

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: P626449

Luminaire Tested: HLBC4LS9FSD2WE010MWR-3500K-900lm

Issue Date: 11/17/2022

**Test Information**

Test Method: LM-79-2019  
Report Number: P626449  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2209543A001)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 11/17/2022  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: HLBC4LS9FSD2WE010MWR-3500K-900lm  
Description: 4IN CANLESS LED DOWNLIGHT WITH SELECTABLE CCT AND SELECTABLE LUMEN OUTPUT  
Light Source: (1) 3500K CCT, 90 CRI LEDS  
Ballast/Driver: -

**Summary**

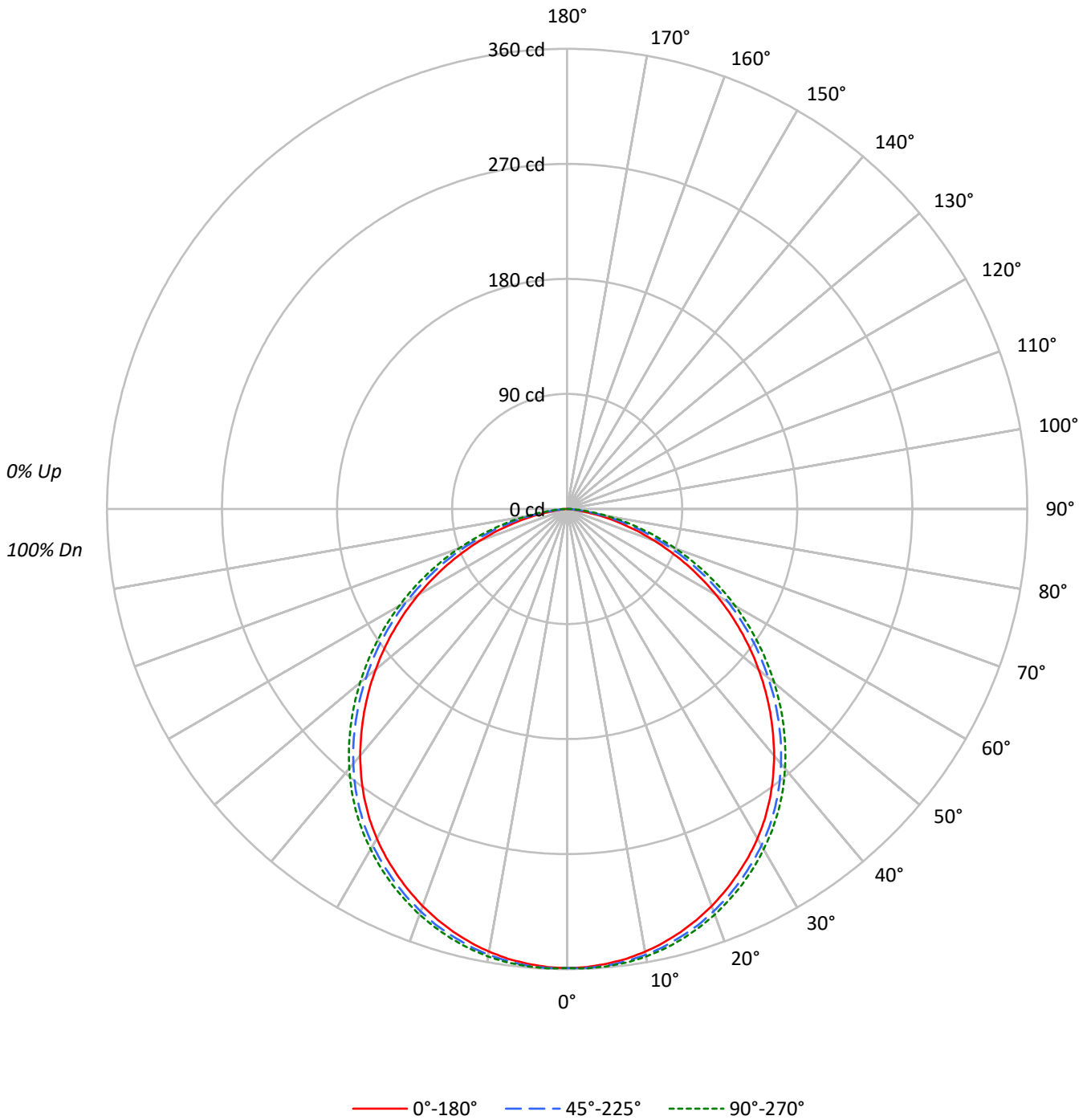
Lumens per Lamp: N/A  
Luminaire Lumens: 970.0 lumens  
Efficiency: N/A  
Efficacy: 74.6 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.27 / 1.36  
Luminous Opening: Circular (Dia: 0.33m x H: 0m)  
CIE Type: Direct

Input Watts (W): 13  
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: 25 FT



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### Luminous Intensity Polar Plot





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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	109	105	101	97	107	103	99	95	98	95	92		94	92	90		91	89	87	85
2	100	92	85	80	97	90	84	79	86	81	77		83	79	75		80	77	73	71
3	91	81	73	66	89	79	72	66	76	70	65		73	68	64		71	66	63	60
4	83	72	63	57	81	70	62	56	68	61	55		66	59	55		63	58	54	52
5	77	64	55	49	75	63	55	48	61	54	48		59	52	47		57	51	47	45
6	71	58	49	43	69	57	49	42	55	48	42		53	47	42		52	46	41	39
7	66	52	44	38	64	52	43	38	50	43	37		49	42	37		47	41	37	35
8	61	48	39	34	60	47	39	34	46	39	33		45	38	33		43	37	33	31
9	57	44	36	30	56	43	36	30	42	35	30		41	35	30		40	34	30	28
10	54	41	33	27	52	40	33	27	39	32	27		38	32	27		37	31	27	25

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

	0°	45°	90°
0°	4124	4124	4124
5°	4116	4133	4139
10°	4101	4130	4145
15°	4074	4114	4140
20°	4040	4093	4126
25°	3996	4066	4106
30°	3948	4032	4077
35°	3877	3981	4040
40°	3776	3902	3975
45°	3647	3796	3887
50°	3496	3669	3778
55°	3315	3521	3647
60°	3093	3334	3488
65°	2809	3097	3285
70°	2437	2783	3018
75°	1934	2369	2657
80°	1210	1765	2123
85°	540	804	1317

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 3887 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	34.1	3.5
10°-20°	97.6	10.1
20°-30°	147.6	15.2
30°-40°	176.9	18.2
40°-50°	179.6	18.5
50°-60°	156.2	16.1
60°-70°	111.9	11.5
70°-80°	56.0	5.8
80°-90°	10.2	1.0
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°	279.2	28.8
0°-40°	456.2	47.0
0°-60°	792.0	81.6
0°-90°	970.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	970.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	359	359	359	359	359	
5°	357	358	359	359	359	34
15°	343	344	346	347	348	97
25°	315	318	321	322	324	145
35°	277	280	284	286	288	173
45°	225	230	234	236	239	173
55°	166	171	176	179	182	148
65°	103	109	114	117	121	102
75°	44	49	53	57	60	47
85°	4	5	6	7	10	6
90°	0	0	1	1	2	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	359.2	359.2	359.2	359.2	359.2
2.5°	358.7	358.9	359.4	359.3	359.7
5°	357.1	357.8	358.6	358.7	359.1
7.5°	354.9	355.8	356.7	357.2	357.9
10°	351.7	352.8	354.2	354.6	355.5
12.5°	347.6	349.1	350.6	351.4	352.3
15°	342.7	344.5	346.1	347.1	348.3
17.5°	337.0	339.1	341.2	342.0	343.4
20°	330.6	333.0	335.0	336.3	337.7
22.5°	323.4	325.9	328.3	329.5	331.1
25°	315.4	318.3	320.9	322.3	324.1
27.5°	307.0	310.0	312.7	314.3	316.2
30°	297.8	300.9	304.1	305.5	307.5
32.5°	287.7	291.4	294.5	296.3	298.3
35°	276.6	280.5	284.0	286.0	288.2
37.5°	264.5	268.7	272.6	274.6	277.1
40°	251.9	256.3	260.3	262.6	265.2
42.5°	238.5	243.1	247.4	249.8	252.6
45°	224.6	229.5	233.8	236.5	239.4
47.5°	210.4	215.3	219.9	222.7	225.7
50°	195.7	200.8	205.4	208.5	211.5
52.5°	180.8	186.0	190.9	193.9	197.0
55°	165.6	170.8	175.9	179.0	182.2
57.5°	150.2	155.4	160.6	163.9	167.2
60°	134.7	139.9	145.2	148.5	151.9
62.5°	118.9	124.3	129.6	133.0	136.5
65°	103.4	108.8	114.0	117.4	120.9
67.5°	87.7	93.2	98.3	101.8	105.3
70°	72.6	77.9	82.9	86.4	89.9
72.5°	57.8	63.0	67.9	71.3	74.8
75°	43.6	48.7	53.4	56.6	59.9
77.5°	30.5	35.1	39.5	42.6	45.7
80°	18.3	22.5	26.7	29.6	32.1
82.5°	8.1	11.4	15.0	17.4	19.7
85°	4.1	5.1	6.1	7.4	10.0
87.5°	1.6	2.4	3.4	3.9	4.5
90°	0.1	0.1	0.7	1.3	1.8

(END OF REPORT)