

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: P358801

Luminaire Tested: **HL36AR13NFLD2WED010TL3RMW-TILTED 30D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P358801  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1908-462-10)  
Test Lab: INNOVATION CENTER (G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: HL36AR13NFLD2WED010TL3RMW-TILTED 30D  
Description: HL3 13W Round tilted 30D, Narrow Flood optic with conical 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: 1003.0 lumens  
Efficiency: N/A  
Efficacy: 69.7 lumens/watt  
Spacing Criteria (0/90/45): 2.19 / 0.62 / 1.17  
Luminous Opening: Rectangular (W 0.27' x L: 0.27' x H: 0')  
CIE Type: Direct

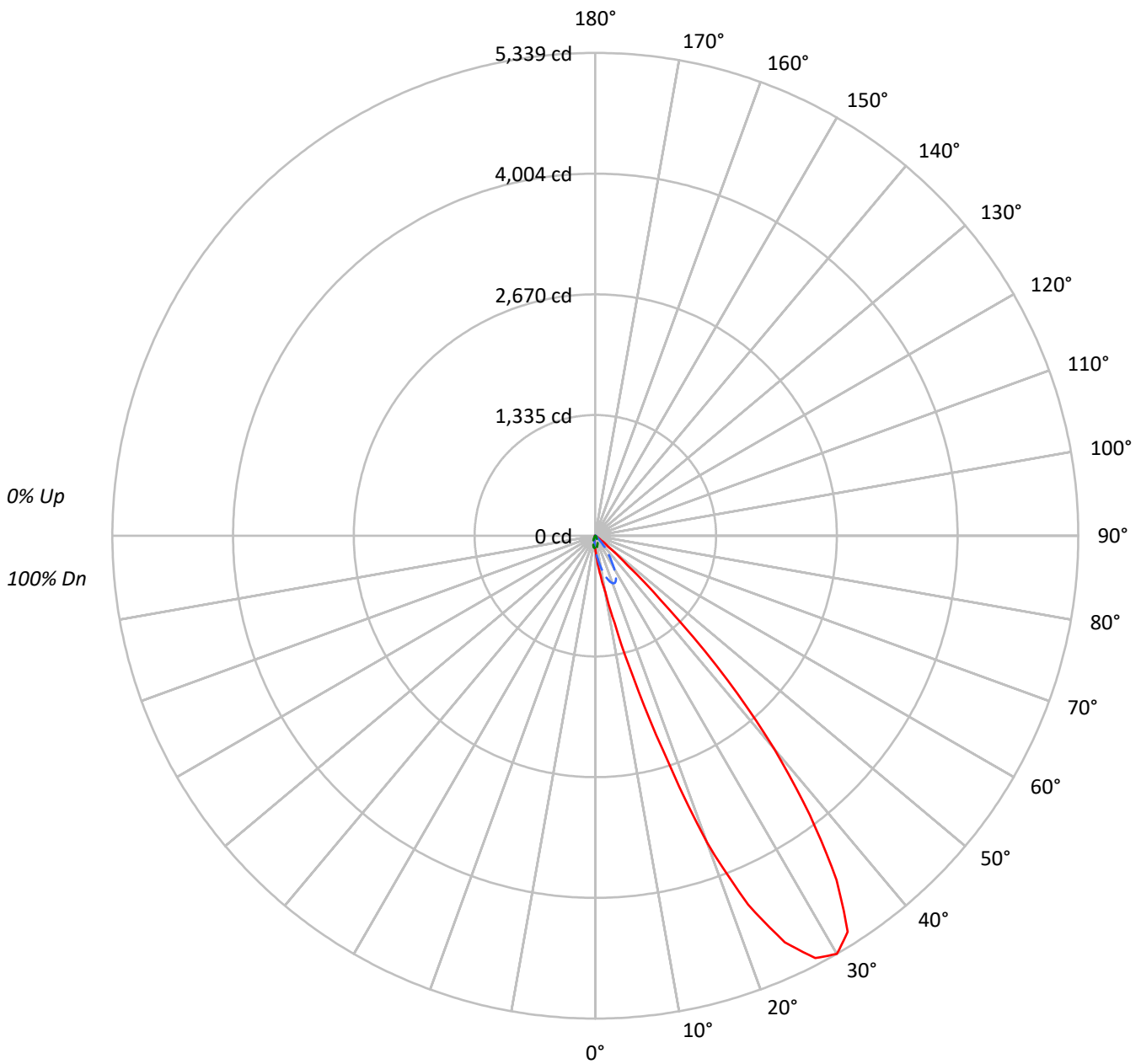
Input Watts (W): 14.4  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P358801

CATALOG NUMBER: HL36AR13NFLD2WED010TL3RMW-TILTED 30D

### Luminous Intensity Polar Plot



— 0°-180°    - - 45°-225°    - - - 90°-270°



TEST NUMBER: P358801

CATALOG NUMBER: HL36AR13NFLD2WED010TL3RMW-TILTED 30D

**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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	113	109	107	104	110	107	105	102	103	101	99	99	98	96	96	95	93	92
2	106	100	95	91	103	98	94	90	95	92	88	92	89	87	89	87	85	83
3	99	92	86	81	97	90	85	80	87	83	79	85	81	78	83	79	77	75
4	93	84	77	72	91	83	77	72	80	75	71	78	74	70	76	73	69	68
5	87	77	70	65	85	76	69	65	74	68	64	72	67	63	71	66	63	61
6	81	71	63	58	79	70	63	58	68	62	58	67	61	57	65	61	57	55
7	76	65	58	53	74	64	57	53	63	57	52	61	56	52	60	55	52	50
8	71	60	53	48	70	59	52	48	58	52	47	57	51	47	56	51	47	45
9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	51	46	43	41
10	62	51	44	39	61	50	44	39	49	43	39	49	43	39	48	43	39	37

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

	0°	90°	180°
0°	21190	21190	21190
5°	45282	19769	11048
10°	94919	17389	6065
15°	245583	14205	2385
20°	563581	10697	1156
25°	802896	7043	599
30°	904717	4236	322
35°	832751	1666	0
40°	588292	536	172
45°	238245	187	394
50°	44381	205	639
55°	6857	230	1177
60°	264	558	1644
65°	313	660	2257
70°	386	1201	2789
75°	510	1077	3685
80°	0	1606	3127
85°	0	3199	1515



TEST NUMBER: P358801

CATALOG NUMBER: HL36AR13NFLD2WED010TL3RMW-TILTED 30D

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	17.3	1.7
10°-20°	112.3	11.2
20°-30°	352.2	35.1
30°-40°	385.7	38.5
40°-50°	119.6	11.9
50°-60°	8.4	0.8
60°-70°	3.1	0.3
70°-80°	2.9	0.3
80°-90°	1.4	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°	481.9	48.0
0°-40°	867.6	86.5
0°-60°	995.6	99.3
0°-90°	1003.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1003.0	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	144	144	144	144	144	
5°	307	235	134	90	75	39
15°	1616	482	94	32	16	553
25°	4959	540	44	6	4	2235
35°	4648	262	9	1	0	2788
45°	1148	50	1	1	2	1019
55°	27	5	1	4	5	46
65°	1	1	2	6	6	1
75°	1	2	2	5	6	1
85°	0	1	2	2	1	0
90°	0	0	0	0	0	



TEST NUMBER: P358801

CATALOG NUMBER: HL36AR13NFLD2WED010TL3RMW-TILTED 30D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	144.4	144.4	144.4	144.4	144.4	144.4	144.4	144.4	144.4	144.4	144.4
2.5°	204.6	207.4	209.2	207.4	203.7	200.9	200.9	197.2	193.5	187.9	185.2
5°	307.4	301.8	300.0	297.2	286.1	280.5	281.4	270.3	260.2	245.3	235.2
7.5°	442.5	431.4	437.0	419.4	403.7	392.5	386.1	365.7	343.5	316.6	292.6
10°	637.0	649.9	626.8	602.7	570.3	549.0	527.7	487.9	445.3	396.3	357.4
12.5°	986.0	994.3	949.0	865.6	799.0	762.9	724.0	638.8	556.4	492.5	419.4
15°	1616.5	1599.8	1505.4	1353.6	1169.3	1093.4	1013.8	844.3	698.1	584.2	482.4
17.5°	2475.6	2485.8	2293.3	2046.1	1715.5	1558.2	1408.2	1096.2	852.7	667.5	530.5
20°	3608.9	3526.5	3266.3	2872.8	2365.5	2127.5	1883.1	1391.5	1016.6	743.4	560.1
22.5°	4415.2	4326.4	4044.9	3617.2	3032.1	2680.3	2318.3	1635.0	1133.2	785.1	565.7
25°	4958.7	4881.9	4581.0	4125.5	3458.9	3061.7	2631.2	1810.0	1193.4	786.9	539.8
27.5°	5264.2	5171.6	4886.5	4403.2	3682.9	3245.0	2766.4	1833.1	1161.0	738.8	487.9
30°	5339.2	5246.6	4968.9	4479.1	3685.7	3206.1	2687.7	1712.8	1056.4	648.1	412.9
32.5°	5192.0	5095.7	4802.2	4283.8	3443.1	2934.9	2422.9	1489.6	886.0	527.7	330.5
35°	4648.5	4572.6	4312.5	3872.7	2983.9	2474.7	1995.1	1207.3	691.6	412.0	262.0
37.5°	3894.0	3790.3	3488.5	3068.2	2253.4	1878.5	1482.2	877.7	510.1	312.0	196.3
40°	3071.0	2958.9	2648.8	2129.4	1450.8	1174.9	933.2	589.7	368.5	231.5	146.3
42.5°	2165.5	2027.5	1719.3	1360.0	924.0	744.4	587.9	369.4	248.1	165.7	96.3
45°	1148.0	1047.1	936.0	737.0	512.0	416.6	359.2	245.3	163.9	104.6	50.0
47.5°	485.1	452.7	371.3	284.2	221.3	197.2	182.4	142.6	103.7	55.5	25.0
50°	194.4	177.8	150.0	114.8	92.6	77.8	74.1	63.9	51.8	23.1	18.5
52.5°	81.5	81.5	70.4	58.3	47.2	45.4	38.0	27.8	21.3	16.7	12.0
55°	26.8	28.7	25.9	23.1	20.4	19.4	18.5	15.7	13.0	10.2	4.6
57.5°	4.6	5.6	5.6	5.6	5.6	6.5	6.5	6.5	5.6	3.7	1.9
60°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.9	1.9	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	1.9
70°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.9
72.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.9
75°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.9
77.5°	0.0	0.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.9
80°	0.0	0.0	0.0	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



TEST NUMBER: P358801

CATALOG NUMBER: HL36AR13NFLD2WED010TL3RMW-TILTED 30D

**CANDELA DISTRIBUTION (continued):**

	67.5°	90°	112.5°	135°	157.5°	180°
0°	144.4	144.4	144.4	144.4	144.4	144.4
2.5°	162.0	140.7	124.1	113.0	105.5	101.8
5°	178.7	134.2	106.5	89.8	77.8	75.0
7.5°	193.5	126.8	90.7	70.4	59.3	55.5
10°	203.7	116.7	75.9	54.6	42.6	40.7
12.5°	207.4	105.5	63.0	41.7	29.6	26.8
15°	204.6	93.5	51.8	31.5	19.4	15.7
17.5°	195.3	81.5	42.6	21.3	12.0	11.1
20°	176.8	68.5	32.4	13.9	8.3	7.4
22.5°	151.8	56.5	24.1	9.3	6.5	5.6
25°	125.0	43.5	16.7	6.5	4.6	3.7
27.5°	100.9	34.3	11.1	4.6	2.8	2.8
30°	80.5	25.0	6.5	2.8	1.9	1.9
32.5°	62.0	15.7	3.7	1.9	0.9	0.9
35°	42.6	9.3	2.8	0.9	0.9	0.0
37.5°	22.2	4.6	1.9	0.9	0.9	0.0
40°	12.0	2.8	0.9	0.9	0.9	0.9
42.5°	8.3	0.9	0.9	0.9	0.9	0.9
45°	4.6	0.9	0.9	0.9	1.9	1.9
47.5°	1.9	0.9	0.9	1.9	1.9	2.8
50°	0.0	0.9	1.9	2.8	2.8	2.8
52.5°	0.0	0.9	1.9	2.8	3.7	3.7
55°	0.9	0.9	2.8	3.7	4.6	4.6
57.5°	0.9	0.9	2.8	4.6	4.6	4.6
60°	0.9	1.9	3.7	4.6	5.6	5.6
62.5°	0.9	1.9	3.7	5.6	5.6	6.5
65°	1.9	1.9	3.7	5.6	6.5	6.5
67.5°	1.9	2.8	3.7	5.6	6.5	6.5
70°	1.9	2.8	3.7	5.6	6.5	6.5
72.5°	1.9	1.9	3.7	4.6	6.5	6.5
75°	1.9	1.9	2.8	4.6	5.6	6.5
77.5°	1.9	1.9	2.8	3.7	4.6	4.6
80°	1.9	1.9	1.9	2.8	3.7	3.7
82.5°	1.9	1.9	1.9	1.9	2.8	2.8
85°	1.9	1.9	1.9	1.9	1.9	0.9
87.5°	1.9	0.9	1.9	0.9	0.9	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)