

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: P123745

Luminaire Tested: **EL406927-TLS408WHBB**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P123745
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P13995)
Test Lab: INNOVATION CENTER-P1
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: EL406927-TLS408WHBB
Description: HALO 4-INCH RECESSED LED DOWNLIGHT
SQUARE BLACK BAFFLE, SOLITE® LENS AND WHITE RING
Light Source: (1)SURFACE MOUNT LED, 2700K CCT, 90CRI
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 640.0 lumens
Efficiency: N/A
Efficacy: 49.2 lumens/watt
Spacing Criteria (0/90/45): 0.69 / 0.69 / 0.71
Luminous Opening: Rectangular (W 0.17' x L: 0.17' x H: 0')
CIE Type: Direct

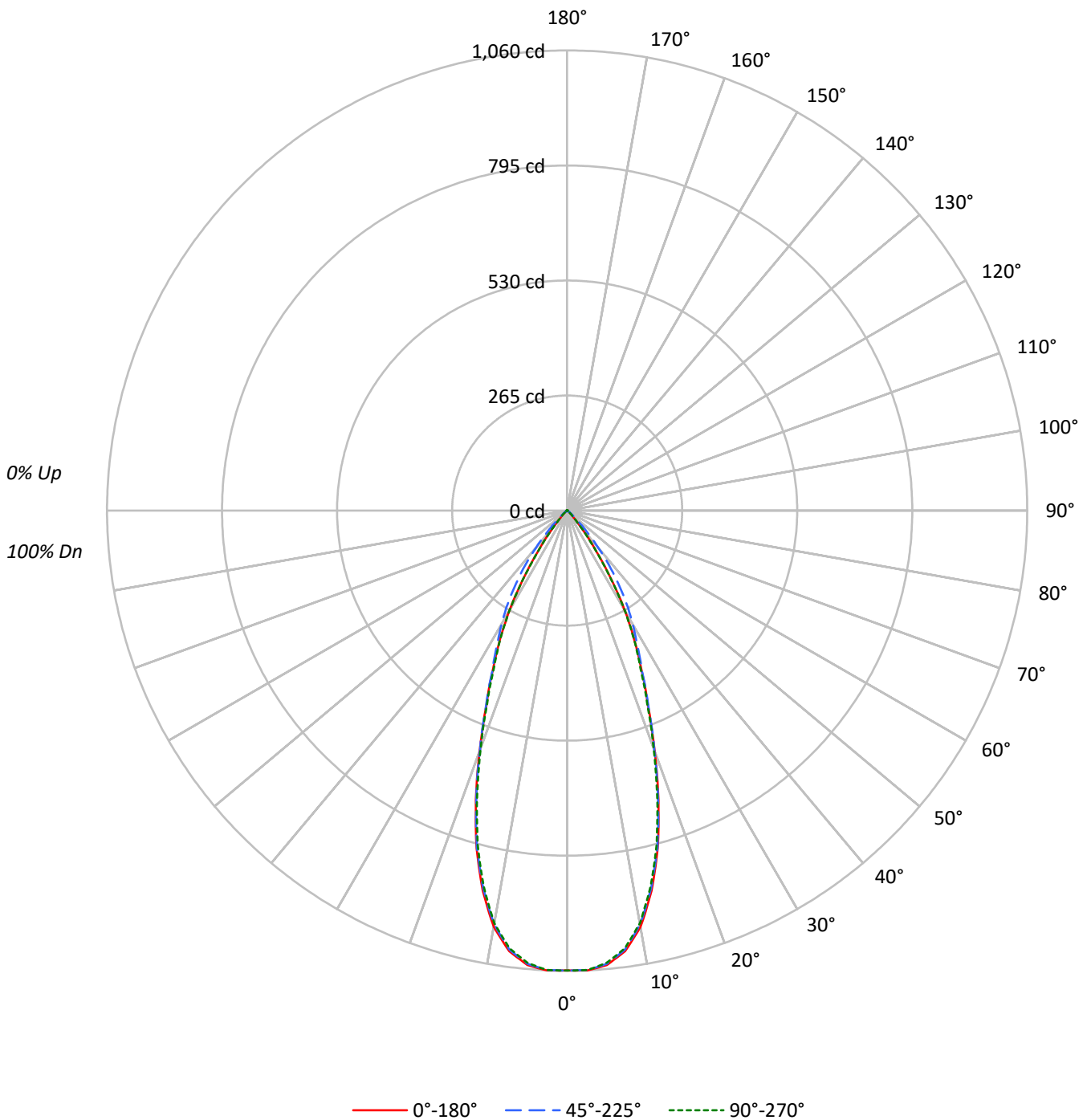
Input Watts (W): 13
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	410517	410517	410517
5°	408701	407573	406834
10°	383089	380807	379666
15°	323302	322139	319411
20°	242885	242473	240081
25°	173503	174743	170211
30°	118618	134994	118170
35°	60645	96691	59273
40°	22915	56098	21448
45°	8439	23235	8987
50°	4039	8138	3496
55°	2635	3243	1959
60°	1472	4495	2247
65°	0	0	0
70°	2153	1133	1133
75°	0	0	0
80°	2232	2232	0
85°	0	0	4446



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	97.6	15.2
10°-20°	218.9	34.2
20°-30°	189.3	29.6
30°-40°	104.4	16.3
40°-50°	23.6	3.7
50°-60°	4.3	0.7
60°-70°	1.1	0.2
70°-80°	0.2	0.0
80°-90°	0.6	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°	505.8	79.0
0°-40°	610.2	95.3
0°-60°	638.1	99.7
0°-90°	640.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	640.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1059	1059	1059	1059	1059	
5°	1051	1050	1048	1047	1046	98
15°	806	805	803	800	796	220
25°	406	407	409	403	398	187
35°	128	161	204	161	125	85
45°	15	22	42	23	16	14
55°	4	4	5	4	3	4
65°	0	0	0	0	0	1
75°	0	0	0	0	0	0
85°	0	0	0	0	1	1
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°	1059.4	1059.4	1059.4	1059.4	1059.4	1059.4	1059.4	1059.4	1059.4	1059.4	1059.4
2.5°	1060.4	1060.4	1060.4	1061.3	1061.3	1061.3	1060.4	1059.4	1060.4	1059.4	1059.4
5°	1050.7	1050.7	1051.7	1050.7	1050.7	1049.8	1048.8	1048.8	1047.8	1047.8	1046.9
7.5°	1023.7	1023.7	1023.7	1023.7	1024.7	1021.8	1018.9	1020.8	1021.8	1019.9	1020.8
10°	973.6	972.6	972.6	973.6	971.7	972.6	970.7	968.8	967.8	967.8	967.8
12.5°	897.5	897.5	896.5	895.5	895.5	894.6	893.6	893.6	892.6	891.7	890.7
15°	805.9	804.9	805.9	804.9	804.9	804.9	803.9	803.0	803.0	803.0	801.1
17.5°	698.9	696.9	698.9	696.9	697.9	697.9	697.9	696.9	696.9	696.0	696.0
20°	589.0	588.0	589.0	589.0	589.0	589.9	589.0	589.0	589.9	588.0	587.1
22.5°	486.8	486.8	486.8	487.8	488.7	489.7	490.7	490.7	490.7	489.7	488.7
25°	405.8	402.9	403.9	403.9	406.8	406.8	407.8	407.8	409.7	408.7	407.8
27.5°	334.5	335.5	335.5	341.2	344.1	348.0	349.0	349.9	349.9	349.9	349.0
30°	265.1	267.0	268.9	275.7	282.4	288.2	295.0	299.8	300.8	301.7	300.8
32.5°	194.7	195.7	201.5	209.2	218.8	229.4	240.0	247.7	254.5	255.5	252.6
35°	128.2	129.2	135.9	143.6	155.2	167.7	181.2	193.8	202.4	204.4	202.4
37.5°	81.9	82.9	86.8	94.5	104.1	116.6	133.0	146.5	155.2	159.1	154.2
40°	45.3	46.3	48.2	55.9	62.7	72.3	84.8	98.3	108.0	110.9	108.0
42.5°	24.1	26.0	27.0	29.9	34.7	41.5	50.1	59.8	67.5	71.3	68.4
45°	15.4	15.4	16.4	18.3	20.2	24.1	28.9	35.7	39.5	42.4	41.5
47.5°	9.6	9.6	11.6	11.6	13.5	14.5	18.3	21.2	22.2	23.1	23.1
50°	6.7	5.8	6.7	6.7	7.7	7.7	9.6	11.6	11.6	13.5	12.5
52.5°	4.8	5.8	4.8	5.8	5.8	6.7	5.8	6.7	7.7	8.7	8.7
55°	3.9	3.9	3.9	4.8	3.9	3.9	5.8	3.9	4.8	4.8	5.8
57.5°	2.9	2.9	1.9	1.9	2.9	1.9	3.9	1.9	2.9	2.9	2.9
60°	1.9	1.9	2.9	2.9	1.9	2.9	1.9	1.9	1.9	5.8	2.9
62.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.9	1.9	1.9	2.9
65°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	1.0	1.0	1.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
70°	1.9	1.0	0.0	0.0	0.0	1.0	1.0	1.0	0.0	1.0	1.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.0
75°	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0
80°	1.0	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	1.9	1.0	1.0	0.0	1.9	1.0	1.0	1.0	1.0	1.0	1.0
85°	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	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°	1059.4	1059.4	1059.4	1059.4	1059.4	1059.4	1059.4	1059.4
2.5°	1058.4	1059.4	1059.4	1058.4	1060.4	1058.4	1059.4	1059.4
5°	1046.9	1047.8	1047.8	1046.9	1046.9	1046.9	1046.9	1045.9
7.5°	1018.9	1018.9	1018.0	1017.0	1019.9	1018.0	1017.0	1017.0
10°	967.8	967.8	966.9	966.9	966.9	964.9	964.9	964.9
12.5°	892.6	893.6	890.7	889.7	889.7	889.7	889.7	886.9
15°	803.9	802.0	800.1	799.1	798.2	798.2	798.2	796.2
17.5°	696.0	695.0	693.1	691.2	690.2	690.2	689.2	689.2
20°	587.1	585.1	584.2	584.2	582.2	581.3	580.3	582.2
22.5°	488.7	487.8	485.8	482.9	482.9	482.0	481.0	482.0
25°	407.8	405.8	403.9	402.0	401.0	400.0	398.1	398.1
27.5°	349.0	347.0	345.1	342.2	338.4	335.5	333.5	332.6
30°	299.8	295.0	288.2	281.5	274.7	268.0	265.1	264.1
32.5°	247.7	241.0	230.4	219.8	208.2	200.5	194.7	192.8
35°	192.8	182.2	167.7	155.2	142.7	134.0	128.2	125.3
37.5°	145.6	132.1	117.6	104.1	92.5	84.8	80.0	78.1
40°	99.3	86.8	73.3	61.7	54.9	48.2	46.3	42.4
42.5°	61.7	51.1	41.5	33.7	29.9	26.0	26.0	24.1
45°	37.6	30.8	25.1	20.2	18.3	16.4	15.4	16.4
47.5°	22.2	17.4	16.4	13.5	12.5	10.6	10.6	12.5
50°	11.6	9.6	7.7	7.7	7.7	6.7	6.7	5.8
52.5°	7.7	8.7	6.7	6.7	7.7	5.8	4.8	4.8
55°	4.8	4.8	3.9	4.8	3.9	3.9	3.9	2.9
57.5°	1.9	2.9	2.9	3.9	4.8	4.8	2.9	1.9
60°	1.9	2.9	1.9	2.9	2.9	2.9	2.9	2.9
62.5°	1.0	1.9	1.9	2.9	2.9	1.0	1.9	1.9
65°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	1.0	1.0	1.9	1.0	1.9	1.0	1.0	1.0
70°	0.0	0.0	1.9	0.0	0.0	1.0	0.0	1.0
72.5°	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0
82.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
85°	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0
87.5°	0.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)