

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: P123740

Luminaire Tested: **EL406940-TLS408SNBB**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P123740
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P13993)
Test Lab: INNOVATION CENTER-P1
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: EL406940-TLS408SNBB
Description: HALO 4-INCH RECESSED LED DOWNLIGHT
SQUARE BLACK BAFFLE, SOLITE® LENS AND SATIN NICKEL RING
Light Source: (1)SURFACE MOUNT LED, 4000K CCT, 90CRI
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 800.0 lumens
Efficiency: N/A
Efficacy: 61.5 lumens/watt
Spacing Criteria (0/90/45): 0.72 / 0.71 / 0.72
Luminous Opening: Rectangular (W 0.21' x L: 0.21' x H: 0')
CIE Type: Direct

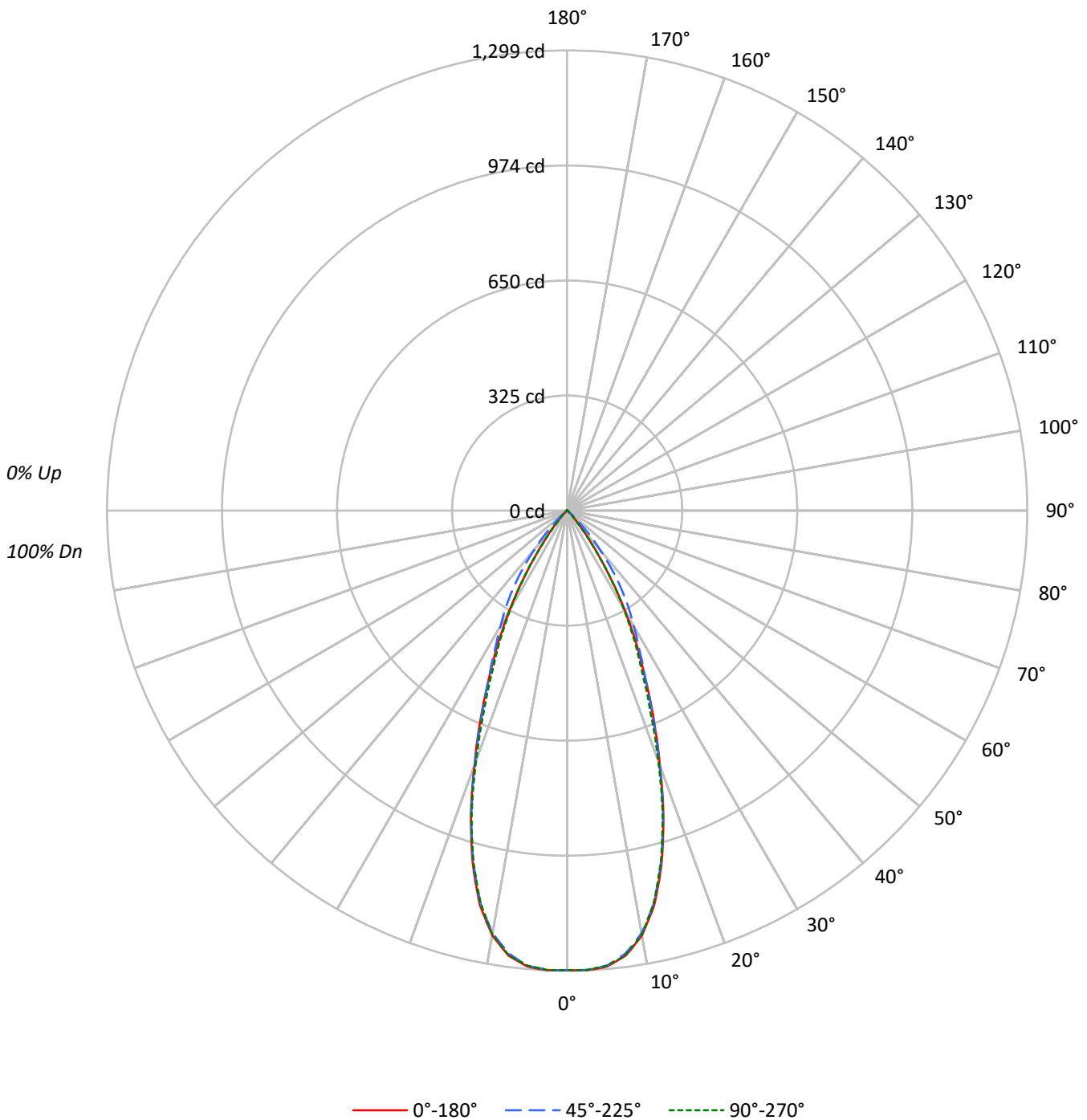
Input Watts (W): 13
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	111	109	107	112	109	107	105	105	104	102	102	100	99	98	97	96	95
2	109	105	101	98	107	103	99	97	100	97	95	97	94	93	94	92	91	89
3	104	98	94	90	102	97	93	89	94	91	88	92	89	87	90	87	85	84
4	99	93	88	84	98	92	87	83	89	85	82	87	84	81	86	83	80	79
5	95	88	82	78	94	87	82	78	85	81	77	83	80	77	82	79	76	75
6	91	83	77	74	90	82	77	73	81	76	73	79	75	72	78	75	72	71
7	87	79	73	69	86	78	73	69	77	72	69	76	71	68	74	71	68	67
8	83	75	69	65	82	74	69	65	73	68	65	72	68	65	71	67	65	63
9	80	71	66	62	79	71	65	62	70	65	62	69	65	62	68	64	61	60
10	77	68	62	59	76	67	62	59	67	62	59	66	62	59	65	61	58	57

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	321831	321831	321831
5°	321592	321019	321019
10°	306549	305063	305945
15°	264555	263040	262732
20°	202003	201369	198572
25°	142758	143086	136272
30°	93155	107388	90778
35°	46927	79503	46564
40°	16479	47105	15313
45°	6629	18659	5401
50°	2276	5942	2739
55°	1038	1038	1038
60°	595	595	1190
65°	704	704	704
70°	1740	870	870
75°	1150	1150	2300
80°	0	0	0
85°	0	0	3415



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	120.7	15.1
10°-20°	280.0	35.0
20°-30°	240.6	30.1
30°-40°	128.3	16.0
40°-50°	27.1	3.4
50°-60°	2.0	0.3
60°-70°	0.8	0.1
70°-80°	0.4	0.1
80°-90°	0.0	0.0
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°	641.4	80.2
0°-40°	769.7	96.2
0°-60°	798.8	99.8
0°-90°	800.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	800.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1298	1298	1298	1298	1298	
5°	1292	1291	1290	1291	1290	121
15°	1030	1026	1024	1024	1023	281
25°	522	523	523	507	498	240
35°	155	199	263	198	154	102
45°	19	25	53	23	15	16
55°	2	2	2	2	2	2
65°	1	1	1	1	1	1
75°	1	1	1	1	2	1
85°	0	0	0	0	1	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1297.7	1297.7	1297.7	1297.7	1297.7	1297.7	1297.7	1297.7	1297.7	1297.7	1297.7
2.5°	1298.9	1298.9	1300.1	1300.1	1298.9	1297.7	1300.1	1297.7	1297.7	1297.7	1297.7
5°	1291.8	1290.6	1291.8	1290.6	1289.5	1293.0	1291.8	1290.6	1288.3	1289.5	1290.6
7.5°	1267.0	1264.6	1264.6	1263.4	1263.4	1262.3	1263.4	1261.1	1262.3	1261.1	1262.3
10°	1217.3	1216.1	1216.1	1214.9	1214.9	1212.6	1213.8	1213.8	1210.2	1211.4	1211.4
12.5°	1139.2	1135.7	1135.7	1135.7	1135.7	1134.5	1134.5	1134.5	1132.1	1133.3	1133.3
15°	1030.4	1028.0	1026.8	1029.2	1026.8	1025.7	1025.7	1026.8	1026.8	1024.5	1026.8
17.5°	903.8	902.6	903.8	902.6	902.6	901.4	901.4	900.3	900.3	900.3	899.1
20°	765.4	767.8	766.6	765.4	765.4	765.4	766.6	764.2	764.2	763.0	760.7
22.5°	638.8	635.3	634.1	636.5	635.3	635.3	635.3	634.1	632.9	631.7	629.4
25°	521.7	520.5	519.3	521.7	521.7	524.1	525.3	526.4	525.3	522.9	520.5
27.5°	421.1	421.1	423.5	428.2	431.8	436.5	438.9	440.1	441.3	440.1	435.3
30°	325.3	328.9	333.6	340.7	349.0	359.6	366.7	371.5	373.8	375.0	375.0
32.5°	235.4	236.6	244.9	255.5	267.4	283.9	299.3	311.1	317.0	319.4	319.4
35°	155.0	157.3	163.3	175.1	190.5	208.2	226.0	246.1	260.3	262.6	257.9
37.5°	93.5	94.6	101.7	111.2	123.0	140.8	162.1	181.0	197.6	203.5	198.7
40°	50.9	52.1	56.8	62.7	71.0	85.2	104.1	121.8	139.6	145.5	139.6
42.5°	29.6	29.6	31.9	34.3	40.2	48.5	61.5	75.7	89.9	95.8	88.7
45°	18.9	16.6	15.4	18.9	23.7	26.0	34.3	42.6	50.9	53.2	49.7
47.5°	8.3	9.5	11.8	11.8	13.0	15.4	18.9	23.7	27.2	29.6	24.8
50°	5.9	7.1	7.1	7.1	7.1	9.5	9.5	13.0	14.2	15.4	14.2
52.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
55°	2.4	1.2	1.2	1.2	1.2	2.4	2.4	2.4	3.5	2.4	3.5
57.5°	1.2	1.2	1.2	3.5	1.2	2.4	1.2	2.4	2.4	2.4	1.2
60°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65°	1.2	1.2	1.2	1.2	1.2	1.2	2.4	1.2	1.2	1.2	1.2
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70°	2.4	2.4	1.2	1.2	1.2	1.2	2.4	2.4	2.4	1.2	3.5
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	1.2	0.0	1.2	0.0	0.0	1.2	0.0	1.2	0.0	1.2	1.2
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
87.5°	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0
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):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1297.7	1297.7	1297.7	1297.7	1297.7	1297.7	1297.7	1297.7
2.5°	1296.6	1297.7	1295.4	1297.7	1296.6	1296.6	1296.6	1297.7
5°	1289.5	1289.5	1289.5	1291.8	1289.5	1290.6	1288.3	1289.5
7.5°	1261.1	1262.3	1262.3	1264.6	1264.6	1263.4	1264.6	1265.8
10°	1210.2	1210.2	1210.2	1212.6	1211.4	1212.6	1214.9	1214.9
12.5°	1132.1	1133.3	1130.9	1132.1	1129.8	1132.1	1130.9	1132.1
15°	1024.5	1024.5	1023.3	1024.5	1023.3	1023.3	1022.1	1023.3
17.5°	896.7	896.7	896.7	895.5	894.3	895.5	894.3	896.7
20°	759.5	757.1	754.8	757.1	754.8	752.4	750.0	752.4
22.5°	625.8	623.4	619.9	618.7	616.3	614.0	614.0	614.0
25°	517.0	513.4	507.5	506.3	502.8	500.4	500.4	498.0
27.5°	435.3	430.6	427.1	422.3	416.4	411.7	407.0	407.0
30°	371.5	365.5	356.1	345.4	334.8	325.3	320.6	317.0
32.5°	311.1	299.3	283.9	267.4	253.2	241.3	233.1	233.1
35°	246.1	229.5	207.0	189.3	171.5	160.9	155.0	153.8
37.5°	181.0	160.9	139.6	120.7	106.5	97.0	91.1	89.9
40°	121.8	101.7	82.8	67.4	58.0	52.1	48.5	47.3
42.5°	75.7	58.0	46.1	37.9	35.5	28.4	26.0	27.2
45°	40.2	31.9	24.8	21.3	16.6	16.6	15.4	15.4
47.5°	21.3	17.7	14.2	10.6	9.5	9.5	8.3	10.6
50°	11.8	9.5	8.3	5.9	5.9	5.9	5.9	7.1
52.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55°	2.4	2.4	1.2	2.4	1.2	2.4	1.2	2.4
57.5°	1.2	3.5	1.2	1.2	1.2	1.2	1.2	3.5
60°	1.2	2.4	1.2	1.2	0.0	1.2	1.2	2.4
62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65°	2.4	2.4	1.2	1.2	1.2	0.0	2.4	1.2
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70°	1.2	2.4	3.5	3.5	1.2	2.4	1.2	1.2
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	1.2	1.2	0.0	1.2	1.2	2.4
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)