

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: P358832

Luminaire Tested: **HL36SAR13WFLD2WED010TLS3R2GMW-TILTED 30D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P358832  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1908-462-28)  
Test Lab: INNOVATION CENTER (G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: HL36SAR13WFLD2WED010TLS3R2GMW-TILTED 30D  
Description: HL3 13W Square tilted 30D, Wide Flood optic with reflector trim, Lensed, Matte White  
Light Source: (1) 3100K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 910.0 lumens  
Efficiency: N/A  
Efficacy: 63.2 lumens/watt  
Spacing Criteria (0/90/45): 1.57 / 0.6 / 1.19  
Luminous Opening: Rectangular (W 0.27' x L: 0.27' x H: 0')  
CIE Type: Direct

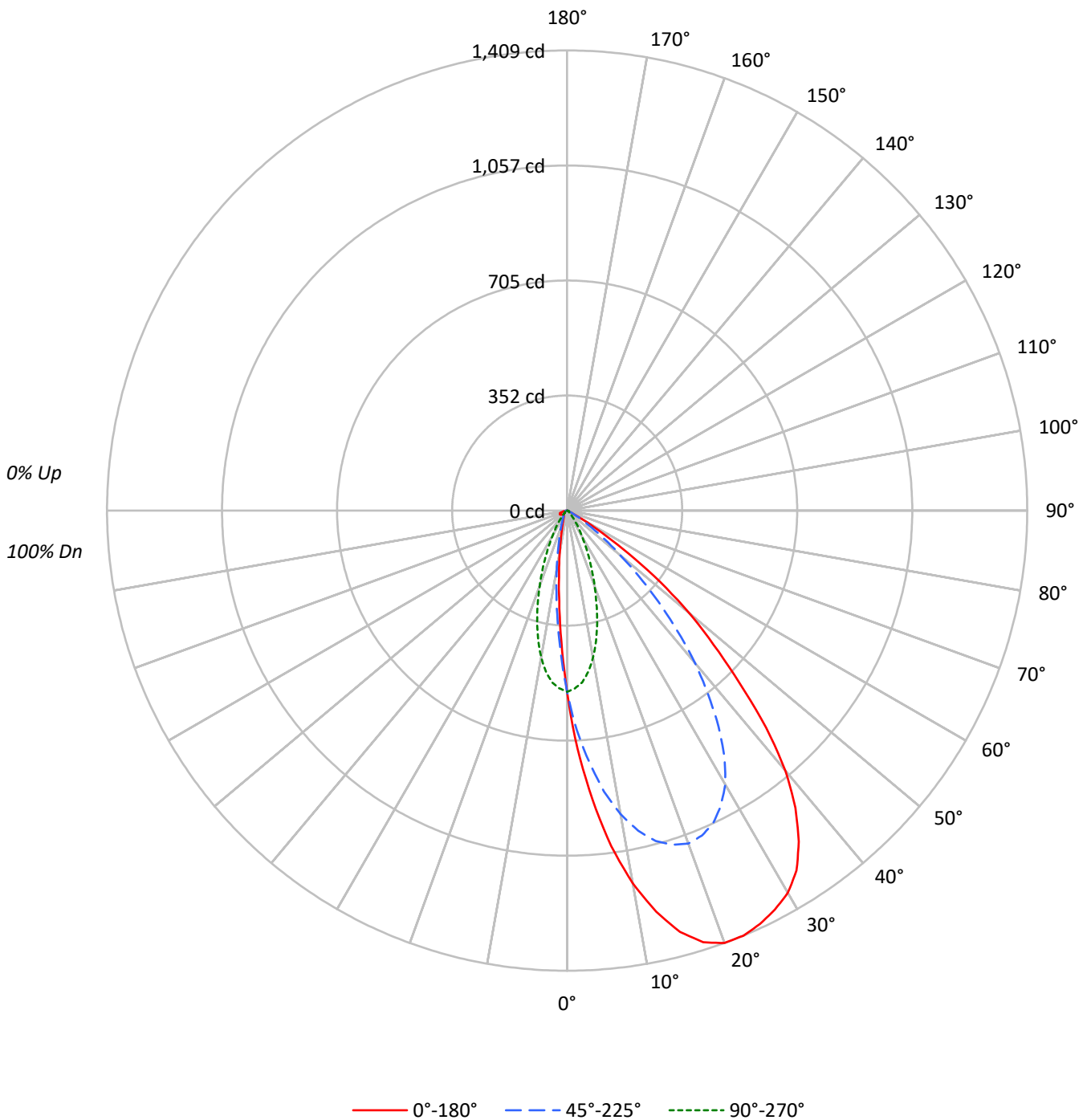
Input Watts (W): 14.4  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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					100			
1	112	109	106	103	110	107	104	102	103	100	98	99	97	96	95	94	93	91					91			
2	105	99	94	90	103	97	93	89	94	90	87	91	88	85	88	86	84	82					82			
3	98	91	84	80	96	89	83	79	86	82	78	84	80	76	81	78	75	73					73			
4	92	83	76	71	90	82	75	70	79	74	70	77	72	69	75	71	68	66					66			
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	69	65	61	60					60			
6	80	70	63	57	79	69	62	57	67	61	57	66	60	56	64	60	56	54					54			
7	75	64	57	52	74	64	57	52	62	56	52	61	55	51	60	55	51	49					49			
8	71	60	52	48	70	59	52	47	58	52	47	57	51	47	56	51	47	45					45			
9	67	55	48	44	65	55	48	44	54	48	43	53	47	43	52	47	43	41					41			
10	63	52	45	40	62	51	45	40	50	44	40	49	44	40	48	43	40	38					38			

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

	0°	90°	180°
0°	81415	81415	81415
5°	130720	77778	40804
10°	172673	68053	18909
15°	202923	54039	9434
20°	220020	38338	5794
25°	226165	25340	4048
30°	228992	15386	3304
35°	221530	9118	2992
40°	199265	5153	3199
45°	154548	2885	3653
50°	111021	1895	4452
55°	58307	1893	5680
60°	17140	1908	7073
65°	2570	1944	8681
70°	1201	1974	9954
75°	1077	2098	8391
80°	761	1606	7859
85°	1515	1515	7745



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	53.1	5.8
10°-20°	155.0	17.0
20°-30°	225.2	24.7
30°-40°	232.4	25.5
40°-50°	160.5	17.6
50°-60°	62.0	6.8
60°-70°	13.4	1.5
70°-80°	6.6	0.7
80°-90°	2.0	0.2
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°	433.2	47.6
0°-40°	665.6	73.1
0°-60°	888.1	97.6
0°-90°	910.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	910.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	555	555	555	555	555	
5°	887	772	528	335	277	93
15°	1336	1048	356	95	62	377
25°	1397	1057	156	34	25	643
35°	1237	809	51	18	17	764
45°	745	396	14	14	18	578
55°	228	94	7	15	22	217
65°	7	11	6	15	25	15
75°	2	2	4	10	15	2
85°	1	1	1	3	5	1
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	45°	67.5°	90°	112.5°	135°
0°	554.8	554.8	554.8	554.8	554.8	554.8	554.8	554.8	554.8	554.8	554.8
2.5°	729.9	723.4	719.7	717.9	713.2	705.8	672.5	611.3	544.6	483.5	438.1
5°	887.4	879.0	881.8	867.9	854.9	854.0	771.6	654.9	528.0	415.9	335.3
7.5°	1036.5	1027.2	1022.6	1014.3	999.4	985.6	867.9	687.3	497.4	343.6	251.0
10°	1158.8	1153.2	1147.7	1137.5	1116.2	1103.2	943.9	705.8	456.7	277.0	183.4
12.5°	1257.9	1257.0	1251.4	1232.9	1209.7	1196.7	1004.1	708.6	408.5	218.6	132.5
15°	1335.7	1334.8	1322.7	1306.0	1282.9	1269.0	1047.6	696.6	355.7	170.4	95.4
17.5°	1385.7	1382.0	1370.0	1353.3	1328.3	1312.5	1072.6	669.7	298.3	128.8	71.3
20°	1408.9	1404.2	1394.0	1380.1	1356.1	1340.3	1084.7	630.8	245.5	98.2	54.7
22.5°	1408.9	1407.0	1400.5	1388.5	1367.2	1351.4	1077.3	580.8	198.2	76.0	42.6
25°	1396.8	1396.8	1393.1	1386.6	1369.0	1354.2	1056.9	520.6	156.5	59.3	34.3
27.5°	1377.4	1378.3	1376.4	1374.6	1359.8	1345.9	1018.9	452.9	119.5	47.2	28.7
30°	1351.4	1349.6	1348.7	1347.7	1332.0	1319.9	968.0	376.1	90.8	38.0	24.1
32.5°	1307.0	1307.0	1307.9	1307.0	1290.3	1277.3	896.6	302.0	68.5	31.5	21.3
35°	1236.6	1234.7	1240.3	1237.5	1224.5	1209.7	808.6	232.5	50.9	25.9	18.5
37.5°	1147.7	1151.4	1152.3	1144.9	1135.6	1126.3	708.6	173.2	37.1	20.4	16.7
40°	1040.2	1042.1	1043.0	1045.8	1035.6	1026.3	608.6	126.0	26.9	16.7	15.7
42.5°	902.2	905.0	912.4	920.7	917.0	913.3	499.3	86.1	19.5	14.8	14.8
45°	744.7	750.3	758.6	762.3	772.5	764.2	395.5	57.4	13.9	13.0	13.9
47.5°	607.6	605.8	616.9	616.9	628.9	621.5	297.3	35.2	10.2	12.0	13.9
50°	486.3	485.4	484.4	497.4	499.3	489.1	211.2	21.3	8.3	11.1	13.9
52.5°	359.4	353.8	364.0	372.4	369.6	370.5	147.3	13.0	7.4	11.1	14.8
55°	227.9	231.6	235.3	242.7	247.3	241.8	94.5	8.3	7.4	11.1	14.8
57.5°	123.2	125.0	130.6	135.2	138.0	141.7	57.4	6.5	6.5	11.1	14.8
60°	58.4	56.5	57.4	62.1	67.6	69.5	34.3	4.6	6.5	10.2	15.7
62.5°	20.4	21.3	22.2	25.0	26.9	28.7	20.4	3.7	6.5	10.2	15.7
65°	7.4	7.4	7.4	8.3	10.2	11.1	11.1	3.7	5.6	10.2	14.8
67.5°	3.7	3.7	3.7	3.7	3.7	4.6	5.6	3.7	5.6	9.3	14.8
70°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	4.6	8.3	13.9
72.5°	1.9	1.9	1.9	1.9	1.9	1.9	2.8	2.8	4.6	7.4	12.0
75°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.8	3.7	6.5	10.2
77.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.8	4.6	8.3
80°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.9	1.9	3.7	6.5
82.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.9	2.8	4.6
85°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.9	2.8
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	0.9
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):**

	157.5°	180°
0°	554.8	554.8
2.5°	410.3	400.1
5°	293.6	277.0
7.5°	202.9	188.0
10°	139.9	126.9
12.5°	97.3	89.8
15°	69.5	62.1
17.5°	51.9	47.2
20°	39.8	37.1
22.5°	32.4	30.6
25°	26.9	25.0
27.5°	23.2	22.2
30°	20.4	19.5
32.5°	18.5	17.6
35°	16.7	16.7
37.5°	16.7	16.7
40°	15.7	16.7
42.5°	15.7	16.7
45°	16.7	17.6
47.5°	16.7	18.5
50°	17.6	19.5
52.5°	18.5	20.4
55°	19.5	22.2
57.5°	20.4	24.1
60°	21.3	24.1
62.5°	21.3	25.0
65°	21.3	25.0
67.5°	21.3	24.1
70°	19.5	23.2
72.5°	17.6	20.4
75°	14.8	14.8
77.5°	11.1	12.0
80°	9.3	9.3
82.5°	6.5	6.5
85°	3.7	4.6
87.5°	0.9	0.9
90°	0.0	0.0

(END OF REPORT)