

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: P645600

Luminaire Tested: HLS4079401EWH

Issue Date: 3/6/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P645600  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( ETA20070011P-001 R1)  
Test Lab: ETA Testing Technology Co., Ltd.  
Issue Date: 3/6/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: HLS4079401EWH  
Description: 4IN 750LM WET LOCATION  
Light Source: (1) HIGH LUMEN LED 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

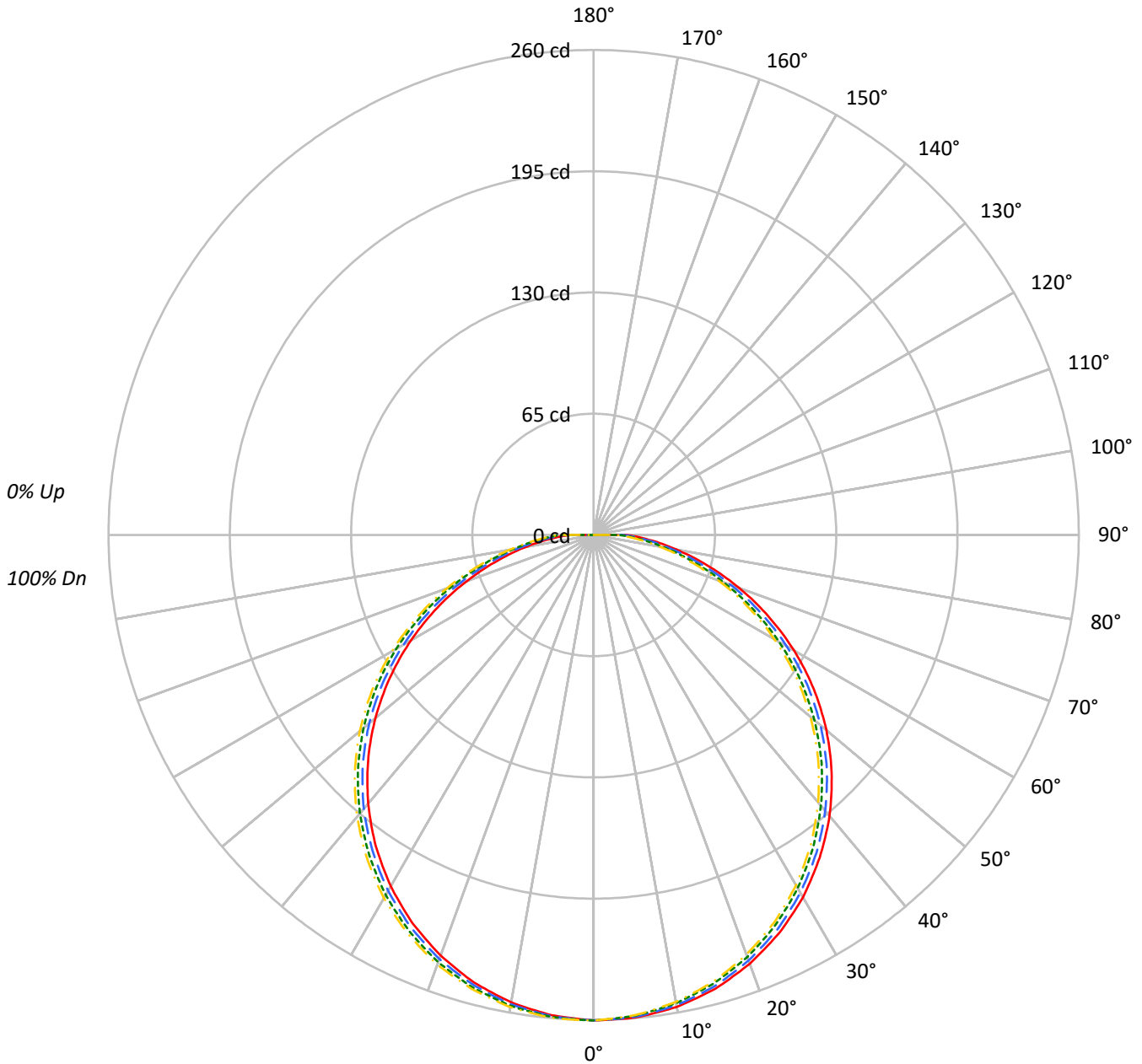
Lumens per Lamp: 794.86 (1 lamp)  
Luminaire Lumens: 780.0 lumens  
Efficiency: 98.1%  
Efficacy: 63.4 lumens/watt  
Spacing Criteria (0/90/45): 1.26 / 1.26 / 1.38  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 12.3  
Input Voltage (V): NR  
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





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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	117	117	117	117	114	114	114	114	109	109	109	104	104	104	100	100	100	98																			
1	106	101	96	92	103	98	94	90	94	91	88	90	87	85	87	84	82	80																			
2	96	87	80	74	93	85	79	73	82	76	72	79	74	70	76	72	68	66																			
3	87	76	68	61	85	75	67	61	72	65	60	69	63	59	67	62	58	55																			
4	80	68	59	52	77	66	58	51	64	56	51	61	55	50	59	54	49	47																			
5	73	60	51	44	71	59	51	44	57	49	44	55	48	43	53	47	43	41																			
6	68	54	45	39	66	53	45	39	51	44	38	50	43	38	48	42	37	35																			
7	63	49	40	34	61	48	40	34	47	39	34	45	39	33	44	38	33	31																			
8	58	45	36	30	57	44	36	30	43	35	30	42	35	30	40	34	30	28																			
9	54	41	33	27	53	40	33	27	39	32	27	38	32	27	37	31	27	25																			
10	51	38	30	25	50	37	30	25	36	29	25	35	29	24	35	29	24	23																			

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

	0°	90°	180°	270°
0°	32759	32759	32759	32759
5°	32808	32682	32656	32770
10°	32830	32574	32523	32766
15°	32820	32429	32351	32716
20°	32758	32250	32129	32638
25°	32688	32035	31896	32521
30°	32595	31781	31607	32392
35°	32448	31480	31280	32217
40°	32315	31132	30886	32019
45°	32107	30737	30434	31805
50°	31874	30230	29897	31502
55°	31595	29643	29248	31157
60°	31211	28895	28442	30733
65°	30791	28051	27545	30195
70°	30430	27155	26604	29768
75°	30585	26646	25868	29807
80°	32396	27540	26525	31526
85°	42741	34944	32922	41586

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 315°  
 Vertical Angle: 85°  
 Luminance: 43752 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	24.6	3.2	3.1
10°-20°	70.6	9.0	8.9
20°-30°	107.2	13.7	13.5
30°-40°	129.7	16.6	16.3
40°-50°	135.5	17.4	17.1
50°-60°	123.9	15.9	15.6
60°-70°	97.0	12.4	12.2
70°-80°	61.8	7.9	7.8
80°-90°	29.6	3.8	3.7
90°-100°	0.0	0.0	0.0
100°-110°	0.0	0.0	0.0
110°-120°	0.0	0.0	0.0
120°-130°	0.0	0.0	0.0
130°-140°	0.0	0.0	0.0
140°-150°	0.0	0.0	0.0
150°-160°	0.0	0.0	0.0
160°-170°	0.0	0.0	0.0
170°-180°	0.0	0.0	0.0
0°-30°	202.4	25.9	25.5
0°-40°	332.1	42.6	41.8
0°-60°	591.5	75.8	74.4
0°-90°	780.0	100.0	98.1
90°-120°	0.0	0.0	0.0
90°-150°	0.0	0.0	0.0
90°-180°	0.0	0.0	0.0
0°-180°	780.0	100.0	98.1

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	260	260	260	260	260	
5°	260	259	258	259	260	25
15°	252	249	248	251	252	71
25°	235	231	230	234	235	109
35°	211	205	204	210	211	132
45°	180	173	171	179	180	139
55°	144	135	133	142	144	129
65°	103	94	92	101	103	102
75°	63	55	53	61	63	67
85°	30	24	23	29	30	33
90°	18	14	12	17	18	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	260.3	260.3	260.3	260.3	260.3	260.3	260.3	260.3	260.3	260.3	260.3
5°	259.7	259.5	259.3	258.9	258.7	258.6	258.4	258.4	258.5	258.7	259.0
10°	256.9	256.5	256.0	255.3	254.9	254.6	254.2	254.3	254.5	254.9	255.5
15°	251.9	251.2	250.5	249.5	248.9	248.3	247.9	247.9	248.3	248.8	249.7
20°	244.6	243.8	242.8	241.5	240.8	239.9	239.4	239.5	239.9	240.8	241.9
25°	235.4	234.4	233.2	231.7	230.7	229.7	229.1	229.1	229.7	230.8	232.0
30°	224.3	223.1	221.5	219.8	218.7	217.5	216.8	216.8	217.5	218.7	220.3
35°	211.2	209.9	208.1	206.3	204.9	203.6	202.8	202.8	203.6	205.0	206.7
40°	196.7	195.1	193.1	191.0	189.5	188.0	187.1	187.2	188.0	189.6	191.7
45°	180.4	178.7	176.7	174.3	172.7	171.1	170.1	170.2	171.0	172.8	175.0
50°	162.8	161.0	158.7	156.1	154.4	152.7	151.7	151.8	152.7	154.6	157.0
55°	144.0	142.0	139.6	136.9	135.1	133.2	132.3	132.3	133.3	135.4	137.8
60°	124.0	122.0	119.5	116.7	114.8	112.9	111.9	112.0	113.0	115.2	117.7
65°	103.4	101.3	98.8	96.1	94.2	92.2	91.3	91.4	92.5	94.7	97.1
70°	82.7	80.7	78.2	75.6	73.8	71.9	71.0	71.1	72.3	74.4	76.9
75°	62.9	61.1	58.8	56.4	54.8	53.0	52.1	52.2	53.2	55.2	57.6
80°	44.7	43.2	41.4	39.5	38.0	36.4	35.6	35.6	36.6	38.3	40.4
85°	29.6	28.6	27.1	25.4	24.2	22.9	22.2	22.1	22.8	24.3	26.1
90°	17.7	16.8	15.8	14.5	13.6	12.6	12.0	11.9	12.4	13.6	14.9



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**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	260.3	260.3	260.3	260.3	260.3	260.3
5°	259.3	259.4	259.7	259.9	259.9	259.7
10°	256.1	256.4	256.9	257.1	257.1	256.9
15°	250.6	251.1	251.8	252.1	252.2	251.9
20°	243.1	243.7	244.6	245.1	245.1	244.6
25°	233.6	234.2	235.3	235.8	235.9	235.4
30°	222.0	222.9	224.2	224.8	224.9	224.3
35°	208.6	209.7	211.2	211.8	212.0	211.2
40°	193.8	194.9	196.5	197.2	197.5	196.7
45°	177.4	178.7	180.2	181.1	181.3	180.4
50°	159.4	160.9	162.7	163.6	163.7	162.8
55°	140.5	142.0	143.9	144.8	144.9	144.0
60°	120.4	122.1	124.0	124.9	125.0	124.0
65°	99.9	101.4	103.4	104.3	104.4	103.4
70°	79.4	80.9	82.7	83.7	83.6	82.7
75°	59.9	61.3	63.0	63.7	63.7	62.9
80°	42.4	43.5	44.9	45.5	45.4	44.7
85°	27.8	28.8	29.9	30.3	30.2	29.6
90°	16.3	17.0	17.7	18.1	18.0	17.7

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



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

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