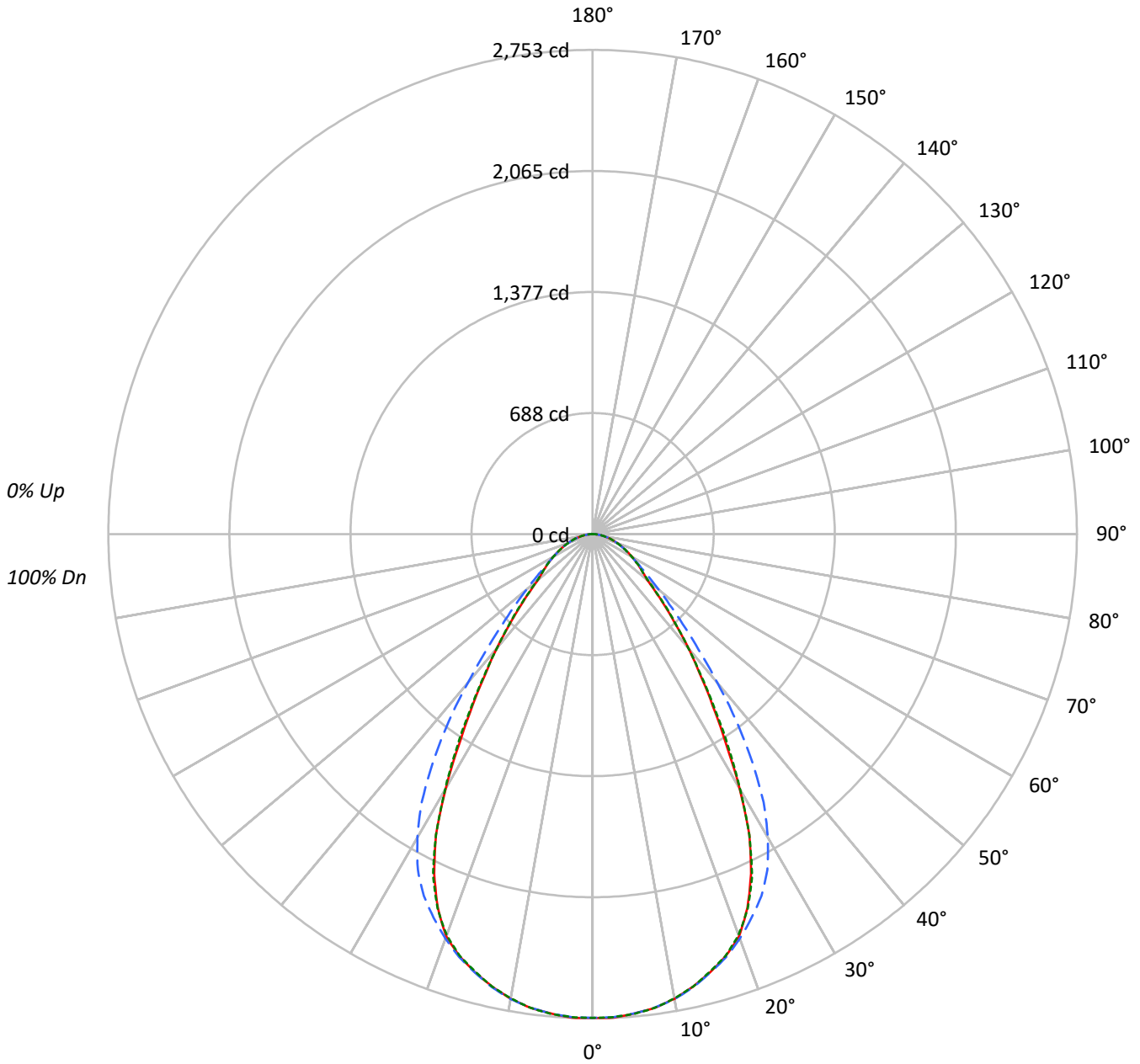
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3992.1 lumens
Efficiency: N/A
Efficacy: 80.3 lumens/watt
Spacing Criteria (0/90/45): 1.03 / 1.03 / 1.07
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 49.7
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: P837632
CATALOG NUMBER: HCSQ450D010-HM44560940-41SQMW

Luminous Intensity Polar Plot





TEST NUMBER: P837632

CATALOG NUMBER: HCSQ450D010-HM44560940-41SQMW

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	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								
1	111	108	105	102	109	106	103	100	101	99	97	98	96	94	94	93	91	89								
2	104	98	92	88	102	96	91	87	92	88	85	89	86	83	86	84	81	79								
3	97	89	82	77	95	87	81	76	84	79	75	82	78	74	79	76	73	71								
4	91	81	74	69	89	80	73	68	77	72	67	75	70	66	73	69	66	64								
5	85	74	67	62	83	73	66	61	71	65	61	70	64	60	68	63	60	58								
6	79	69	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53								
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48								
8	70	59	52	47	69	58	51	47	57	51	46	56	50	46	55	50	46	44								
9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	51	46	43	41								
10	63	51	45	40	62	51	44	40	50	44	40	49	44	40	48	43	40	38								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	266495	266495	266495
5°	266054	266054	266258
10°	263877	264084	263661
15°	258745	258956	258314
20°	250979	252309	250103
25°	227783	242630	229386
30°	186978	222841	187693
35°	140544	187057	142566
40°	107037	139475	106772
45°	79941	98984	81407
50°	60887	73773	62168
55°	54875	57763	54875
60°	50104	49697	49697
65°	45570	45570	45570
70°	42373	41779	41779
75°	39189	38403	39189
80°	35760	34589	35760
85°	30900	30900	30900

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°

Vertical Angle: 45°

Luminance: 98984 cd/sqm



TEST NUMBER: P837632

CATALOG NUMBER: HCSQ450D010-HM44560940-41SQMW

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	259.4	6.5
10°-20°	726.3	18.2
20°-30°	998.9	25.0
30°-40°	850.3	21.3
40°-50°	513.6	12.9
50°-60°	302.7	7.6
60°-70°	198.5	5.0
70°-80°	110.1	2.8
80°-90°	32.2	0.8
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°	1984.6	49.7
0°-40°	2834.9	71.0
0°-60°	3651.3	91.5
0°-90°	3992.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3992.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2751	2751	2751	2751	2751	
5°	2736	2738	2736	2734	2738	260
15°	2580	2586	2582	2580	2576	726
25°	2131	2197	2270	2202	2146	963
35°	1188	1308	1582	1344	1206	752
45°	584	646	722	652	594	459
55°	325	331	342	331	325	292
65°	199	201	199	199	199	199
75°	105	105	103	103	105	111
85°	28	28	28	28	28	32
90°	0	0	0	0	0	



TEST NUMBER: P837632

CATALOG NUMBER: HCSQ450D010-HM44560940-41SQMW

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2750.9	2750.9	2750.9	2750.9	2750.9
2.5°	2753.0	2746.6	2748.7	2746.6	2748.7
5°	2735.9	2738.0	2735.9	2733.8	2738.0
7.5°	2716.7	2714.5	2714.5	2712.4	2716.7
10°	2682.5	2678.2	2684.6	2680.3	2680.3
12.5°	2635.4	2641.9	2639.7	2639.7	2635.4
15°	2579.9	2586.3	2582.0	2579.9	2575.6
17.5°	2515.8	2520.0	2522.2	2513.6	2513.6
20°	2434.5	2443.1	2447.4	2432.4	2426.0
22.5°	2299.9	2338.3	2361.9	2336.2	2304.1
25°	2131.0	2197.3	2269.9	2201.5	2146.0
27.5°	1928.0	2022.0	2152.4	2037.0	1928.0
30°	1671.5	1810.4	1992.1	1825.4	1677.9
32.5°	1406.4	1553.9	1808.3	1579.6	1436.4
35°	1188.4	1308.1	1581.7	1344.4	1205.5
37.5°	1000.3	1102.9	1344.4	1126.4	1011.0
40°	846.4	927.6	1102.9	938.3	844.3
42.5°	698.9	775.9	893.4	786.6	707.5
45°	583.5	645.5	722.5	651.9	594.2
47.5°	485.2	536.5	592.1	536.5	491.6
50°	404.0	444.6	489.5	444.6	412.5
52.5°	361.2	374.0	404.0	376.2	361.2
55°	324.9	331.3	342.0	331.3	324.9
57.5°	290.7	295.0	292.8	292.8	290.7
60°	258.6	260.8	256.5	258.6	256.5
62.5°	228.7	228.7	224.4	228.7	226.6
65°	198.8	200.9	198.8	198.8	198.8
67.5°	173.1	173.1	171.0	173.1	173.1
70°	149.6	149.6	147.5	149.6	147.5
72.5°	126.1	126.1	124.0	124.0	124.0
75°	104.7	104.7	102.6	102.6	104.7
77.5°	83.4	83.4	81.2	83.4	83.4
80°	64.1	64.1	62.0	64.1	64.1
82.5°	44.9	44.9	44.9	47.0	47.0
85°	27.8	27.8	27.8	27.8	27.8
87.5°	12.8	12.8	12.8	12.8	15.0
90°	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



Report Generated By 670245859 / DESKTOP-T8S5UU9

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

Scaled Data Report





— 0°-180° - - 45°-225° - - - 90°-270°

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

Scaled Data Report



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

Scaled Data Report



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

Scaled Data Report



(END OF REPORT)