

LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P518125

Luminaire Tested: HVL8-4-LD4-3LO-30-UNV-O-EDD-90

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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Test Information

Test Method: LM-79-2019
Report Number: P518125
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3LO-30-UNV-O-EDD-90
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7372.0 lumens
Efficiency: N/A
Efficacy: 109.4 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

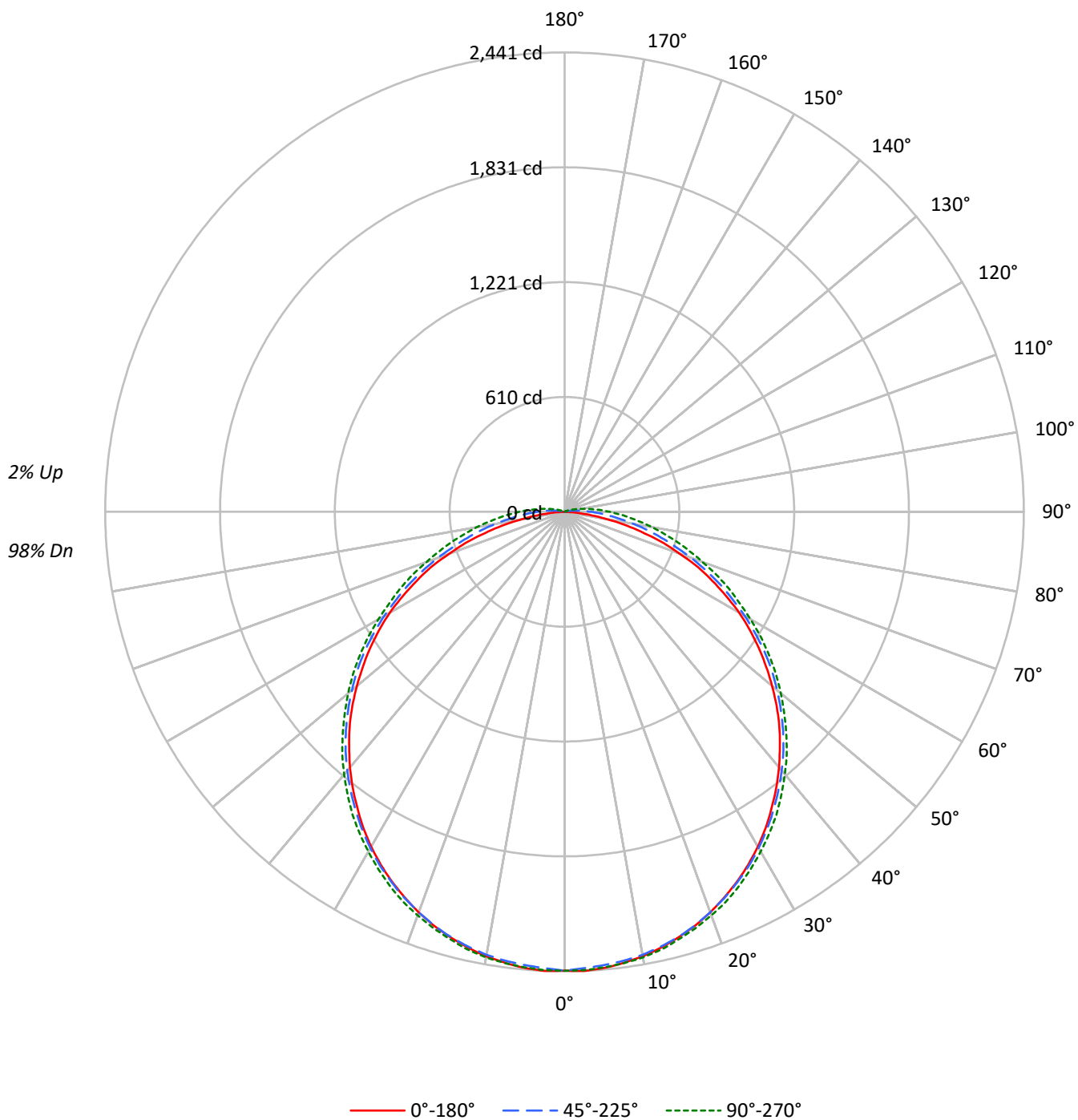
Input Watts (W): 67.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	P3	10/30/2015	4/30/2016
Power Meter	IN0214	1/12/2016	1/12/2017
AC Power Source	IN0062	1/12/2016	1/12/2017
DC Power Supply	--	--	--
Room Thermometer	IN0145	1/13/2016	1/13/2017

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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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101			98
1	108	102	98	94	105	100	96	92	95	92	89	91	88	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	77	73	79	75	71	76	72	69			67
3	89	78	69	63	86	76	68	62	73	66	61	70	64	59	67	62	58			56
4	81	69	60	53	79	67	59	52	65	57	52	62	56	51	60	54	50			47
5	75	61	52	45	72	60	52	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	40	67	54	46	39	52	45	39	50	44	38	49	43	38			36
7	64	50	41	35	62	49	41	35	47	40	34	46	39	34	44	38	34			32
8	59	46	37	31	58	45	37	31	43	36	31	42	35	30	41	35	30			28
9	55	42	34	28	54	41	33	28	40	33	28	39	32	27	38	32	27			25
10	52	39	31	25	51	38	30	25	37	30	25	36	29	25	35	29	25			23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	9842	9842	9842
5°	9822	9622	9631
10°	9757	9450	9438
15°	9673	9259	9207
20°	9582	9046	8982
25°	9474	8828	8753
30°	9350	8594	8493
35°	9192	8338	8236
40°	9028	8068	7936
45°	8851	7774	7612
50°	8621	7434	7263
55°	8372	7061	6879
60°	8075	6578	6430
65°	7594	6036	5986
70°	6902	5399	5469
75°	5920	4700	4999
80°	4452	4015	4569
85°	2381	3321	4161

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 8851 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	230.7	3.1
10°-20°	661.8	9.0
20°-30°	1004.2	13.6
30°-40°	1214.3	16.5
40°-50°	1267.0	17.2
50°-60°	1158.4	15.7
60°-70°	903.0	12.2
70°-80°	564.9	7.7
80°-90°	256.6	3.5
90°-100°	86.0	1.2
100°-110°	21.6	0.3
110°-120°	3.4	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°	1896.8	25.7
0°-40°	3111.1	42.2
0°-60°	5536.5	75.1
0°-90°	7261.0	98.5
90°-120°	111.0	1.5
90°-150°	111.0	1.5
90°-180°	111.0	1.5
0°-180°	7372.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2438	2438	2438	2438	2438	
5°	2433	2428	2418	2429	2429	231
15°	2340	2344	2338	2351	2351	661
25°	2169	2170	2173	2191	2194	999
35°	1920	1928	1936	1956	1964	1202
45°	1615	1630	1643	1659	1667	1245
55°	1260	1275	1299	1318	1327	1126
65°	866	881	912	948	963	857
75°	439	466	533	597	620	468
85°	76	140	241	318	347	96
90°	1	52	142	213	239	3
95°	1	14	74	133	154	0
105°	1	2	12	36	48	1
115°	2	2	2	6	9	1
125°	0	0	0	0	0	0
135°	0	0	0	0	0	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0

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CATALOG NUMBER: HVL8-4-LD4-3LO-30-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2438.2	2438.2	2438.2	2438.2	2438.2
2.5°	2441.1	2437.6	2426.7	2437.6	2437.1
5°	2433.0	2428.4	2417.5	2429.0	2429.0
7.5°	2416.9	2415.2	2405.4	2418.7	2418.7
10°	2398.0	2397.4	2389.4	2403.7	2404.3
12.5°	2371.5	2373.8	2366.4	2380.2	2381.9
15°	2340.5	2344.5	2338.2	2351.4	2350.8
17.5°	2306.6	2308.9	2304.3	2319.2	2318.7
20°	2264.6	2267.5	2264.1	2279.6	2281.3
22.5°	2218.1	2222.1	2221.5	2237.6	2242.2
25°	2168.6	2170.4	2172.7	2191.1	2194.5
27.5°	2114.0	2116.9	2120.9	2137.6	2141.1
30°	2054.3	2058.9	2063.5	2080.7	2085.3
32.5°	1991.0	1995.6	2001.4	2023.8	2026.1
35°	1919.8	1928.4	1936.4	1956.0	1964.0
37.5°	1848.5	1859.4	1866.9	1887.6	1893.9
40°	1773.2	1784.1	1796.2	1818.0	1822.0
42.5°	1694.4	1707.1	1721.5	1741.0	1747.9
45°	1615.1	1629.5	1642.7	1658.8	1666.9
47.5°	1529.5	1543.9	1560.0	1578.3	1583.5
50°	1441.0	1457.6	1474.9	1492.1	1501.3
52.5°	1350.2	1370.3	1389.8	1408.2	1416.8
55°	1260.5	1275.4	1299.0	1318.0	1326.6
57.5°	1167.4	1180.0	1201.3	1232.3	1236.9
60°	1072.5	1084.0	1105.9	1131.2	1141.5
62.5°	967.9	983.4	1006.4	1038.6	1047.8
65°	866.2	881.1	911.6	947.8	962.8
67.5°	767.9	773.1	812.2	850.1	874.2
70°	651.8	671.3	716.7	763.3	781.7
72.5°	551.8	571.3	621.3	675.9	698.9
75°	438.6	465.6	533.4	597.2	619.6
77.5°	339.1	369.0	452.9	517.3	543.2
80°	236.8	283.4	374.8	447.2	475.3
82.5°	148.9	206.3	304.1	379.9	404.6
85°	75.9	140.2	240.8	318.4	346.6
87.5°	20.1	90.8	187.4	261.5	290.3
90°	0.6	52.3	142.0	213.2	239.1
92.5°	0.6	29.3	105.8	169.6	196.0
95°	0.6	13.8	73.6	133.3	154.0
97.5°	0.6	5.7	50.6	100.6	121.3
100°	0.6	2.9	32.2	73.0	90.8
102.5°	1.1	1.7	20.1	52.3	66.7
105°	1.1	1.7	12.1	35.6	47.7
107.5°	1.1	1.7	6.9	24.1	32.8
110°	1.7	1.7	4.0	14.9	21.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.7	1.7	2.3	9.8	14.4
115°	1.7	1.7	2.3	6.3	9.2
117.5°	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
137.5°	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)