

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: P838640

Luminaire Tested: HCSQ645D010-HM64560930-61SQH

Issue Date: 5/21/2024

**Test Information**

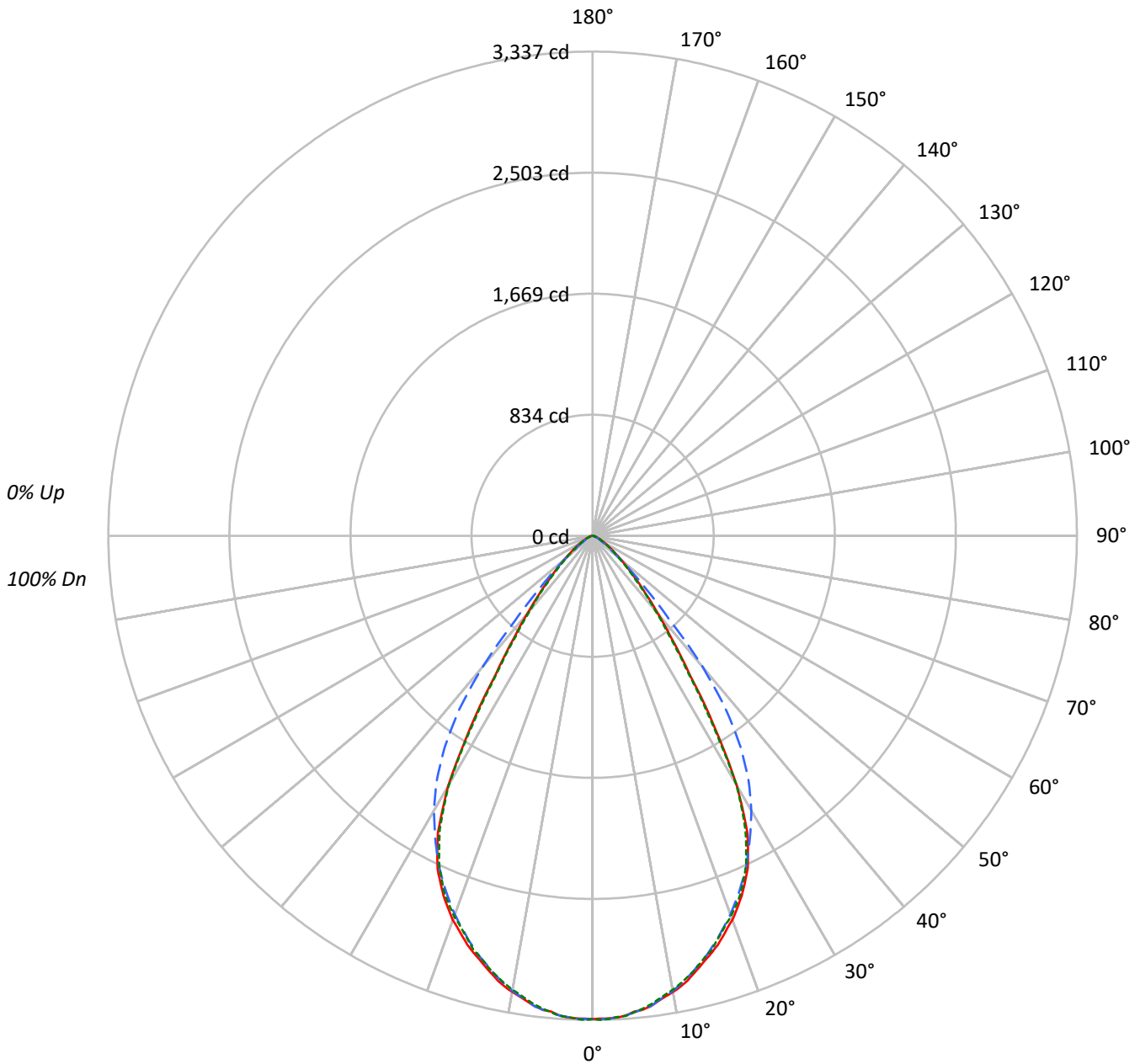
Test Method: LM-79-2019  
Report Number: P838640  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2309-166-2)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 5/21/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCSQ645D010-HM64560930-61SQH  
Description: HALO COMMERCIAL 6" SQUARE, NEW CONSTRUCTION FRAME, HAZE TRIM  
Light Source: (1) HIGH LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3746.7 lumens  
Efficiency: N/A  
Efficacy: 81.6 lumens/watt  
Spacing Criteria (0/90/45): 1.02 / 1.01 / 1.04  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 45.9  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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																			
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	97	95	94	92																			
2	107	101	97	93	104	100	96	92	96	93	90	93	91	88	91	88	86	85																			
3	101	94	88	84	99	92	87	83	90	85	82	87	84	81	85	82	79	78																			
4	95	87	81	76	93	86	80	76	83	78	75	81	77	74	79	76	73	71																			
5	90	80	74	69	88	79	74	69	78	72	68	76	71	68	74	70	67	66																			
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62	61																			
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	65	61	58	56																			
8	76	65	59	54	74	65	59	54	64	58	54	63	57	54	62	57	54	52																			
9	72	61	55	51	70	61	55	50	60	54	50	59	54	50	58	53	50	48																			
10	68	58	51	47	67	57	51	47	56	51	47	55	50	47	55	50	47	45																			

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

	0°	45°	90°
0°	143436	143436	143436
5°	142307	142544	142467
10°	139589	139265	138942
15°	134660	133915	133835
20°	129104	127244	127835
25°	120168	119113	118852
30°	98752	108670	98473
35°	60987	93328	59531
40°	39153	66153	37804
45°	25537	32065	24301
50°	16953	15969	15841
55°	11515	8325	10682
60°	7793	5089	7156
65°	5461	3769	4890
70°	3487	2795	3260
75°	2462	2146	2146
80°	1835	1364	1364
85°	889	1828	889

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°  
 Vertical Angle: 45°  
 Luminance: 32065 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	311.1	8.3
10°-20°	844.4	22.5
20°-30°	1139.9	30.4
30°-40°	889.6	23.7
40°-50°	372.7	9.9
50°-60°	126.3	3.4
60°-70°	45.0	1.2
70°-80°	14.6	0.4
80°-90°	3.0	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°	2295.4	61.3
0°-40°	3185.0	85.0
0°-60°	3684.1	98.3
0°-90°	3746.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3746.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3331	3331	3331	3331	3331	
5°	3293	3296	3298	3293	3296	311
15°	3021	3014	3004	3001	3002	850
25°	2530	2518	2507	2507	2502	1138
35°	1160	1362	1776	1360	1133	763
45°	419	449	527	429	399	337
55°	153	140	111	133	142	142
65°	54	44	37	42	48	55
75°	15	13	13	13	13	16
85°	2	2	4	2	2	3
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3331.4	3331.4	3331.4	3331.4	3331.4
1°	3327.7	3333.2	3329.5	3331.4	3336.9
2°	3327.7	3327.7	3331.4	3329.5	3331.4
3°	3324.0	3324.0	3320.3	3320.3	3320.3
4°	3312.9	3312.9	3312.9	3309.2	3316.6
5°	3292.6	3296.3	3298.1	3292.6	3296.3
6°	3285.2	3287.0	3283.3	3281.5	3277.8
7°	3268.6	3263.0	3268.6	3255.6	3257.5
8°	3240.8	3240.8	3237.1	3233.5	3229.8
9°	3215.0	3215.0	3211.3	3205.7	3202.0
10°	3192.8	3187.3	3185.4	3179.9	3178.0
11°	3166.9	3155.8	3154.0	3148.5	3148.5
12°	3135.5	3130.0	3117.0	3115.2	3115.2
13°	3096.7	3091.2	3081.9	3074.6	3081.9
14°	3059.8	3056.1	3039.4	3045.0	3043.1
15°	3021.0	3013.6	3004.3	3000.6	3002.5
16°	2985.9	2972.9	2960.0	2961.8	2972.9
17°	2948.9	2930.4	2917.5	2915.6	2921.2
18°	2902.7	2887.9	2867.6	2875.0	2875.0
19°	2856.5	2836.2	2823.3	2821.4	2828.8
20°	2817.7	2786.3	2777.1	2775.2	2790.0
22.5°	2684.7	2653.3	2645.9	2653.3	2668.1
25°	2529.5	2518.4	2507.3	2507.3	2501.8
27.5°	2309.6	2335.5	2348.4	2322.5	2280.0
30°	1986.3	2095.3	2185.8	2082.3	1980.7
32.5°	1565.0	1790.4	1999.2	1784.9	1528.0
35°	1160.3	1361.7	1775.6	1359.9	1132.6
37.5°	894.3	1023.6	1509.6	1007.0	868.4
40°	696.6	772.3	1177.0	763.1	672.6
42.5°	541.4	589.4	783.4	578.3	522.9
45°	419.4	449.0	526.6	428.7	399.1
47.5°	327.0	340.0	360.3	325.2	308.6
50°	253.1	253.1	238.4	243.9	236.5
52.5°	195.9	188.5	160.7	177.4	181.1
55°	153.4	140.4	110.9	133.0	142.3
57.5°	116.4	103.5	79.5	97.9	107.2
60°	90.5	77.6	59.1	73.9	83.1
62.5°	70.2	59.1	46.2	55.4	62.8
65°	53.6	44.3	37.0	42.5	48.0
67.5°	40.6	33.3	27.7	31.4	37.0
70°	27.7	25.9	22.2	24.0	25.9
72.5°	20.3	18.5	16.6	16.6	18.5
75°	14.8	12.9	12.9	12.9	12.9



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
82.5°	3.7	3.7	3.7	3.7	3.7
85°	1.8	1.8	3.7	1.8	1.8
87.5°	1.8	1.8	1.8	1.8	1.8
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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Scaled Data Report





77.5°	9.2	9.2	9.2	9.2	9.2
80°	7.4	7.4	5.5	5.5	5.5

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Scaled Data Report



(END OF REPORT)