

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: P645617

Luminaire Tested: LCR412WW9FSE020-12W-2700K

Issue Date: 3/14/2023

Test Information

Test Method: LM-79-2019
Report Number: P645617
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2209-759-25)
Test Lab: INNOVATION CENTER
Issue Date: 3/14/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: LCR412WW9FSE020-12W-2700K
Description: LCR 4 Wall Wash
Light Source: 2700K CCT, 93 CRI LEDS
Ballast/Driver: -

Summary

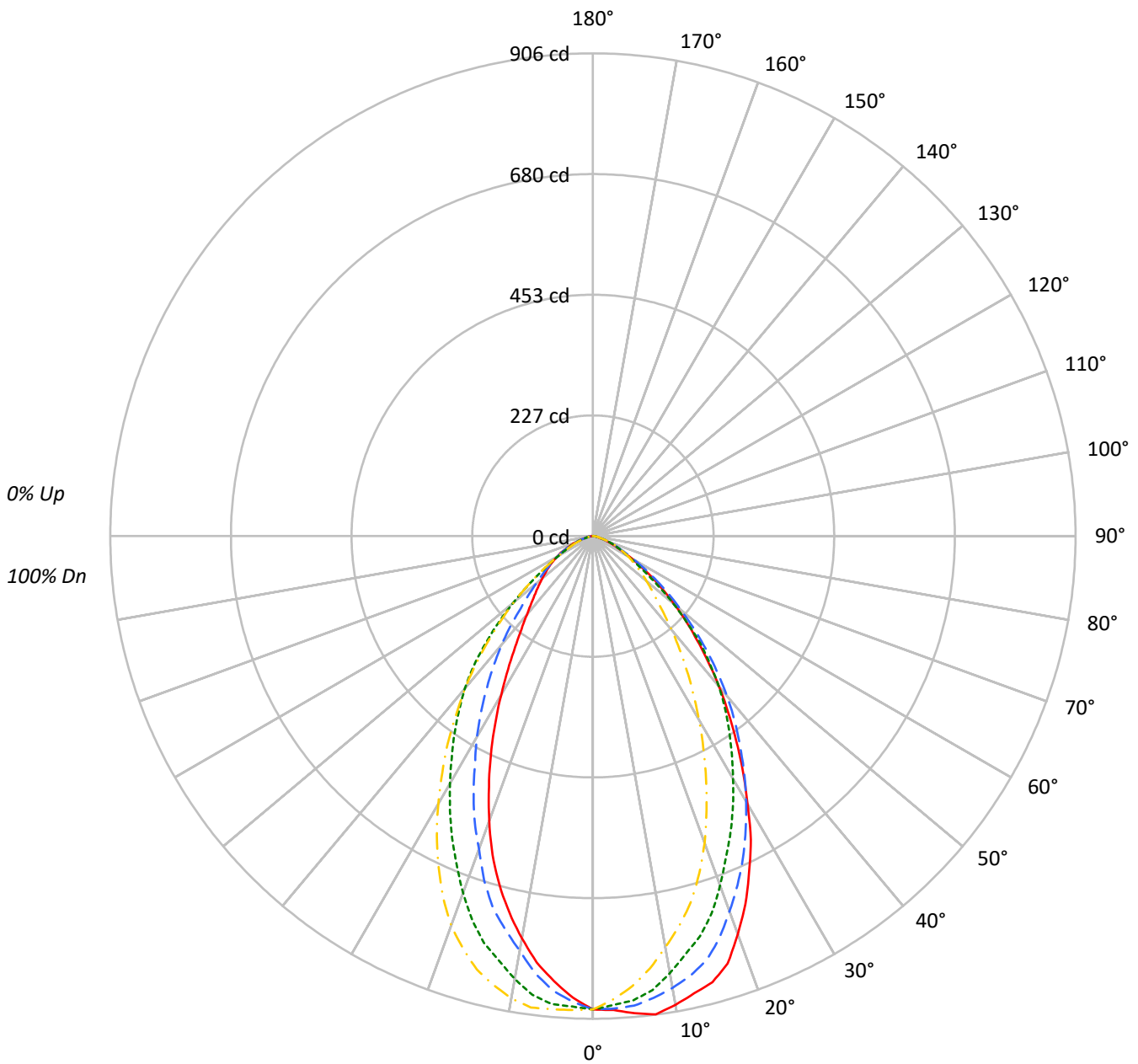
Lumens per Lamp: N/A
Luminaire Lumens: 1195.0 lumens
Efficiency: N/A
Efficacy: 98.8 lumens/watt
Spacing Criteria (0/90/45): 0.91 / 0.96 / 1
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

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

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	109593	109593	109593	109593
5°	111299	108265	103820	109194
10°	111872	104307	96028	105722
15°	110688	99233	86578	100919
20°	104353	91594	74740	93576
25°	94451	83278	61679	85074
30°	82708	74902	48952	76384
35°	70666	67112	38247	68242
40°	59286	59141	31012	60204
45°	48267	49906	26689	49575
50°	38417	37860	23910	37515
55°	29246	26386	21720	26193
60°	20500	19094	19094	18403
65°	14330	15148	16257	14330
70°	10206	11576	12262	11252
75°	5862	7196	7673	7196
80°	4688	6038	6677	6038
85°	3963	5378	5378	5378

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°

Vertical Angle: 45°

Luminance: 53360 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	82.0	6.9
10°-20°	216.2	18.1
20°-30°	272.8	22.8
30°-40°	252.6	21.1
40°-50°	187.6	15.7
50°-60°	109.2	9.1
60°-70°	52.4	4.4
70°-80°	17.9	1.5
80°-90°	4.1	0.3
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°	571.0	47.8
0°-40°	823.7	68.9
0°-60°	1120.5	93.8
0°-90°	1195.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1195.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	888	888	888	888	888	
5°	899	874	838	882	899	86
15°	867	777	678	790	867	242
25°	694	612	453	625	694	318
35°	469	446	254	453	469	293
45°	277	286	153	284	277	215
55°	136	123	101	122	136	123
65°	49	52	56	49	49	51
75°	12	15	16	15	12	16
85°	3	4	4	4	3	3
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°	888.5	888.5	888.5	888.5	888.5	888.5	888.5	888.5	888.5	888.5	888.5
2.5°	890.4	890.4	887.6	885.7	881.0	876.2	870.6	866.8	866.8	869.6	874.4
5°	898.9	891.3	884.7	881.0	874.4	860.2	847.9	841.3	838.5	844.1	856.4
7.5°	905.5	892.3	874.4	867.7	859.2	834.7	818.6	810.1	807.3	813.0	828.1
10°	893.2	881.0	861.1	842.2	832.8	803.5	783.7	771.4	766.7	775.2	790.3
12.5°	879.1	865.9	845.1	817.7	803.5	771.4	748.8	729.9	724.2	737.4	757.3
15°	866.8	849.8	824.3	794.1	777.1	737.4	711.0	685.5	678.0	691.2	723.3
17.5°	841.3	823.4	790.3	762.9	742.2	699.7	663.8	636.4	627.0	644.0	678.0
20°	795.0	786.5	749.7	723.3	697.8	655.3	612.8	579.8	569.4	588.3	625.1
22.5°	747.8	743.1	709.1	682.7	652.5	607.1	557.1	519.3	509.9	531.6	579.8
25°	694.0	693.1	666.6	641.1	611.9	559.9	502.3	460.8	453.2	478.7	529.7
27.5°	642.1	644.0	621.3	598.6	569.4	515.5	449.4	403.2	397.5	425.8	478.7
30°	580.7	591.1	575.0	555.2	525.9	469.3	398.5	350.3	343.7	373.9	435.3
32.5°	524.0	540.1	528.8	513.7	485.3	424.9	350.3	303.1	296.5	327.6	390.0
35°	469.3	487.2	481.6	471.2	445.7	381.5	306.9	260.6	254.0	284.2	346.5
37.5°	417.3	435.3	437.2	432.5	407.0	342.8	266.3	227.6	220.0	247.4	305.0
40°	368.2	386.2	391.9	390.9	367.3	296.5	230.4	198.3	192.6	211.5	266.3
42.5°	320.1	335.2	344.6	348.4	324.8	258.7	196.4	174.7	170.9	185.1	228.5
45°	276.7	288.0	299.3	305.9	286.1	215.3	170.0	155.8	153.0	161.5	191.7
47.5°	237.9	245.5	256.8	264.4	238.9	180.3	149.2	140.7	137.9	143.5	163.4
50°	200.2	204.9	215.3	220.9	197.3	150.1	131.2	125.6	124.6	128.4	139.7
52.5°	167.1	170.9	180.3	180.3	156.7	126.5	116.1	113.3	111.4	114.3	120.9
55°	136.0	139.7	146.4	146.4	122.7	107.6	102.0	101.0	101.0	101.0	103.9
57.5°	108.6	112.4	116.1	114.3	96.3	90.6	88.8	88.8	88.8	88.8	89.7
60°	83.1	88.8	90.6	86.9	77.4	76.5	76.5	77.4	77.4	77.4	76.5
62.5°	64.2	68.0	69.9	67.0	63.3	65.2	65.2	66.1	68.0	66.1	65.2
65°	49.1	51.9	53.8	52.9	51.9	53.8	53.8	54.8	55.7	55.7	54.8
67.5°	37.8	39.7	40.6	41.5	42.5	43.4	43.4	42.5	44.4	44.4	45.3
70°	28.3	30.2	31.2	32.1	32.1	34.0	33.0	32.1	34.0	34.9	34.9
72.5°	19.8	19.8	21.7	22.7	23.6	24.5	23.6	23.6	25.5	25.5	26.4
75°	12.3	12.3	13.2	14.2	15.1	15.1	15.1	15.1	16.1	16.1	16.1
77.5°	9.4	9.4	9.4	10.4	11.3	11.3	11.3	12.3	12.3	12.3	12.3
80°	6.6	6.6	7.6	7.6	8.5	8.5	9.4	9.4	9.4	9.4	9.4
82.5°	4.7	4.7	4.7	5.7	5.7	6.6	6.6	6.6	6.6	6.6	6.6
85°	2.8	2.8	2.8	2.8	3.8	3.8	3.8	3.8	3.8	4.7	4.7
87.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	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°	888.5	888.5	888.5	888.5	888.5	888.5
2.5°	880.0	883.8	888.5	890.4	890.4	890.4
5°	870.6	881.9	886.6	891.3	898.0	898.9
7.5°	851.7	868.7	876.2	892.3	901.7	905.5
10°	820.5	844.1	857.4	881.0	891.3	893.2
12.5°	789.4	815.8	837.5	863.0	875.3	879.1
15°	755.4	790.3	813.0	842.2	861.1	866.8
17.5°	716.7	754.4	781.8	811.1	835.6	841.3
20°	672.3	712.9	741.2	778.0	795.0	795.0
22.5°	626.0	667.6	696.8	734.6	740.3	747.8
25°	581.6	625.1	652.5	685.5	692.1	694.0
27.5°	539.2	580.7	610.0	634.5	632.6	642.1
30°	495.7	536.3	561.8	580.7	573.1	580.7
32.5°	453.2	492.9	510.8	525.9	516.5	524.0
35°	412.6	453.2	466.4	474.9	462.7	469.3
37.5°	373.0	412.6	422.1	421.1	415.5	417.3
40°	332.4	373.9	377.7	373.0	363.5	368.2
42.5°	291.8	332.4	334.3	323.9	320.1	320.1
45°	249.3	284.2	286.1	275.7	271.0	276.7
47.5°	207.7	240.8	239.8	232.3	236.1	237.9
50°	171.8	195.5	196.4	193.6	197.3	200.2
52.5°	140.7	156.7	157.7	157.7	163.4	167.1
55°	113.3	121.8	122.7	125.6	131.2	136.0
57.5°	91.6	96.3	94.4	97.3	102.9	108.6
60°	74.6	74.6	72.7	74.6	79.3	83.1
62.5°	62.3	59.5	58.5	57.6	60.4	64.2
65°	51.9	49.1	46.3	46.3	47.2	49.1
67.5°	42.5	38.7	38.7	36.8	36.8	37.8
70°	34.0	31.2	29.3	27.4	27.4	28.3
72.5°	24.5	22.7	21.7	19.8	19.8	19.8
75°	16.1	15.1	14.2	13.2	13.2	12.3
77.5°	11.3	11.3	10.4	9.4	9.4	9.4
80°	9.4	8.5	8.5	7.6	7.6	6.6
82.5°	6.6	6.6	5.7	5.7	4.7	4.7
85°	3.8	3.8	3.8	3.8	2.8	2.8
87.5°	1.9	1.9	1.9	1.9	1.9	0.9
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)