

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: P358814

Luminaire Tested: **HL36SAR13SPD2WED010TLS3PIN2GMWWB-TILTED 30D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P358814
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1908-462-8)
Test Lab: INNOVATION CENTER (G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HL36SAR13SPD2WED010TLS3PIN2GMWWB-TILTED 30D
Description: HL3 13W Square tilted 30D, Spot optic with pin-hole trim, Lensed, Matte White
Light Source: (1) 3100K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 756.0 lumens
Efficiency: N/A
Efficacy: 52.5 lumens/watt
Spacing Criteria (0/90/45): 2.27 / 0.54 / 1.17
Luminous Opening: Rectangular (W 0.17' x L: 0.17' x H: 0')
CIE Type: Direct

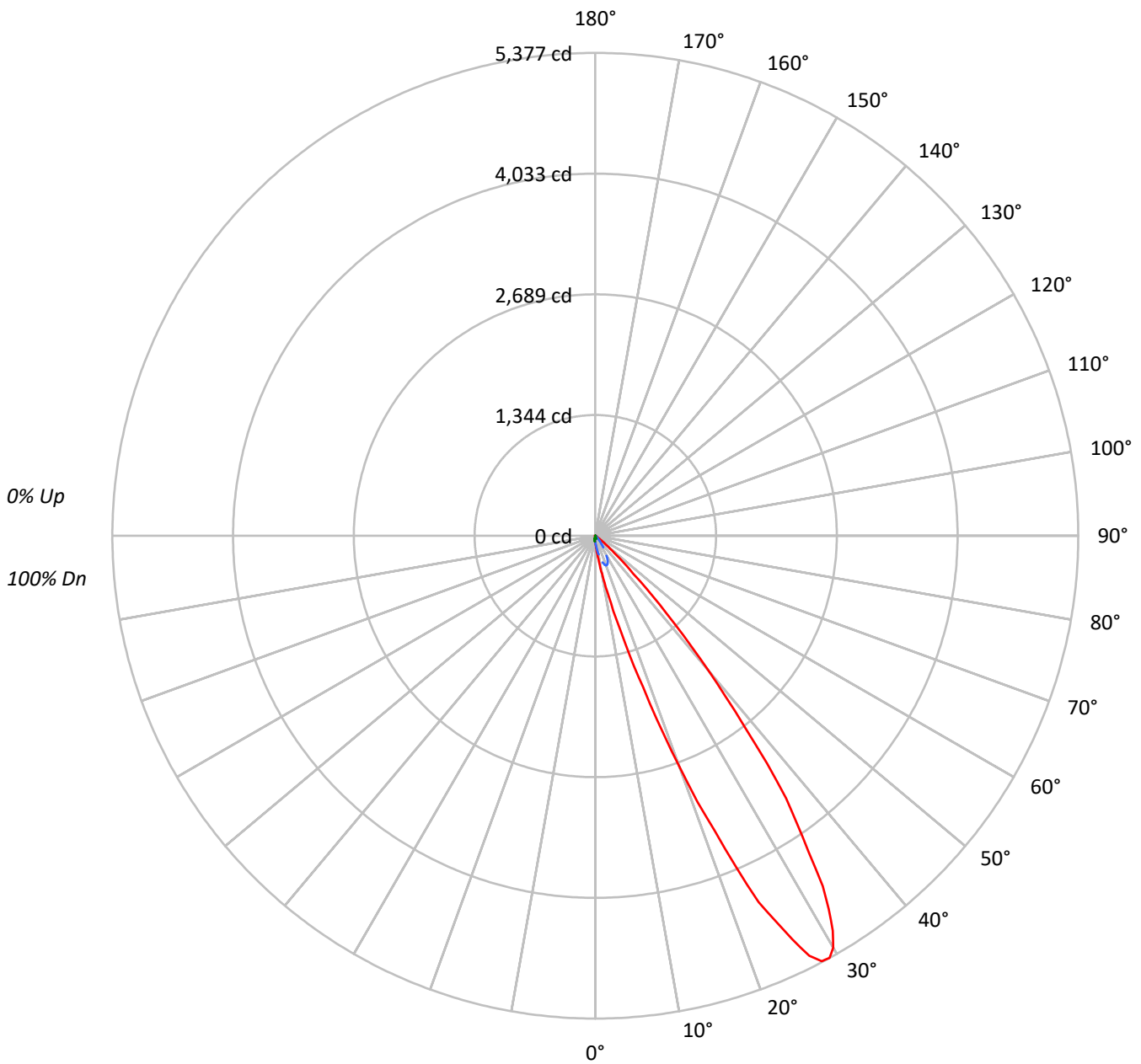
Input Watts (W): 14.4
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot



— 0°-180° - - 45°-225° - - - 90°-270°



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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	113	109	107	104	110	107	105	102	103	101	99	99	98	96	96	95	93	91					91			
2	106	100	95	91	103	98	94	90	95	91	88	92	89	87	89	87	85	83					83			
3	99	92	86	81	97	90	85	80	87	83	79	85	81	78	83	79	77	75					75			
4	93	84	77	72	91	83	77	72	80	75	71	78	74	70	76	73	69	68					68			
5	87	77	70	65	85	76	69	65	74	68	64	72	67	63	71	66	63	61					61			
6	81	71	63	58	79	70	63	58	68	62	58	67	61	57	65	60	57	55					55			
7	76	65	58	53	74	64	57	52	63	57	52	61	56	52	60	55	52	50					50			
8	71	60	52	48	70	59	52	47	58	52	47	57	51	47	56	51	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	49	43	39	48	43	39	48	42	39	37					37			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	26931	26931	26931
5°	65232	24856	10464
10°	170651	20776	4013
15°	448748	15605	1484
20°	1125064	9938	0
25°	2018374	5131	0
30°	2369762	2058	0
35°	1850427	426	0
40°	985385	0	0
45°	328092	0	0
50°	93320	0	1145
55°	23781	608	2500
60°	10075	1472	3565
65°	5960	1742	5135
70°	4192	2153	5212
75°	2845	2845	5540
80°	2008	4240	6248
85°	0	4001	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	9.1	1.2
10°-20°	73.8	9.8
20°-30°	292.2	38.7
30°-40°	292.1	38.6
40°-50°	73.5	9.7
50°-60°	8.2	1.1
60°-70°	3.6	0.5
70°-80°	2.6	0.3
80°-90°	0.9	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°	375.1	49.6
0°-40°	667.3	88.3
0°-60°	748.9	99.1
0°-90°	756.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	756.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	70	70	70	70	70	
5°	168	125	64	35	27	24
15°	1119	304	39	7	4	398
25°	4721	327	12	0	0	2119
35°	3912	143	1	0	0	2357
45°	599	32	0	0	0	587
55°	35	6	1	2	4	46
65°	6	3	2	4	6	7
75°	2	2	2	3	4	2
85°	0	1	1	1	0	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	22.5°	45°	67.5°	90°
0°	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5
2.5°	109.4	107.5	106.6	107.5	108.4	107.5	105.6	104.7	92.7	79.7	67.7
5°	167.7	165.9	168.7	166.8	165.9	165.0	162.2	158.5	125.1	90.8	63.9
7.5°	260.4	269.7	265.0	260.4	256.7	254.8	250.2	235.4	160.3	98.2	59.3
10°	433.7	427.2	423.5	420.7	416.1	405.0	388.3	351.2	209.4	104.7	52.8
12.5°	688.6	679.3	679.3	667.2	632.0	622.8	601.4	515.3	256.7	106.6	45.4
15°	1118.6	1078.7	1067.6	1051.8	1025.0	973.1	917.5	752.5	304.0	102.9	38.9
17.5°	1768.2	1719.1	1719.1	1637.5	1545.8	1469.8	1373.4	1069.4	337.3	94.5	30.6
20°	2728.3	2675.5	2614.3	2517.9	2353.9	2220.4	2027.7	1429.0	352.2	84.3	24.1
21°	3175.0	3103.6	3028.5	2882.1	2752.4	2539.2	2316.8	1598.6	352.2	79.7	21.3
22°	3543.8	3516.0	3407.6	3336.2	3116.6	2845.0	2576.3	1785.8	349.4	73.2	19.5
23°	4006.2	3944.1	3841.3	3696.7	3478.0	3181.4	2906.2	1944.3	344.7	68.6	16.7
24°	4465.9	4377.9	4273.1	4101.7	3842.2	3502.1	3159.2	2075.9	337.3	62.1	14.8
25°	4720.7	4705.0	4581.7	4399.2	4120.2	3747.7	3390.9	2181.5	327.1	56.5	12.0
26°	5001.5	4979.3	4882.0	4634.6	4321.3	3944.1	3559.6	2284.4	312.3	51.0	10.2
27°	5249.0	5200.8	5052.5	4809.7	4486.3	4097.1	3678.2	2329.8	294.7	46.3	8.3
28°	5366.7	5306.4	5148.0	4887.5	4564.1	4161.9	3724.5	2336.3	281.7	40.8	6.5
29°	5376.9	5322.2	5153.5	4899.6	4565.0	4154.5	3702.3	2308.5	258.6	36.1	5.6
30°	5296.2	5243.4	5064.6	4812.5	4482.6	4077.6	3630.9	2231.6	237.2	31.5	4.6
31°	5131.3	5055.3	4891.3	4677.2	4327.8	3907.1	3474.3	2134.2	217.8	26.9	3.7
32°	4901.4	4834.7	4708.7	4457.5	4111.0	3721.7	3282.5	1991.5	196.5	23.2	2.8
33°	4652.2	4554.9	4386.2	4182.3	3888.5	3510.4	3061.0	1813.6	177.0	20.4	1.9
34°	4244.4	4281.5	4089.6	3870.9	3605.0	3169.4	2795.9	1666.3	159.4	17.6	0.9
35°	3911.7	3874.6	3723.6	3527.1	3227.8	2884.9	2529.0	1476.3	142.7	14.8	0.9
36°	3614.2	3462.2	3375.1	3168.5	2921.0	2588.3	2288.1	1321.5	123.3	12.0	0.9
37°	3174.0	3054.5	2996.1	2826.5	2596.7	2275.1	1993.4	1138.0	106.6	10.2	0.9
38°	2693.1	2671.7	2618.0	2403.9	2189.9	1950.8	1709.8	979.5	93.6	9.3	0.9
39°	2303.8	2340.0	2205.6	2067.5	1867.4	1684.8	1478.1	850.7	82.5	7.4	0.0
40°	1948.0	1927.6	1886.8	1745.0	1593.0	1388.2	1237.2	725.6	69.5	6.5	0.0
42.5°	1161.2	1151.9	1108.4	1041.6	942.5	826.6	742.3	438.3	48.2	3.7	0.0
45°	598.7	598.7	576.4	554.2	520.8	469.8	409.6	251.1	31.5	2.8	0.0
47.5°	314.2	296.6	296.6	278.0	256.7	230.8	211.3	137.2	20.4	1.9	0.0
50°	154.8	146.4	143.6	139.0	130.7	114.0	107.5	69.5	13.9	0.9	0.0
52.5°	72.3	70.4	68.6	64.9	63.0	57.5	51.9	38.0	9.3	0.9	0.9
55°	35.2	35.2	33.4	32.4	30.6	29.7	26.9	21.3	6.5	0.9	0.9
57.5°	19.5	20.4	19.5	18.5	17.6	17.6	15.8	13.0	4.6	1.9	0.9
60°	13.0	13.0	12.0	12.0	12.0	11.1	10.2	9.3	3.7	1.9	1.9
62.5°	8.3	8.3	8.3	8.3	8.3	8.3	7.4	6.5	3.7	1.9	1.9
65°	6.5	6.5	6.5	6.5	6.5	5.6	5.6	4.6	2.8	1.9	1.9
67.5°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	3.7	2.8	1.9	1.9
70°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	2.8	2.8	1.9	1.9
72.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	1.9	1.9	1.9
75°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	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	1.9	1.9
80°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.9



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CANDELA DISTRIBUTION (continued):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	22.5°	45°	67.5°	90°
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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):

	112.5°	135°	157.5°	180°
0°	69.5	69.5	69.5	69.5
2.5°	57.5	50.0	45.4	43.6
5°	46.3	35.2	29.7	26.9
7.5°	37.1	25.0	18.5	16.7
10°	28.7	16.7	11.1	10.2
12.5°	22.2	11.1	6.5	5.6
15°	16.7	7.4	4.6	3.7
17.5°	11.1	4.6	1.9	1.9
20°	7.4	2.8	0.9	0.0
21°	6.5	1.9	0.0	0.0
22°	4.6	0.9	0.0	0.0
23°	3.7	0.9	0.0	0.0
24°	2.8	0.9	0.0	0.0
25°	1.9	0.0	0.0	0.0
26°	1.9	0.0	0.0	0.0
27°	0.9	0.0	0.0	0.0
28°	0.9	0.0	0.0	0.0
29°	0.0	0.0	0.0	0.0
30°	0.0	0.0	0.0	0.0
31°	0.0	0.0	0.0	0.0
32°	0.0	0.0	0.0	0.0
33°	0.0	0.0	0.0	0.0
34°	0.0	0.0	0.0	0.0
35°	0.0	0.0	0.0	0.0
36°	0.0	0.0	0.0	0.0
37°	0.0	0.0	0.0	0.0
38°	0.0	0.0	0.0	0.0
39°	0.0	0.0	0.0	0.0
40°	0.0	0.0	0.0	0.0
42.5°	0.0	0.0	0.0	0.0
45°	0.0	0.0	0.0	0.0
47.5°	0.9	0.9	0.0	0.9
50°	0.9	0.9	0.9	1.9
52.5°	0.9	1.9	1.9	2.8
55°	1.9	1.9	2.8	3.7
57.5°	1.9	2.8	3.7	3.7
60°	2.8	3.7	3.7	4.6
62.5°	2.8	3.7	4.6	4.6
65°	2.8	3.7	4.6	5.6
67.5°	2.8	3.7	4.6	5.6
70°	2.8	3.7	4.6	4.6
72.5°	2.8	3.7	3.7	4.6
75°	2.8	2.8	3.7	3.7
77.5°	1.9	2.8	2.8	3.7
80°	1.9	1.9	2.8	2.8



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CANDELA DISTRIBUTION (continued):

	112.5°	135°	157.5°	180°
82.5°	1.9	1.9	1.9	1.9
85°	0.9	0.9	0.0	0.0
87.5°	0.9	0.9	0.0	0.0
90°	0.0	0.0	0.0	0.0

(END OF REPORT)