

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: P123750

Luminaire Tested: **EL406930-TLS408WHWB**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P123750  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P13996)  
Test Lab: INNOVATION CENTER-P1  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: EL406930-TLS408WHWB  
Description: HALO 4-INCH RECESSED LED DOWNLIGHT  
SQUARE WHITE BAFFLE, SOLITE® LENS AND WHITE RING  
Light Source: (1)SURFACE MOUNT LED, 3000K CCT, 90CRI  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: 1000 (1 lamp)  
Luminaire Lumens: 740.0 lumens  
Efficiency: 74.0%  
Efficacy: 56.9 lumens/watt  
Spacing Criteria (0/90/45): 0.71 / 0.69 / 0.73  
Luminous Opening: Rectangular (W 0.17' x L: 0.17' x H: 0')  
CIE Type: Direct

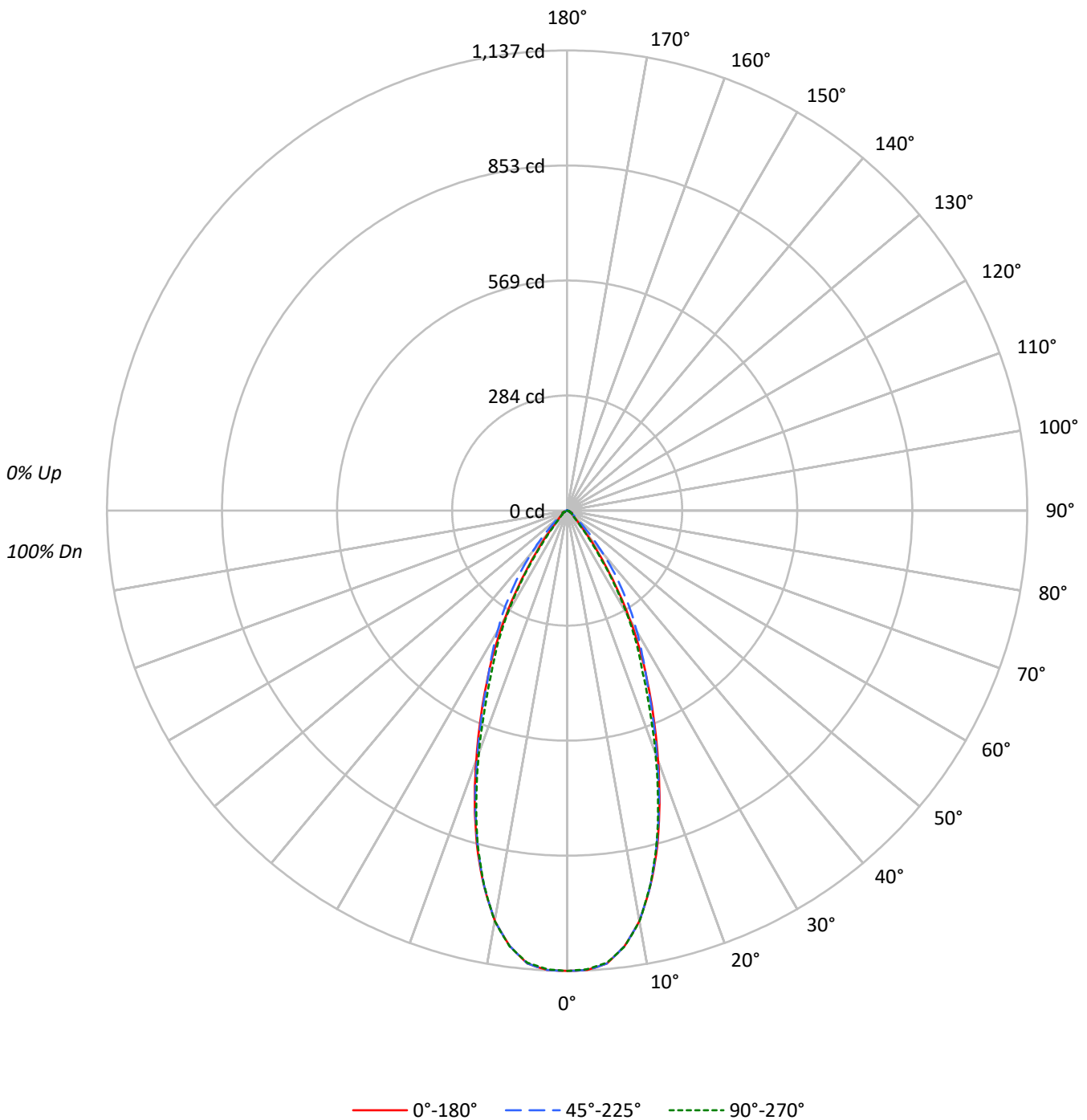
Input Watts (W): 13  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P123750

CATALOG NUMBER: EL406930-TLS408WHWB

### Luminous Intensity Polar Plot





TEST NUMBER: P123750

CATALOG NUMBER: EL406930-TLS408WHWB

**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	50	30	10	0	
RCR																						
0	88	88	88	88	86	86	86	86	82	82	82	79	79	79	76	76	76	74				
1	84	82	80	78	82	80	79	77	77	76	75	75	74	73	72	71	71	69				
2	80	76	73	71	78	75	72	70	73	71	69	71	69	67	68	67	66	65				
3	76	71	68	65	75	70	67	64	68	66	63	67	64	62	65	63	61	60				
4	72	67	63	60	71	66	62	60	65	61	59	63	60	58	62	59	58	56				
5	69	63	59	56	68	62	58	55	61	58	55	60	57	54	59	56	54	53				
6	66	59	55	52	65	59	55	52	58	54	52	57	54	51	56	53	51	50				
7	63	56	52	49	62	56	52	49	55	51	48	54	51	48	53	50	48	47				
8	60	53	49	46	59	53	49	46	52	48	46	51	48	46	51	48	45	44				
9	57	51	46	44	57	50	46	43	49	46	43	49	46	43	48	45	43	42				
10	55	48	44	41	54	48	44	41	47	44	41	47	43	41	46	43	41	40				

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

	0°	45°	90°
0°	440742	440742	440742
5°	437057	437057	436241
10°	405045	405045	405439
15°	344965	343280	342438
20°	270761	267709	262885
25°	201508	199242	188810
30°	137411	153519	132668
35°	75641	110694	69633
40°	35915	68593	29440
45°	16824	33648	13919
50°	11514	17241	10188
55°	9999	11417	9999
60°	4960	5735	4107
65°	11645	8711	7794
70°	7251	7251	7251
75°	6288	4791	6288
80°	2455	2455	2455
85°	4891	9337	4891



TEST NUMBER: P123750

CATALOG NUMBER: EL406930-TLS408WHWB

**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	104.2	14.1	10.4
10°-20°	235.3	31.8	23.5
20°-30°	214.4	29.0	21.4
30°-40°	122.0	16.5	12.2
40°-50°	36.4	4.9	3.6
50°-60°	13.4	1.8	1.3
60°-70°	8.7	1.2	0.9
70°-80°	4.6	0.6	0.5
80°-90°	0.9	0.1	0.1
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°	554.0	74.9	55.4
0°-40°	675.9	91.3	67.6
0°-60°	725.8	98.1	72.6
0°-90°	740.0	100.0	74.0
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°	740.0	100.0	74.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1137	1137	1137	1137	1137	
5°	1124	1124	1124	1123	1122	104
15°	860	859	856	856	854	236
25°	471	472	466	453	442	216
35°	160	191	234	186	147	105
45°	31	42	61	33	25	28
55°	15	16	17	15	15	13
65°	13	11	10	11	8	10
75°	4	5	3	4	4	4
85°	1	1	2	0	1	1
90°	0	0	0	0	0	



TEST NUMBER: P123750

CATALOG NUMBER: EL406930-TLS408WHWB

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1137.4	1137.4	1137.4	1137.4	1137.4	1137.4	1137.4	1137.4	1137.4	1137.4	1137.4
2.5°	1136.3	1137.4	1138.5	1137.4	1138.5	1136.3	1137.4	1136.3	1137.4	1136.3	1137.4
5°	1123.6	1121.5	1123.6	1123.6	1124.7	1122.6	1122.6	1121.5	1124.7	1123.6	1123.6
7.5°	1085.5	1086.6	1086.6	1085.5	1086.6	1085.5	1087.6	1088.7	1088.7	1085.5	1086.6
10°	1029.4	1030.4	1030.4	1030.4	1031.5	1030.4	1031.5	1030.4	1030.4	1029.4	1030.4
12.5°	950.0	950.0	951.0	952.1	948.9	948.9	948.9	948.9	948.9	948.9	950.0
15°	859.9	859.9	861.0	858.9	858.9	858.9	857.8	857.8	857.8	855.7	855.7
17.5°	759.3	759.3	760.4	759.3	759.3	756.2	757.2	757.2	755.1	755.1	751.9
20°	656.6	656.6	656.6	655.5	655.5	654.5	653.4	653.4	652.4	649.2	649.2
22.5°	559.2	560.2	560.2	560.2	559.2	558.1	557.1	554.9	553.9	552.8	550.7
25°	471.3	471.3	473.4	472.3	472.3	471.3	471.3	470.2	469.2	466.0	463.9
27.5°	390.8	391.8	395.0	397.1	399.3	401.4	402.4	402.4	400.3	401.4	399.3
30°	307.1	308.2	312.4	317.7	327.2	331.5	338.9	342.1	343.1	343.1	341.0
32.5°	230.9	233.0	237.2	244.6	254.2	263.7	275.3	284.9	288.1	290.2	289.1
35°	159.9	162.0	168.4	175.8	185.3	197.0	209.7	221.3	229.8	234.0	231.9
37.5°	110.1	109.1	113.3	120.7	130.3	141.9	155.7	169.4	180.0	184.3	180.0
40°	71.0	71.0	74.1	78.4	87.9	97.4	110.1	122.8	133.4	135.6	131.3
42.5°	46.6	47.7	50.8	54.0	59.3	65.7	74.1	84.7	94.3	96.4	90.0
45°	30.7	32.8	33.9	36.0	40.2	43.4	50.8	57.2	60.4	61.4	57.2
47.5°	25.4	26.5	25.4	27.5	28.6	31.8	33.9	39.2	44.5	41.3	39.2
50°	19.1	19.1	20.1	19.1	21.2	22.2	25.4	27.5	27.5	28.6	25.4
52.5°	15.9	15.9	15.9	16.9	16.9	18.0	18.0	19.1	20.1	21.2	18.0
55°	14.8	15.9	14.8	15.9	15.9	15.9	15.9	16.9	16.9	16.9	15.9
57.5°	12.7	13.8	15.9	12.7	13.8	13.8	13.8	12.7	13.8	13.8	13.8
60°	6.4	6.4	8.5	6.4	7.4	6.4	7.4	6.4	7.4	7.4	7.4
62.5°	10.6	10.6	10.6	9.5	10.6	10.6	10.6	11.6	10.6	11.6	9.5
65°	12.7	10.6	10.6	9.5	10.6	10.6	10.6	9.5	9.5	9.5	10.6
67.5°	9.5	7.4	8.5	8.5	7.4	8.5	8.5	7.4	8.5	7.4	7.4
70°	6.4	5.3	5.3	5.3	7.4	6.4	6.4	6.4	6.4	6.4	7.4
72.5°	5.3	5.3	6.4	5.3	6.4	7.4	6.4	6.4	5.3	6.4	5.3
75°	4.2	4.2	4.2	4.2	5.3	4.2	3.2	4.2	3.2	3.2	4.2
77.5°	3.2	3.2	4.2	4.2	3.2	3.2	3.2	3.2	3.2	3.2	4.2
80°	1.1	1.1	2.1	1.1	2.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	1.1	1.1	2.1	1.1	1.1	1.1	1.1	2.1	1.1	2.1	1.1
85°	1.1	1.1	2.1	1.1	1.1	0.0	2.1	1.1	1.1	2.1	1.1
87.5°	0.0	0.0	0.0	0.0	0.0	1.1	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



TEST NUMBER: P123750

CATALOG NUMBER: EL406930-TLS408WHWB

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1137.4	1137.4	1137.4	1137.4	1137.4	1137.4	1137.4	1137.4
2.5°	1136.3	1136.3	1136.3	1135.3	1135.3	1136.3	1137.4	1134.2
5°	1122.6	1121.5	1123.6	1122.6	1122.6	1122.6	1121.5	1121.5
7.5°	1086.6	1084.5	1086.6	1087.6	1087.6	1086.6	1087.6	1086.6
10°	1030.4	1030.4	1030.4	1030.4	1029.4	1030.4	1030.4	1030.4
12.5°	948.9	948.9	948.9	947.8	950.0	947.8	950.0	947.8
15°	855.7	854.6	855.7	855.7	854.6	854.6	853.6	853.6
17.5°	751.9	749.8	749.8	748.7	748.7	746.6	747.7	746.6
20°	646.0	645.0	642.8	640.7	639.7	637.5	638.6	637.5
22.5°	547.5	542.2	542.2	538.0	534.8	532.7	532.7	532.7
25°	461.7	457.5	455.4	451.2	450.1	446.9	444.8	441.6
27.5°	397.1	392.9	390.8	385.5	381.3	377.0	372.8	371.7
30°	338.9	333.6	326.2	318.8	309.2	301.8	297.6	296.5
32.5°	283.8	274.3	262.6	249.9	236.2	227.7	223.5	220.3
35°	222.4	209.7	193.8	177.9	165.2	155.7	149.3	147.2
37.5°	168.4	151.4	136.6	121.8	109.1	100.6	95.3	93.2
40°	117.6	101.7	86.8	75.2	68.8	60.4	58.2	58.2
42.5°	79.4	65.7	56.1	48.7	43.4	40.2	39.2	38.1
45°	50.8	43.4	36.0	30.7	29.7	27.5	25.4	25.4
47.5°	34.9	29.7	28.6	25.4	21.2	22.2	21.2	21.2
50°	24.4	21.2	20.1	18.0	18.0	16.9	16.9	16.9
52.5°	18.0	15.9	16.9	16.9	14.8	13.8	14.8	13.8
55°	15.9	15.9	15.9	14.8	13.8	14.8	13.8	14.8
57.5°	13.8	13.8	13.8	12.7	13.8	12.7	12.7	12.7
60°	7.4	7.4	6.4	7.4	6.4	5.3	6.4	5.3
62.5°	11.6	9.5	10.6	9.5	10.6	10.6	12.7	11.6
65°	9.5	10.6	10.6	10.6	9.5	9.5	9.5	8.5
67.5°	8.5	6.4	8.5	7.4	8.5	7.4	7.4	8.5
70°	5.3	5.3	6.4	6.4	5.3	7.4	6.4	6.4
72.5°	6.4	6.4	6.4	6.4	5.3	5.3	9.5	6.4
75°	4.2	3.2	4.2	4.2	4.2	4.2	3.2	4.2
77.5°	4.2	3.2	3.2	4.2	3.2	3.2	3.2	4.2
80°	2.1	1.1	2.1	2.1	1.1	2.1	1.1	1.1
82.5°	2.1	1.1	1.1	1.1	1.1	2.1	1.1	1.1
85°	1.1	1.1	0.0	0.0	0.0	0.0	1.1	1.1
87.5°	0.0	0.0	1.1	0.0	0.0	0.0	1.1	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)