

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

Report Number: P645612

Luminaire Tested: LCR408WW9FSE020-8W-3000K

Issue Date: 3/14/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P645612  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-759-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/14/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: LCR408WW9FSE020-8W-3000K  
Description: LCR 4 Wall Wash  
Light Source: 3000K CCT, 93 CRI LEDS  
Ballast/Driver: -

**Summary**

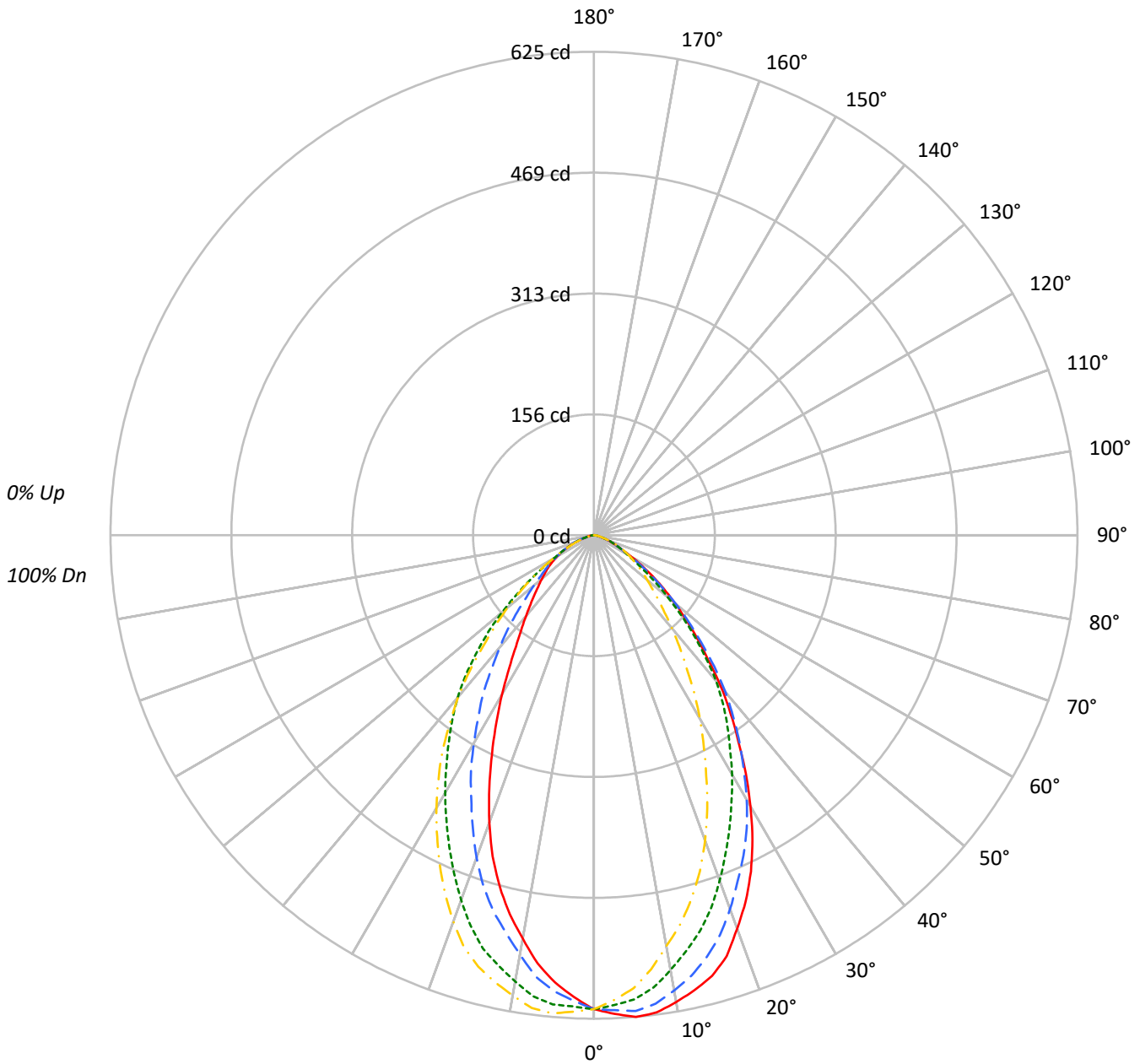
Lumens per Lamp: N/A  
Luminaire Lumens: 830.0 lumens  
Efficiency: N/A  
Efficacy: 102.5 lumens/watt  
Spacing Criteria (0/90/45): 0.91 / 0.97 / 1  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 8.1  
Input Voltage (V): 120  
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



— 0°-180°    - - 45°-225°    - - - 90°-270°    - - - 135°-315°



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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	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	100
1	112	108	105	102	109	106	103	101	102	100	97	98	96	95	95	93	92	95	93	92	90
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	87	84	82	80
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	76	73	80	76	73	71
4	91	81	74	69	89	80	73	68	78	72	68	76	71	67	74	69	66	74	69	66	64
5	85	74	67	62	83	73	67	61	71	65	61	70	64	60	68	63	60	68	63	60	58
6	79	68	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	63	58	54	53
7	75	63	56	51	73	62	56	51	61	55	50	60	54	50	59	53	50	59	53	50	48
8	70	59	51	46	69	58	51	46	57	51	46	56	50	46	55	49	46	55	49	46	44
9	66	55	48	43	65	54	47	43	53	47	42	52	46	42	51	46	42	51	46	42	41
10	62	51	44	40	61	51	44	39	50	44	39	49	43	39	48	43	39	48	43	39	38

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

	0°	90°	180°	270°
0°	75574	75574	75574	75574
5°	77398	74562	71839	75380
10°	76740	71479	66332	73383
15°	75316	67628	60081	70680
20°	71026	62376	51861	65893
25°	65326	56494	42476	60264
30°	57626	50832	33841	54778
35°	48998	45264	26441	49284
40°	41188	39497	21979	44102
45°	32951	31800	18979	37295
50°	26193	23814	16848	29666
55°	19913	16838	15397	21548
60°	13889	12236	13420	14826
65°	9748	9748	11412	11149
70°	7213	7573	8259	8619
75°	4099	4527	5004	5481
80°	3410	4049	4759	4759
85°	2689	2689	4104	4104

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 270°

Vertical Angle: 45°

Luminance: 37295 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	56.7	6.8
10°-20°	149.2	18.0
20°-30°	188.9	22.8
30°-40°	176.1	21.2
40°-50°	130.5	15.7
50°-60°	76.5	9.2
60°-70°	36.6	4.4
70°-80°	12.5	1.5
80°-90°	3.0	0.4
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°	394.7	47.6
0°-40°	570.8	68.8
0°-60°	777.8	93.7
0°-90°	830.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	830.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	613	613	613	613	613	
5°	625	602	580	609	625	59
15°	590	530	470	554	590	165
25°	480	415	312	443	480	219
35°	325	301	176	327	325	204
45°	189	182	109	214	189	147
55°	93	78	72	100	93	84
65°	33	33	39	38	33	35
75°	9	10	10	12	9	11
85°	2	2	3	3	2	2
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°	202.5°	225°
0°	612.7	612.7	612.7	612.7	612.7	612.7	612.7	612.7	612.7	612.7	612.7
2.5°	619.3	617.4	614.6	611.7	607.9	603.1	601.2	598.3	597.4	599.3	602.2
5°	625.1	622.2	617.4	610.7	602.2	593.6	587.8	583.1	580.2	584.0	591.7
7.5°	622.2	618.4	610.7	601.2	589.8	577.3	565.9	559.2	558.3	564.0	575.4
10°	612.7	605.0	597.4	585.9	570.7	553.5	539.2	532.5	529.6	536.3	550.6
12.5°	602.2	593.6	583.1	568.8	550.6	530.6	515.3	503.9	502.0	510.5	525.8
15°	589.8	579.3	564.0	547.8	529.6	507.7	486.7	473.3	470.5	482.9	502.9
17.5°	570.7	560.2	542.0	523.9	504.8	480.0	455.2	437.1	435.2	450.4	475.2
20°	541.1	534.4	514.4	495.3	475.2	446.6	419.9	398.9	395.1	413.2	443.7
22.5°	512.5	501.0	484.8	465.7	444.7	415.1	382.7	356.0	353.1	374.1	409.4
25°	480.0	471.4	457.1	436.1	415.1	382.7	343.5	315.9	312.1	335.0	375.0
27.5°	443.7	439.0	427.5	405.6	385.5	349.3	307.3	277.7	272.9	296.8	344.5
30°	404.6	404.6	395.1	374.1	356.9	318.7	273.9	242.4	237.6	262.4	310.1
32.5°	365.5	368.4	360.7	342.6	327.3	288.2	240.5	208.0	203.3	230.0	277.7
35°	325.4	332.1	328.3	314.0	300.6	256.7	208.0	179.4	175.6	199.4	250.0
37.5°	290.1	297.7	295.8	286.3	273.9	228.1	181.3	156.5	154.6	174.6	216.6
40°	255.8	262.4	264.3	257.7	245.3	197.5	156.5	137.4	136.5	151.7	188.9
42.5°	218.5	227.1	230.0	228.1	212.8	168.9	134.6	121.2	121.2	131.7	165.1
45°	188.9	191.8	195.6	194.7	182.3	143.1	117.4	108.8	108.8	116.4	139.3
47.5°	161.3	162.2	166.0	165.1	152.7	120.2	102.1	97.3	97.3	103.1	118.3
50°	136.5	135.5	137.4	135.5	124.1	100.2	89.7	86.8	87.8	91.6	101.2
52.5°	113.6	111.7	111.7	108.8	99.2	84.9	79.2	78.3	79.2	82.1	86.8
55°	92.6	89.7	89.7	85.9	78.3	71.6	69.7	69.7	71.6	72.5	76.3
57.5°	73.5	71.6	69.7	65.8	61.1	60.1	60.1	62.0	63.0	63.0	65.8
60°	56.3	55.3	53.4	50.6	49.6	50.6	52.5	53.4	54.4	55.3	56.3
62.5°	42.9	42.0	41.0	40.1	41.0	42.9	43.9	45.8	47.7	46.8	47.7
65°	33.4	32.4	32.4	32.4	33.4	35.3	36.3	37.2	39.1	39.1	40.1
67.5°	25.8	25.8	25.8	25.8	26.7	28.6	29.6	29.6	30.5	31.5	32.4
70°	20.0	19.1	20.0	20.0	21.0	21.9	21.9	22.9	22.9	23.9	25.8
72.5°	14.3	13.4	14.3	14.3	14.3	16.2	15.3	16.2	17.2	17.2	19.1
75°	8.6	8.6	8.6	9.5	9.5	9.5	9.5	10.5	10.5	10.5	11.5
77.5°	6.7	6.7	6.7	6.7	7.6	7.6	7.6	8.6	8.6	8.6	8.6
80°	4.8	4.8	4.8	5.7	5.7	5.7	5.7	5.7	6.7	6.7	6.7
82.5°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	4.8	4.8	4.8	4.8
85°	1.9	1.9	1.9	1.9	1.9	2.9	2.9	2.9	2.9	2.9	2.9
87.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.9	1.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	612.7	612.7	612.7	612.7	612.7	612.7
2.5°	606.0	609.8	613.6	616.5	618.4	619.3
5°	600.2	608.8	615.5	620.3	624.1	625.1
7.5°	589.8	601.2	610.7	616.5	620.3	622.2
10°	570.7	585.9	597.4	604.1	611.7	612.7
12.5°	551.6	569.7	582.1	591.7	601.2	602.2
15°	529.6	553.5	564.0	577.3	587.8	589.8
17.5°	507.7	529.6	542.0	558.3	569.7	570.7
20°	476.2	502.0	514.4	531.5	540.1	541.1
22.5°	447.6	472.4	487.6	502.0	511.5	512.5
25°	415.1	442.8	459.0	471.4	479.1	480.0
27.5°	386.5	413.2	428.5	439.0	443.7	443.7
30°	357.9	384.6	397.0	407.5	407.5	404.6
32.5°	327.3	355.0	364.5	374.1	368.4	365.5
35°	299.6	327.3	334.0	341.6	330.2	325.4
37.5°	272.9	300.6	303.5	305.4	294.9	290.1
40°	245.3	273.9	272.9	272.9	260.5	255.8
42.5°	213.8	245.3	241.4	237.6	223.3	218.5
45°	184.2	213.8	208.0	201.4	191.8	188.9
47.5°	157.5	185.1	179.4	172.7	165.1	161.3
50°	129.8	154.6	151.7	145.1	140.3	136.5
52.5°	105.9	126.0	125.0	121.2	117.4	113.6
55°	84.9	100.2	102.1	99.2	95.4	92.6
57.5°	68.7	78.3	81.1	79.2	76.3	73.5
60°	56.3	60.1	62.0	62.0	59.2	56.3
62.5°	46.8	47.7	47.7	47.7	45.8	42.9
65°	39.1	38.2	37.2	37.2	35.3	33.4
67.5°	31.5	30.5	29.6	28.6	27.7	25.8
70°	24.8	23.9	22.9	21.9	21.0	20.0
72.5°	19.1	17.2	17.2	15.3	14.3	14.3
75°	12.4	11.5	10.5	10.5	9.5	8.6
77.5°	8.6	8.6	7.6	7.6	6.7	6.7
80°	6.7	6.7	5.7	5.7	4.8	4.8
82.5°	4.8	4.8	4.8	3.8	3.8	3.8
85°	2.9	2.9	2.9	2.9	1.9	1.9
87.5°	1.9	1.9	1.9	1.0	1.0	1.0
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)