

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: P358800

Luminaire Tested: **HL36SAR13NFLD2WED010TLS3R2GMW-TILTED 30D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P358800
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1908-462-12)
Test Lab: INNOVATION CENTER (G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL36SAR13NFLD2WED010TLS3R2GMW-TILTED 30D
Description: HL3 13W Square tilted 30D, Narrow 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: 911.0 lumens
Efficiency: N/A
Efficacy: 63.3 lumens/watt
Spacing Criteria (0/90/45): 2.27 / 0.6 / 1.15
Luminous Opening: Rectangular (W 0.27' x L: 0.27' x H: 0')
CIE Type: Direct

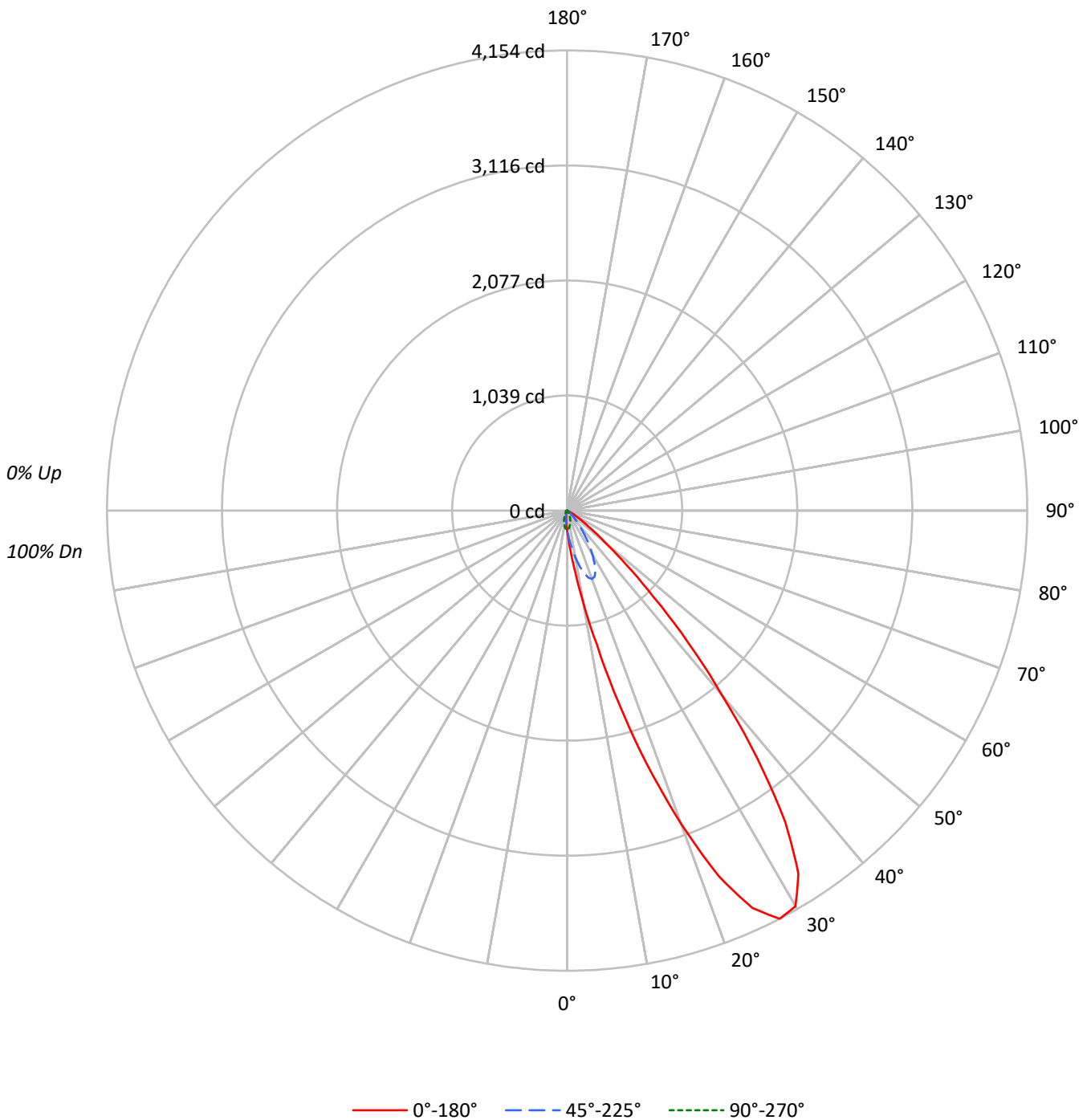
Input Watts (W): 14.4
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	104	110	107	104	102	103	101	99	99	97	96	96	94	93	91					91			
2	106	100	95	91	103	98	94	90	95	91	88	92	89	86	89	86	84	82					82			
3	99	91	85	81	97	90	84	80	87	82	79	85	81	77	82	79	76	74					74			
4	92	83	77	72	90	82	76	71	80	75	71	78	73	70	76	72	69	67					67			
5	86	76	70	64	85	75	69	64	74	68	63	72	67	63	70	66	62	61					61			
6	81	70	63	58	79	69	63	58	68	62	57	66	61	57	65	60	56	55					55			
7	76	65	57	52	74	64	57	52	62	56	52	61	56	52	60	55	51	50					50			
8	71	60	52	48	69	59	52	47	58	52	47	57	51	47	56	50	47	45					45			
9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	51	46	43	41					41			
10	62	51	44	39	61	50	44	39	50	43	39	49	43	39	48	43	39	37					37			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	25299	25299	25299
5°	54209	23893	13110
10°	126659	20712	7048
15°	273036	16468	3950
20°	469851	12306	2311
25°	640834	8403	1506
30°	698753	5185	1101
35°	615539	2651	1003
40°	417436	1418	1073
45°	229301	768	1349
50°	100724	639	1895
55°	43621	716	2840
60°	18226	1086	3815
65°	5799	1285	4827
70°	815	1201	5149
75°	510	1077	4196
80°	761	1606	3887
85°	0	1515	3199



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	21.0	2.3
10°-20°	123.0	13.5
20°-30°	303.2	33.3
30°-40°	302.0	33.1
40°-50°	121.9	13.4
50°-60°	26.9	3.0
60°-70°	7.9	0.9
70°-80°	3.9	0.4
80°-90°	1.3	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°	447.1	49.1
0°-40°	749.1	82.2
0°-60°	897.9	98.6
0°-90°	911.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	911.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	172	172	172	172	172	
5°	368	282	162	104	89	50
15°	1797	581	108	38	26	554
25°	3958	602	52	13	9	1780
35°	3436	286	15	6	6	2063
45°	1105	77	4	6	6	902
55°	170	13	3	7	11	178
65°	17	4	4	8	14	22
75°	1	2	2	6	7	1
85°	0	1	1	2	2	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4	172.4
2.5°	250.3	242.8	250.3	246.6	242.8	243.8	236.4	235.4	230.8	225.2	220.6
5°	368.0	368.0	364.3	358.7	350.4	338.3	342.0	322.6	311.4	292.0	281.8
7.5°	550.6	541.3	530.2	532.0	494.0	489.4	477.3	440.3	413.4	384.7	349.4
10°	850.0	820.3	799.0	780.4	720.2	699.8	664.6	604.3	550.6	489.4	430.1
12.5°	1236.5	1233.7	1179.9	1103.9	1023.3	957.5	919.5	808.2	707.2	601.6	509.8
15°	1797.2	1772.2	1666.6	1529.4	1378.3	1293.9	1217.9	1036.3	875.9	716.5	581.2
17.5°	2405.3	2350.6	2232.9	2042.9	1819.5	1671.2	1532.2	1276.3	1027.0	810.1	634.0
20°	3008.7	2964.2	2815.0	2567.5	2224.5	2045.6	1858.4	1482.1	1152.1	875.0	658.1
22.5°	3570.4	3500.9	3299.7	2987.4	2570.3	2334.8	2102.2	1632.3	1223.5	891.7	647.0
25°	3957.8	3892.0	3655.7	3299.7	2806.6	2523.9	2237.5	1691.6	1222.6	860.2	601.6
27.5°	4154.3	4069.1	3818.8	3410.0	2872.4	2561.0	2247.7	1654.5	1151.2	787.9	533.0
30°	4123.7	4037.5	3770.6	3334.0	2766.8	2435.9	2110.5	1503.4	1027.9	685.0	451.4
32.5°	3884.6	3796.5	3525.0	3080.1	2494.3	2194.0	1849.1	1293.0	863.9	558.0	371.7
35°	3436.0	3337.7	3085.6	2694.5	2119.8	1814.9	1558.1	1048.3	685.9	440.3	286.4
37.5°	2820.5	2741.7	2542.5	2191.2	1695.3	1441.3	1198.5	816.6	532.0	335.5	216.9
40°	2179.1	2158.7	1923.3	1630.4	1243.0	1057.6	876.8	593.2	389.3	250.3	159.4
42.5°	1620.2	1552.5	1408.9	1167.9	874.1	746.1	621.0	412.5	276.2	177.0	112.2
45°	1104.9	1063.1	943.6	796.2	605.3	503.3	423.6	288.3	192.8	125.1	76.9
47.5°	719.3	686.8	612.7	498.7	385.6	329.0	277.1	190.9	127.0	80.6	48.2
50°	441.2	438.4	382.8	311.4	234.5	202.1	169.6	123.3	83.4	51.0	30.6
52.5°	279.9	269.7	239.1	196.5	150.2	126.1	105.7	75.1	51.0	32.4	20.4
55°	170.5	165.9	145.5	121.4	92.7	77.9	64.9	46.3	31.5	21.3	13.0
57.5°	106.6	99.2	90.8	72.3	54.7	46.3	39.9	27.8	19.5	13.9	8.3
60°	62.1	59.3	50.1	42.6	32.4	26.9	23.2	16.7	12.0	9.3	6.5
62.5°	34.3	32.4	28.7	23.2	17.6	14.8	13.0	10.2	8.3	5.6	4.6
65°	16.7	16.7	14.8	12.0	9.3	8.3	7.4	5.6	4.6	4.6	3.7
67.5°	5.6	5.6	5.6	4.6	4.6	4.6	3.7	3.7	3.7	3.7	2.8
70°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.8	2.8	2.8	1.9
72.5°	0.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
75°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.9	1.9	1.9
77.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
80°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
82.5°	0.0	0.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
85°	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9
87.5°	0.0	0.0	0.0	0.0	0.9	0.9	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):

	67.5°	90°	112.5°	135°	157.5°	180°
0°	172.4	172.4	172.4	172.4	172.4	172.4
2.5°	194.6	168.7	149.2	133.5	123.3	123.3
5°	214.1	162.2	126.1	103.8	91.8	89.0
7.5°	229.9	152.0	105.7	80.6	69.5	64.9
10°	239.1	139.0	88.1	64.0	51.9	47.3
12.5°	241.0	124.2	74.2	49.1	38.0	35.2
15°	234.5	108.4	60.2	38.0	27.8	26.0
17.5°	219.7	93.6	48.2	28.7	20.4	18.5
20°	198.4	78.8	38.9	22.2	15.8	14.8
22.5°	171.5	64.0	30.6	16.7	12.0	11.1
25°	142.7	51.9	23.2	13.0	10.2	9.3
27.5°	117.7	39.9	17.6	10.2	8.3	7.4
30°	91.8	30.6	13.0	8.3	7.4	6.5
32.5°	72.3	22.2	10.2	6.5	6.5	6.5
35°	52.8	14.8	7.4	5.6	5.6	5.6
37.5°	34.3	10.2	6.5	5.6	5.6	5.6
40°	22.2	7.4	4.6	5.6	5.6	5.6
42.5°	14.8	5.6	4.6	4.6	5.6	6.5
45°	10.2	3.7	4.6	5.6	6.5	6.5
47.5°	6.5	2.8	3.7	5.6	6.5	7.4
50°	3.7	2.8	4.6	5.6	7.4	8.3
52.5°	2.8	2.8	4.6	6.5	8.3	9.3
55°	1.9	2.8	4.6	7.4	9.3	11.1
57.5°	1.9	2.8	5.6	7.4	10.2	12.0
60°	1.9	3.7	5.6	8.3	11.1	13.0
62.5°	2.8	3.7	5.6	8.3	12.0	13.0
65°	2.8	3.7	5.6	8.3	12.0	13.9
67.5°	2.8	3.7	5.6	8.3	12.0	13.0
70°	1.9	2.8	5.6	7.4	11.1	12.0
72.5°	1.9	2.8	4.6	7.4	10.2	11.1
75°	1.9	1.9	3.7	5.6	8.3	7.4
77.5°	1.9	1.9	2.8	4.6	6.5	6.5
80°	1.9	1.9	2.8	3.7	4.6	4.6
82.5°	0.9	0.9	1.9	2.8	3.7	3.7
85°	0.9	0.9	0.9	1.9	1.9	1.9
87.5°	0.9	0.9	0.9	0.9	0.9	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)