

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: P645622

Luminaire Tested: LCR412WW9FSE020-12W-6500K

Issue Date: 3/14/2023

Test Information

Test Method: LM-79-2019
Report Number: P645622
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-759-45)
Test Lab: INNOVATION CENTER
Issue Date: 3/14/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: LCR412WW9FSE020-12W-6500K
Description: LCR 4 Wall Wash
Light Source: 6500K CCT, 93 CRI LEDS
Ballast/Driver: -

Summary

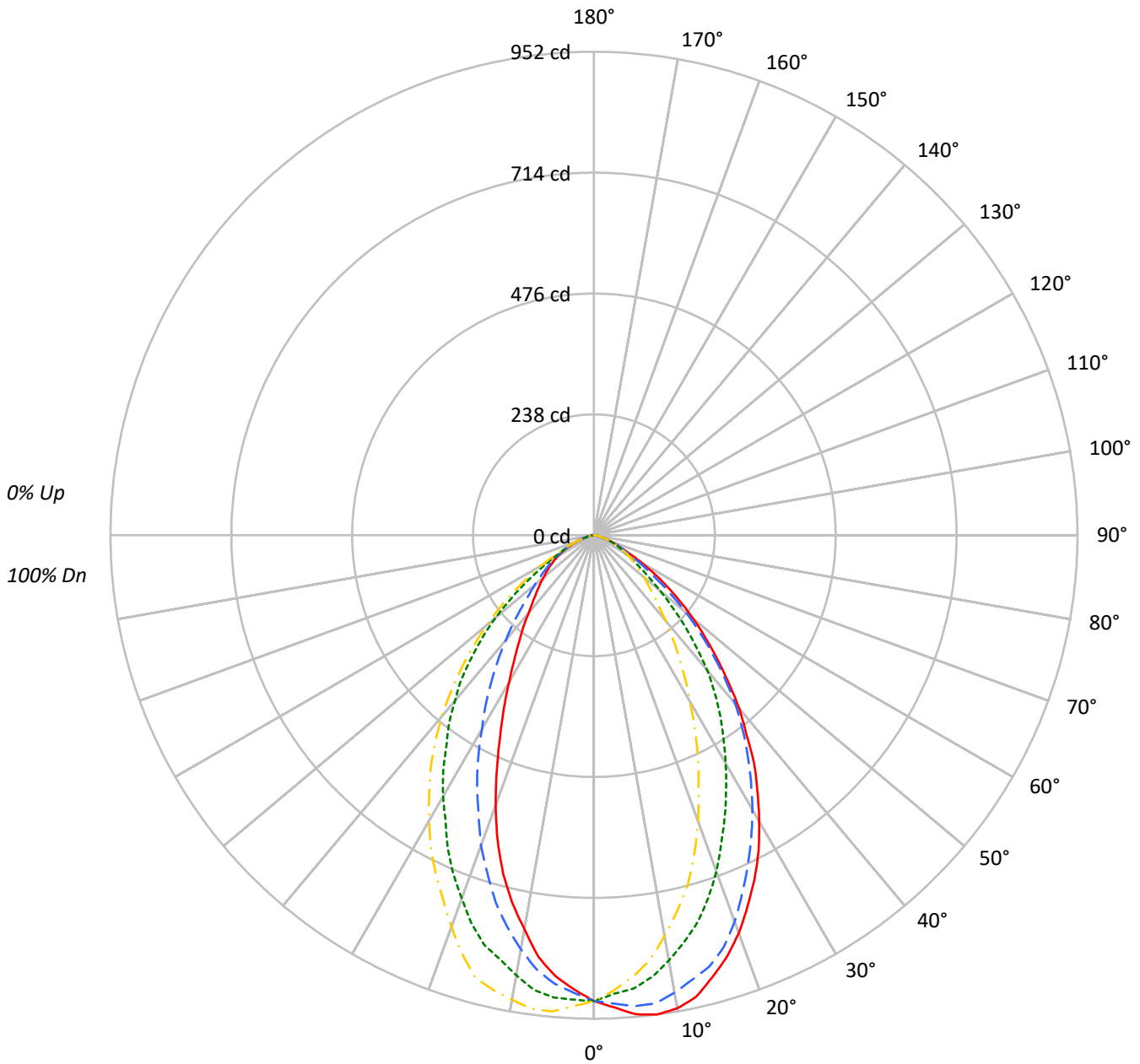
Lumens per Lamp: N/A
Luminaire Lumens: 1285.0 lumens
Efficiency: N/A
Efficacy: 106.2 lumens/watt
Spacing Criteria (0/90/45): 0.9 / 0.97 / 1.02
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 12.1
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
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	100	
1	112	108	105	102	109	106	103	100	102	99	97	98	96	94	94	93	92	94	90	
2	104	98	93	88	102	96	91	87	93	89	85	90	86	83	87	84	82	87	80	
3	97	89	82	77	95	87	81	77	84	79	75	82	78	74	79	76	73	79	71	
4	90	81	74	68	88	80	73	68	77	72	67	75	70	66	73	69	65	73	64	
5	84	74	66	61	83	73	66	61	71	65	60	69	64	60	67	63	59	67	57	
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	54	62	52	
7	74	63	55	50	73	62	55	50	60	54	50	59	53	49	58	53	49	58	47	
8	70	58	51	46	68	57	50	46	56	50	45	55	49	45	54	49	45	54	43	
9	66	54	47	42	64	53	47	42	52	46	42	51	46	42	50	45	41	50	40	
10	62	50	43	39	61	50	43	39	49	43	39	48	42	39	47	42	38	47	37	

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	113133	113133	113133	113133
5°	117242	110952	107869	113094
10°	118485	106474	98671	110206
15°	115042	100727	88124	106601
20°	109446	92474	74228	99890
25°	101746	82965	59488	92614
30°	92692	73849	47499	84630
35°	82833	65230	38683	76207
40°	71604	55873	32107	68512
45°	59692	44133	27927	59518
50°	48740	32545	24831	48549
55°	37934	23505	22666	35655
60°	26717	18206	19859	24595
65°	17628	15118	16490	17891
70°	12442	11757	12081	13812
75°	6863	7292	8245	8245
80°	5469	6819	7458	6819
85°	4104	5378	6793	6793

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 292.5°

Vertical Angle: 45°

Luminance: 64873 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	85.4	6.6
10°-20°	224.9	17.5
20°-30°	284.6	22.1
30°-40°	271.5	21.1
40°-50°	208.6	16.2
50°-60°	125.8	9.8
60°-70°	59.7	4.6
70°-80°	19.9	1.6
80°-90°	4.7	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°	594.8	46.3
0°-40°	866.3	67.4
0°-60°	1200.7	93.4
0°-90°	1285.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1285.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	917	917	917	917	917	
5°	947	896	871	913	947	90
15°	901	789	690	835	901	253
25°	748	610	437	680	748	343
35°	550	433	257	506	550	341
45°	342	253	160	341	342	265
55°	176	109	105	166	176	158
65°	60	52	56	61	60	64
75°	14	15	17	17	14	18
85°	3	4	5	5	3	4
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°	917.2	917.2	917.2	917.2	917.2	917.2	917.2	917.2	917.2	917.2	917.2
2.5°	930.7	928.7	923.0	913.4	903.8	898.1	897.1	894.2	895.2	898.1	901.9
5°	946.9	943.1	930.7	914.4	896.1	883.7	873.1	871.2	871.2	877.9	886.6
7.5°	951.7	945.0	929.7	903.8	877.0	857.8	843.4	835.8	837.7	847.3	862.6
10°	946.0	938.3	914.4	882.7	850.1	823.3	801.3	788.8	787.8	805.1	828.1
12.5°	930.7	925.9	896.1	861.6	820.4	789.8	757.2	739.9	741.8	759.1	789.8
15°	900.9	900.9	878.9	834.8	788.8	753.3	713.1	688.2	690.1	713.1	747.6
17.5°	870.3	865.5	850.1	799.3	748.5	705.4	657.5	626.8	630.7	656.5	697.7
20°	833.8	829.1	809.9	757.2	704.5	655.6	599.0	565.5	565.5	596.2	649.8
22.5°	790.7	786.9	762.9	713.1	655.6	599.0	537.7	500.3	499.4	534.8	593.3
25°	747.6	747.6	716.9	667.1	609.6	545.4	485.0	439.0	437.1	476.3	544.4
27.5°	701.6	698.7	670.9	623.9	563.6	499.4	429.4	385.3	383.4	420.8	493.6
30°	650.8	649.8	623.9	577.0	518.5	447.6	378.6	335.5	333.5	371.9	440.9
32.5°	599.0	600.0	575.1	531.9	474.4	398.7	333.5	293.3	292.3	327.8	396.8
35°	550.1	546.3	527.1	485.9	433.2	354.6	290.4	255.9	256.9	285.6	351.7
37.5°	492.6	495.5	480.2	442.8	390.1	314.4	254.0	224.3	229.1	249.2	310.5
40°	444.7	444.7	432.3	396.8	347.0	271.2	218.5	197.4	199.4	221.4	270.3
42.5°	391.0	389.1	380.5	349.8	298.1	233.9	188.8	174.4	178.3	193.6	234.8
45°	342.2	336.4	329.7	300.0	253.0	192.6	163.9	157.2	160.1	170.6	201.3
47.5°	296.2	288.5	281.8	252.1	208.0	163.9	144.7	140.9	144.7	154.3	173.5
50°	254.0	243.4	235.8	205.1	169.6	136.1	127.5	127.5	129.4	138.0	151.4
52.5°	213.7	201.3	190.7	163.9	137.1	116.0	113.1	114.1	116.9	123.6	132.3
55°	176.4	164.9	152.4	131.3	109.3	100.6	99.7	101.6	105.4	109.3	115.0
57.5°	140.9	131.3	119.8	104.5	89.1	86.3	87.2	89.1	93.0	96.8	99.7
60°	108.3	101.6	93.0	82.4	73.8	73.8	75.7	77.6	80.5	83.4	86.3
62.5°	80.5	76.7	72.8	66.1	61.3	63.3	64.2	65.2	69.0	70.9	72.8
65°	60.4	58.5	56.5	53.7	51.8	52.7	53.7	53.7	56.5	58.5	60.4
67.5°	46.0	45.0	45.0	43.1	41.2	43.1	43.1	42.2	44.1	46.0	48.9
70°	34.5	33.5	33.5	33.5	32.6	33.5	33.5	32.6	33.5	35.5	37.4
72.5°	24.0	23.0	24.0	24.0	23.0	24.9	24.0	24.9	25.9	25.9	26.8
75°	14.4	14.4	14.4	15.3	15.3	16.3	16.3	16.3	17.3	17.3	17.3
77.5°	10.5	10.5	10.5	11.5	12.5	12.5	12.5	13.4	13.4	13.4	13.4
80°	7.7	7.7	8.6	8.6	9.6	9.6	9.6	10.5	10.5	10.5	10.5
82.5°	5.8	5.8	5.8	5.8	6.7	6.7	6.7	7.7	7.7	7.7	7.7
85°	2.9	2.9	3.8	3.8	3.8	3.8	4.8	4.8	4.8	4.8	4.8
87.5°	1.9	1.0	1.0	1.0	1.9	1.9	1.9	1.9	1.9	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°	917.2	917.2	917.2	917.2	917.2	917.2
2.5°	907.6	915.3	923.0	927.8	928.7	930.7
5°	899.0	913.4	929.7	941.2	945.0	946.9
7.5°	881.8	902.9	926.8	940.2	948.9	951.7
10°	852.1	879.9	909.6	928.7	941.2	946.0
12.5°	823.3	854.9	891.4	917.2	926.8	930.7
15°	789.8	834.8	870.3	901.9	900.9	900.9
17.5°	751.4	801.3	840.6	863.6	870.3	870.3
20°	708.3	761.0	804.1	820.4	831.9	833.8
22.5°	663.2	722.7	765.8	776.3	794.6	790.7
25°	617.2	680.5	722.7	736.1	747.6	747.6
27.5°	572.2	632.6	679.5	694.9	701.6	701.6
30°	528.1	594.2	633.5	648.9	656.5	650.8
32.5°	485.9	552.1	589.4	603.8	605.7	599.0
35°	440.9	506.1	546.3	560.7	555.9	550.1
37.5°	397.8	469.6	503.2	512.8	506.1	492.6
40°	355.6	425.5	460.1	465.8	453.3	444.7
42.5°	312.5	387.2	416.9	416.0	401.6	391.0
45°	269.3	341.2	371.9	368.0	351.7	342.2
47.5°	229.1	297.1	325.9	320.1	304.8	296.2
50°	189.8	253.0	277.0	274.1	261.7	254.0
52.5°	157.2	207.0	233.9	231.9	219.5	213.7
55°	129.4	165.8	186.9	189.8	182.1	176.4
57.5°	106.4	128.4	152.4	152.4	146.6	140.9
60°	88.2	99.7	119.8	119.8	114.1	108.3
62.5°	72.8	77.6	91.1	91.1	85.3	80.5
65°	60.4	61.3	68.0	68.0	63.3	60.4
67.5°	48.9	48.9	50.8	50.8	47.9	46.0
70°	38.3	38.3	40.3	37.4	35.5	34.5
72.5°	27.8	26.8	28.8	25.9	24.9	24.0
75°	17.3	17.3	17.3	16.3	14.4	14.4
77.5°	13.4	12.5	11.5	11.5	10.5	10.5
80°	10.5	9.6	8.6	8.6	7.7	7.7
82.5°	7.7	6.7	6.7	5.8	5.8	5.8
85°	4.8	4.8	3.8	3.8	3.8	2.9
87.5°	1.9	1.9	1.9	1.9	1.9	1.9
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)