

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: P358799

Luminaire Tested: **HL36SAR13NFLD2WED010TLS3PINMWWB-TILTED 30D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P358799  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1908-462-14)  
Test Lab: INNOVATION CENTER (G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: HL36SAR13NFLD2WED010TLS3PINMWWB-TILTED 30D  
Description: HL3 13W Square tilted 30D, Narrow Flood optic with pin-hole trim, No Lens, Matte White  
Light Source: (1) 3100K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 815.0 lumens  
Efficiency: N/A  
Efficacy: 56.6 lumens/watt  
Spacing Criteria (0/90/45): 2.19 / 0.56 / 1.03  
Luminous Opening: Rectangular (W 0.17' x L: 0.17' x H: 0')  
CIE Type: Direct

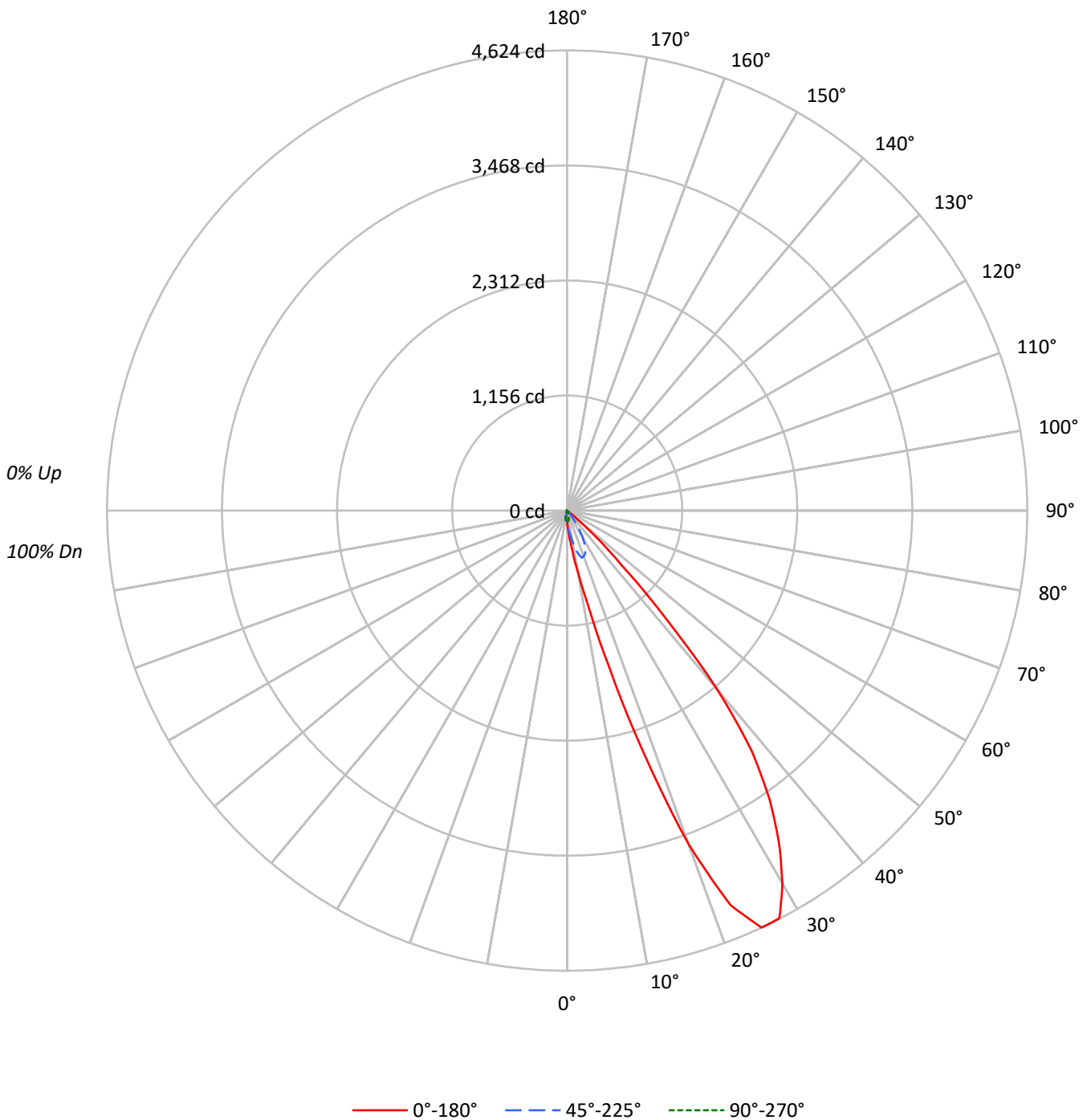
Input Watts (W): 14.4  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	113	110	107	104	110	107	105	103	103	101	100	100	98	97	96	95	94	92					92			
2	106	101	96	92	104	99	95	91	96	92	89	93	90	87	90	88	85	84					84			
3	100	92	87	82	98	91	86	82	88	84	80	86	82	79	84	80	78	76					76			
4	94	85	79	74	92	84	78	73	82	77	72	80	75	72	78	74	71	69					69			
5	88	78	71	67	86	77	71	66	75	70	66	74	69	65	72	68	64	63					63			
6	82	72	65	60	81	71	65	60	70	64	59	68	63	59	67	62	59	57					57			
7	77	66	59	55	76	66	59	54	64	58	54	63	58	54	62	57	53	52					52			
8	72	61	54	50	71	61	54	49	59	54	49	58	53	49	57	52	49	47					47			
9	68	57	50	45	67	56	50	45	55	49	45	54	49	45	53	48	45	43					43			
10	64	52	46	41	63	52	46	41	51	45	41	50	45	41	49	44	41	39					39			

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

	0°	90°	180°
0°	44524	44524	44524
5°	103080	41815	17310
10°	252691	36475	4722
15°	649452	26758	1484
20°	1470876	17196	0
25°	1977115	7525	0
30°	1935158	2058	0
35°	1678095	426	0
40°	1188330	0	0
45°	419992	0	0
50°	78791	0	0
55°	1892	608	0
60°	697	697	697
65°	825	825	1742
70°	1020	2153	2153
75°	1347	2845	5540
80°	0	4240	10265
85°	0	4001	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	14.3	1.8
10°-20°	105.4	12.9
20°-30°	319.6	39.2
30°-40°	293.2	36.0
40°-50°	75.3	9.2
50°-60°	2.8	0.3
60°-70°	1.2	0.2
70°-80°	2.0	0.3
80°-90°	1.2	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°	439.3	53.9
0°-40°	732.5	89.9
0°-60°	810.6	99.5
0°-90°	815.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	815.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	115	115	115	115	115	
5°	265	200	108	60	44	37
15°	1619	462	67	9	4	557
25°	4624	433	18	0	0	2032
35°	3547	138	1	0	0	2160
45°	766	18	0	0	0	720
55°	3	1	1	0	0	21
65°	1	1	1	2	2	1
75°	1	1	2	3	4	1
85°	0	1	1	1	0	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°	114.9	114.9	114.9	114.9	114.9	114.9	114.9	114.9	114.9	114.9	114.9
2.5°	176.1	174.2	174.2	171.4	168.7	169.6	169.6	164.0	156.6	153.8	152.0
5°	265.0	260.4	259.5	253.9	247.4	243.7	242.8	229.8	219.6	209.4	200.2
7.5°	417.0	398.5	398.5	387.4	360.5	360.5	342.9	325.3	300.3	278.0	254.8
10°	642.2	618.1	604.2	567.1	544.9	517.1	507.8	458.7	415.2	368.8	317.9
12.5°	975.8	959.1	900.8	858.1	786.8	737.7	689.5	621.8	539.3	470.8	400.3
15°	1618.9	1577.2	1479.9	1350.2	1175.1	1085.2	984.2	820.1	685.8	560.7	461.5
17.5°	2545.6	2458.5	2271.3	2019.3	1701.4	1531.8	1362.3	1093.5	835.0	644.1	496.7
20°	3566.9	3507.6	3224.9	2883.9	2349.2	2121.2	1854.3	1372.4	968.4	680.2	490.2
22.5°	4290.6	4235.0	4020.0	3590.0	2980.3	2660.6	2292.7	1590.2	1044.4	679.3	470.8
25°	4624.2	4565.9	4364.8	3986.7	3404.7	3000.7	2570.7	1691.2	1050.0	654.3	432.8
27.5°	4617.8	4561.2	4393.5	4066.4	3490.9	3078.5	2597.5	1644.9	986.9	595.9	378.1
30°	4324.9	4286.9	4131.2	3816.2	3237.9	2816.2	2370.5	1476.2	856.3	505.1	305.8
32.5°	3962.6	3884.7	3731.8	3351.9	2743.0	2336.2	1936.8	1207.5	671.9	392.9	228.0
35°	3547.4	3520.5	3299.1	2875.6	2207.4	1841.4	1484.6	873.0	492.1	276.2	138.1
37.5°	3052.6	2985.8	2774.5	2310.3	1710.7	1398.4	1080.5	616.3	329.0	161.2	68.6
40°	2349.2	2237.1	2015.6	1650.5	1098.1	878.5	661.7	378.1	191.8	79.7	43.6
42.5°	1437.3	1376.2	1185.3	875.7	573.6	434.6	329.0	202.0	90.8	44.5	28.7
45°	766.4	747.8	583.8	407.7	233.5	175.1	136.2	83.4	43.6	28.7	18.5
47.5°	392.9	348.4	259.5	181.6	104.7	81.5	66.7	40.8	26.9	17.6	9.3
50°	130.7	120.5	89.0	67.6	51.9	41.7	34.3	23.2	13.9	8.3	2.8
52.5°	28.7	25.9	25.9	21.3	18.5	16.7	13.0	10.2	5.6	2.8	1.9
55°	2.8	2.8	2.8	2.8	2.8	3.7	2.8	1.9	0.9	0.9	0.9
57.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
60°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
62.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
65°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
67.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
70°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
72.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
75°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
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°	0.0	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	0.0	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°	114.9	114.9	114.9	114.9	114.9	114.9
2.5°	131.6	112.1	95.5	83.4	76.9	73.2
5°	148.3	107.5	79.7	60.2	48.2	44.5
7.5°	162.2	101.0	63.9	38.9	25.0	20.4
10°	173.3	92.7	49.1	21.3	13.0	12.0
12.5°	175.1	80.6	36.1	13.0	9.3	7.4
15°	165.0	66.7	23.2	9.3	5.6	3.7
17.5°	149.2	54.7	13.9	5.6	2.8	1.9
20°	130.7	41.7	8.3	2.8	0.0	0.0
22.5°	107.5	29.7	4.6	0.9	0.0	0.0
25°	79.7	17.6	2.8	0.0	0.0	0.0
27.5°	51.0	8.3	0.9	0.0	0.0	0.0
30°	28.7	4.6	0.0	0.0	0.0	0.0
32.5°	18.5	1.9	0.0	0.0	0.0	0.0
35°	12.0	0.9	0.0	0.0	0.0	0.0
37.5°	7.4	0.0	0.0	0.0	0.0	0.0
40°	2.8	0.0	0.0	0.0	0.0	0.0
42.5°	0.9	0.0	0.0	0.0	0.0	0.0
45°	0.0	0.0	0.0	0.0	0.0	0.0
47.5°	0.0	0.0	0.0	0.0	0.0	0.0
50°	0.0	0.0	0.0	0.0	0.0	0.0
52.5°	0.0	0.0	0.0	0.0	0.0	0.0
55°	0.0	0.9	0.9	0.0	0.0	0.0
57.5°	0.9	0.9	0.9	0.9	0.0	0.9
60°	0.9	0.9	0.9	0.9	0.9	0.9
62.5°	0.9	0.9	0.9	0.9	0.9	1.9
65°	0.9	0.9	1.9	1.9	1.9	1.9
67.5°	0.9	1.9	1.9	1.9	1.9	1.9
70°	1.9	1.9	1.9	1.9	1.9	1.9
72.5°	1.9	1.9	1.9	2.8	1.9	2.8
75°	1.9	1.9	1.9	2.8	2.8	3.7
77.5°	1.9	1.9	2.8	2.8	3.7	4.6
80°	1.9	1.9	1.9	2.8	3.7	4.6
82.5°	1.9	1.9	1.9	1.9	3.7	4.6
85°	0.9	0.9	0.9	0.9	0.0	0.0
87.5°	0.9	0.9	0.9	0.9	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)