

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO

Report Number: P189401

Luminaire Tested: **ML4D09NFL930-TIR50FL40-TL43R2G_X_TL44S2GX**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P189401
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P27643)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: ML4D09NFL930-TIR50FL40-TL43R2G_X_TL44S2GX
Description: ML4 RECESSED DOWNLIGHT WITH 40° FLOOD OPTIC WITH LENSED ROUND WHITE TRIM (OR SQUARE)
Light Source: CITIZEN 3000K
CLU711
Ballast/Driver: UNV-120-277 ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 919.4 lumens
Efficiency: N/A
Efficacy: 79.9 lumens/watt
Spacing Criteria (0/90/45): 0.64 / 0.64 / 0.62
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

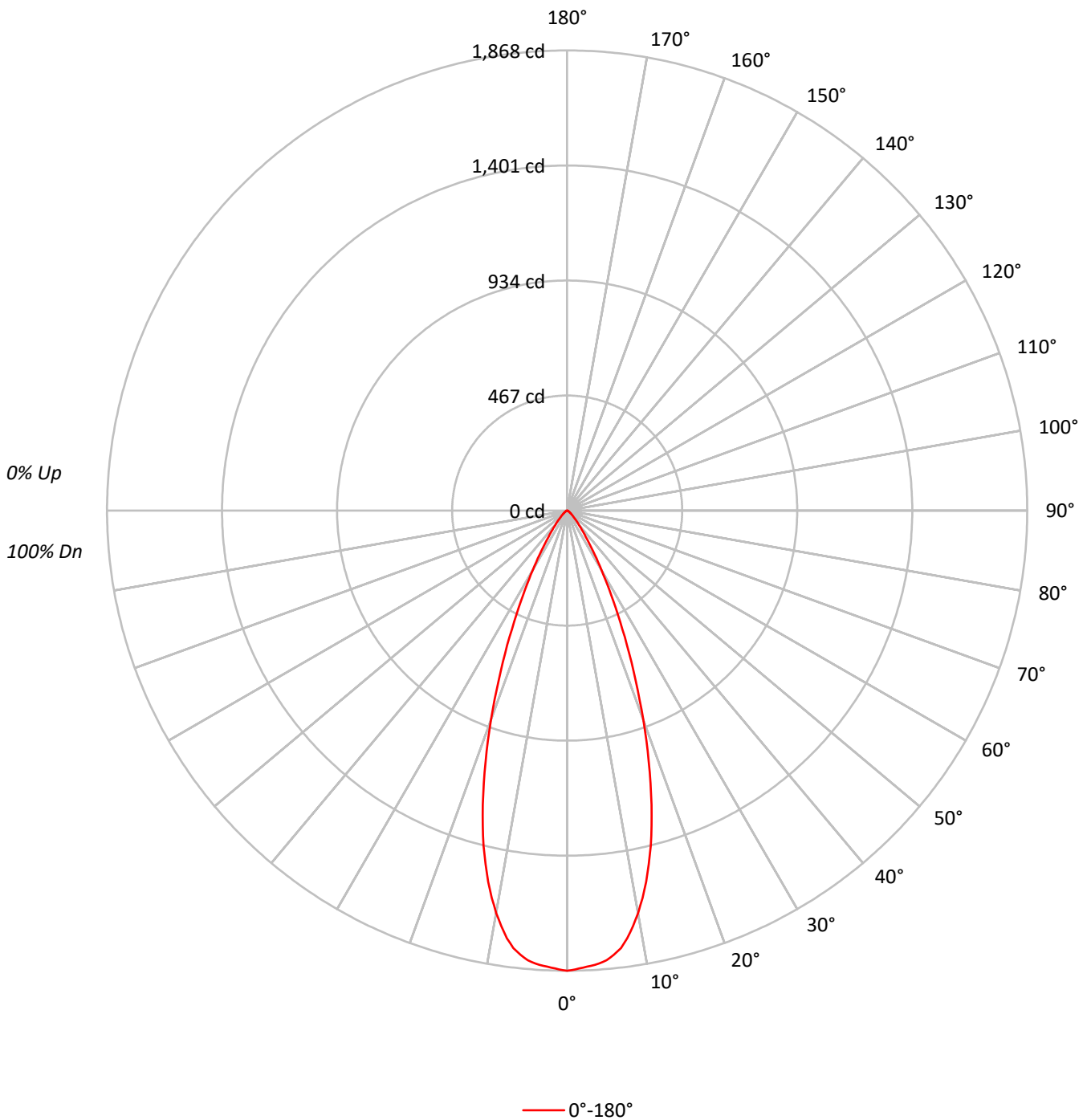
Input Watts (W): 11.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	114	112	109	107	112	109	107	106	105	104	102	102	100	99	98	97	96	95
2	109	105	101	98	107	103	100	97	100	97	95	97	95	93	94	93	91	89
3	105	99	94	91	103	97	93	90	95	91	89	93	90	87	90	88	86	85
4	100	93	89	85	98	92	88	84	90	86	83	88	85	82	87	84	82	80
5	96	89	84	80	94	88	83	79	86	82	79	84	81	78	83	80	77	76
6	92	84	79	75	91	84	79	75	82	78	75	81	77	74	80	76	74	72
7	88	80	75	71	87	80	75	71	79	74	71	77	73	71	76	73	70	69
8	85	77	72	68	84	76	71	68	75	71	68	74	70	67	73	70	67	66
9	82	73	68	65	81	73	68	65	72	68	64	71	67	64	70	67	64	63
10	79	70	65	62	78	70	65	62	69	65	62	68	64	62	68	64	61	60

AVERAGE LUMINANCE (cd/sqm):

	0°
0°	230410
5°	226845
10°	207687
15°	169071
20°	118582
25°	72186
30°	39566
35°	20629
40°	11255
45°	6611
50°	4106
55°	2710
60°	1924
65°	1430
70°	1406
75°	1382
80°	1350
85°	1415



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	169.6	18.4
10°-20°	359.1	39.1
20°-30°	246.5	26.8
30°-40°	92.1	10.0
40°-50°	31.1	3.4
50°-60°	11.9	1.3
60°-70°	5.5	0.6
70°-80°	2.8	0.3
80°-90°	0.8	0.1
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°	775.2	84.3
0°-40°	867.3	94.3
0°-60°	910.2	99.0
0°-90°	919.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	919.4	100.0

CANDELA DISTRIBUTION:

	0°	Flux
0°	1868	
5°	1832	170
15°	1324	359
25°	530	247
35°	137	92
45°	38	31
55°	13	12
65°	5	6
75°	3	3
85°	1	1
90°	0	



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CANDELA DISTRIBUTION (FULL):

0°	
0°	1868.0
1°	1863.1
2°	1856.3
3°	1850.5
4°	1843.7
5°	1832.1
6°	1813.6
7°	1789.3
8°	1753.4
9°	1707.7
10°	1658.2
11°	1601.8
12°	1540.6
13°	1473.6
14°	1402.7
15°	1324.0
16°	1242.4
17°	1156.9
18°	1072.4
19°	986.9
20°	903.4
21°	820.8
22°	743.1
23°	668.3
24°	597.4
25°	530.4
26°	470.2
27°	414.8
28°	365.2
29°	319.6
30°	277.8
32.5°	194.3
35°	137.0
37.5°	97.1
40°	69.9
42.5°	51.5
45°	37.9
47.5°	28.2
50°	21.4
52.5°	16.5
55°	12.6
57.5°	9.7
60°	7.8
62.5°	6.8
65°	4.9



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CANDELA DISTRIBUTION (continued):

	0°
67.5°	4.9
70°	3.9
72.5°	2.9
75°	2.9
77.5°	1.9
80°	1.9
82.5°	1.0
85°	1.0
87.5°	0.0
90°	0.0

(END OF REPORT)