

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: P837589

Luminaire Tested: HCSQ445D010-HM44560940-41SQH

Issue Date: 5/17/2024

Test Information

Test Method: LM-79-2019
Report Number: P837589
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-165-2)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 5/17/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCSQ445D010-HM44560940-41SQH
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, HAZE TRIM
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: -

Summary

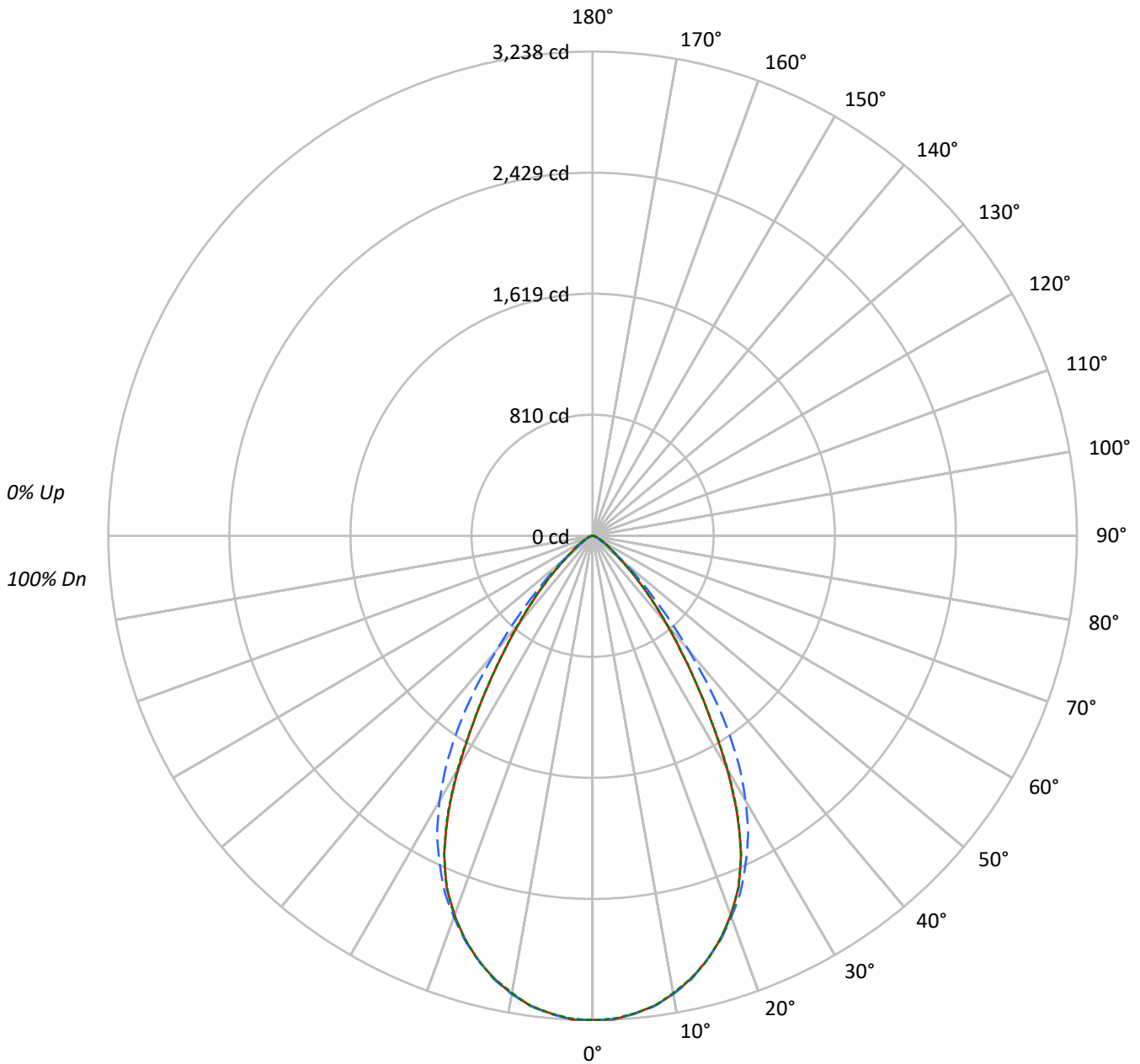
Lumens per Lamp: N/A
Luminaire Lumens: 3640.1 lumens
Efficiency: N/A
Efficacy: 79.3 lumens/watt
Spacing Criteria (0/90/45): 0.98 / 0.98 / 1.01
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 45.9
Input Voltage (V): NR
Input Current (A_{in}): 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									
RC	80									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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100															
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92				92															
2	107	101	97	93	104	100	95	92	96	93	90	93	90	88	90	88	86	85				85															
3	101	93	88	84	98	92	87	83	89	85	82	87	83	80	85	82	79	77				77															
4	95	87	80	76	93	85	80	75	83	78	74	81	77	74	79	76	73	71				71															
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67	65				65															
6	84	75	68	63	83	74	68	63	72	67	63	71	66	62	69	65	62	60				60															
7	80	70	63	59	78	69	63	58	68	62	58	66	61	58	65	61	57	56				56															
8	75	65	59	54	74	65	58	54	63	58	54	62	57	54	61	57	53	52				52															
9	72	61	55	50	70	61	54	50	60	54	50	59	54	50	58	53	50	48				48															
10	68	57	51	47	67	57	51	47	56	51	47	55	50	47	55	50	46	45				45															

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	313702	313702	313702
5°	311788	312177	311788
10°	305950	306147	305360
15°	295082	294881	295282
20°	278165	279608	278783
25°	251000	258696	251000
30°	200468	228892	202034
35°	143110	185212	143347
40°	96630	125969	98147
45°	61377	74529	61651
50°	34965	39788	33759
55°	22970	19254	22632
60°	15888	11238	15500
65°	11003	8252	11003
70°	7931	6231	7931
75°	5240	5240	5240
80°	3347	4463	4463
85°	4446	4446	4446

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 45°
 Vertical Angle: 45°
 Luminance: 74529 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	303.4	8.3
10°-20°	824.9	22.7
20°-30°	1080.0	29.7
30°-40°	848.9	23.3
40°-50°	396.5	10.9
50°-60°	122.9	3.4
60°-70°	43.8	1.2
70°-80°	15.4	0.4
80°-90°	4.3	0.1
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°	2208.3	60.7
0°-40°	3057.2	84.0
0°-60°	3576.5	98.3
0°-90°	3640.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3640.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3238	3238	3238	3238	3238	
5°	3206	3208	3210	3214	3206	303
15°	2942	2942	2940	2942	2944	824
25°	2348	2380	2420	2382	2348	1056
35°	1210	1320	1566	1336	1212	763
45°	448	502	544	492	450	357
55°	136	128	114	126	134	127
65°	48	44	36	42	48	50
75°	14	14	14	14	14	16
85°	4	4	4	4	4	4
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3238.2	3238.2	3238.2	3238.2	3238.2
2.5°	3238.2	3234.2	3236.2	3232.2	3232.2
5°	3206.2	3208.2	3210.2	3214.2	3206.2
7.5°	3170.2	3174.2	3172.2	3172.2	3172.2
10°	3110.2	3112.2	3112.2	3112.2	3104.2
12.5°	3034.2	3038.2	3040.2	3034.2	3034.2
15°	2942.2	2942.2	2940.2	2942.2	2944.2
17.5°	2832.2	2838.2	2838.2	2832.2	2830.2
20°	2698.2	2708.2	2712.2	2704.2	2704.2
22.5°	2548.2	2558.2	2582.2	2562.2	2546.2
25°	2348.2	2380.2	2420.2	2382.2	2348.2
27.5°	2090.2	2160.2	2252.2	2172.2	2096.2
30°	1792.1	1906.1	2046.2	1912.1	1806.1
32.5°	1488.1	1616.1	1822.1	1626.1	1488.1
35°	1210.1	1320.1	1566.1	1336.1	1212.1
37.5°	962.1	1068.1	1284.1	1080.1	976.1
40°	764.1	850.1	996.1	848.1	776.1
42.5°	596.0	658.1	754.1	656.1	594.0
45°	448.0	502.0	544.0	492.0	450.0
47.5°	330.0	366.0	390.0	360.0	322.0
50°	232.0	258.0	264.0	252.0	224.0
52.5°	174.0	174.0	176.0	172.0	170.0
55°	136.0	128.0	114.0	126.0	134.0
57.5°	106.0	98.0	80.0	94.0	104.0
60°	82.0	74.0	58.0	72.0	80.0
62.5°	64.0	56.0	46.0	56.0	62.0
65°	48.0	44.0	36.0	42.0	48.0
67.5°	36.0	32.0	28.0	32.0	36.0
70°	28.0	26.0	22.0	24.0	28.0
72.5°	20.0	18.0	18.0	18.0	20.0
75°	14.0	14.0	14.0	14.0	14.0
77.5°	10.0	10.0	10.0	10.0	10.0
80°	6.0	6.0	8.0	8.0	8.0
82.5°	4.0	4.0	6.0	6.0	6.0
85°	4.0	4.0	4.0	4.0	4.0
87.5°	2.0	2.0	2.0	4.0	4.0
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



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Scaled Data Report





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

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