

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: P517599

Luminaire Tested: HVL12-8-LD4-1LO-35-UNV-C-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: P517599
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-1LO-35-UNV-C-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5958.0 lumens
Efficiency: N/A
Efficacy: 126.0 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 8' x H: 0.17')
CIE Type: Direct

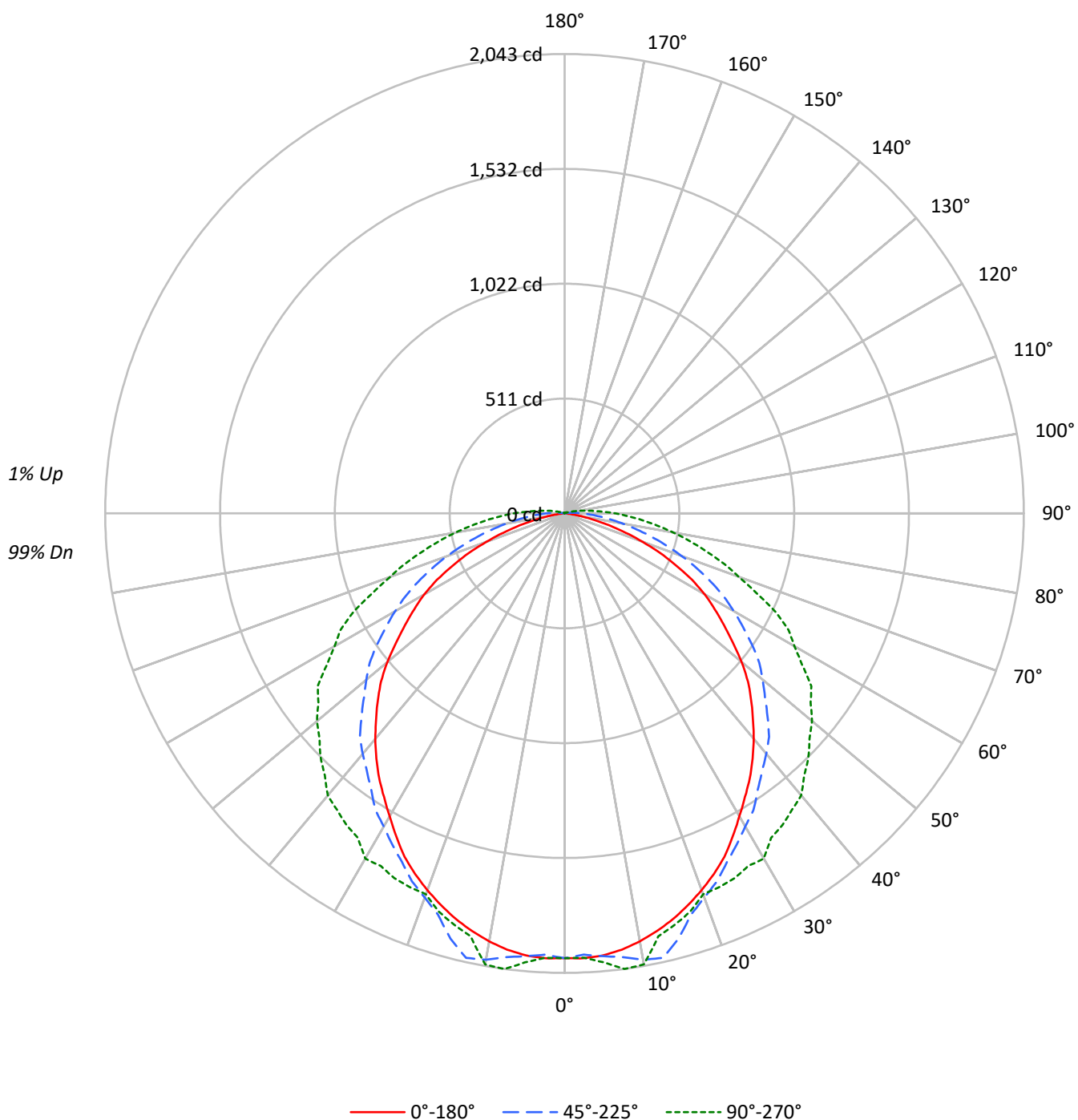
Input Watts (W): 47.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	78	73	80	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	51	62	56	51	60	54	50			47
5	75	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	39	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°	2661	2661	2661
5°	2660	2638	2667
10°	2630	2690	2702
15°	2587	2634	2526
20°	2533	2483	2433
25°	2477	2391	2466
30°	2388	2320	2512
35°	2327	2253	2487
40°	2260	2208	2524
45°	2189	2145	2502
50°	2102	2079	2510
55°	1970	2009	2539
60°	1873	1905	2466
65°	1669	1779	2429
70°	1376	1607	2227
75°	999	1391	2094
80°	578	1176	1961
85°	231	957	1845

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 2539 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	190.1	3.2
10°-20°	541.3	9.1
20°-30°	805.4	13.5
30°-40°	968.1	16.2
40°-50°	1019.0	17.1
50°-60°	945.5	15.9
60°-70°	747.6	12.5
70°-80°	456.7	7.7
80°-90°	199.0	3.3
90°-100°	61.9	1.0
100°-110°	13.9	0.2
110°-120°	5.6	0.1
120°-130°	3.1	0.1
130°-140°	0.8	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°	1536.8	25.8
0°-40°	2504.9	42.0
0°-60°	4469.4	75.0
0°-90°	5872.6	98.6
90°-120°	81.4	1.4
90°-150°	85.4	1.4
90°-180°	85.0	1.4
0°-180°	5958.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1978	1978	1978	1978	1978	
5°	1973	1969	1976	1998	2004	187
15°	1867	1939	1958	1893	1894	526
25°	1684	1792	1710	1761	1790	773
35°	1437	1477	1499	1635	1691	898
45°	1174	1180	1277	1479	1534	905
55°	865	879	1018	1241	1340	777
65°	548	565	718	950	1036	542
75°	207	274	400	615	654	226
85°	18	64	156	303	347	29
90°	0	19	82	192	226	1
95°	0	5	36	105	128	0
105°	0	3	7	20	29	1
115°	0	2	6	9	10	1
125°	0	1	2	6	8	1
135°	1	1	1	2	3	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1977.7	1977.7	1977.7	1977.7	1977.7
2.5°	1980.1	1974.9	1964.0	1974.5	1977.3
5°	1972.9	1968.9	1975.7	1997.9	2003.5
7.5°	1956.4	1971.7	1989.8	2030.1	2043.0
10°	1931.8	1960.8	2015.2	2049.4	2036.1
12.5°	1902.0	1951.1	2024.1	1957.2	1926.2
15°	1867.3	1939.1	1958.0	1893.1	1894.3
17.5°	1826.7	1929.0	1870.6	1869.0	1857.3
20°	1782.7	1895.1	1817.8	1814.6	1802.1
22.5°	1735.6	1850.4	1771.1	1764.6	1798.5
25°	1684.4	1792.0	1710.2	1761.4	1790.0
27.5°	1620.4	1715.5	1659.5	1732.0	1767.8
30°	1555.5	1636.5	1607.5	1708.6	1772.3
32.5°	1494.7	1553.9	1564.8	1699.7	1710.2
35°	1437.1	1477.0	1499.1	1635.3	1690.9
37.5°	1373.8	1384.7	1443.5	1608.3	1661.9
40°	1309.4	1302.5	1396.8	1564.0	1638.1
42.5°	1240.1	1237.6	1347.2	1541.8	1578.9
45°	1174.4	1179.6	1276.7	1479.0	1534.2
47.5°	1107.1	1114.0	1209.8	1410.1	1478.6
50°	1029.0	1037.8	1150.2	1348.8	1437.1
52.5°	944.3	961.3	1092.2	1290.8	1379.9
55°	865.0	879.1	1018.5	1241.3	1340.0
57.5°	792.5	800.9	942.3	1178.8	1253.4
60°	721.2	723.2	870.6	1109.5	1180.8
62.5°	639.4	643.0	796.9	1027.7	1123.2
65°	547.5	564.8	717.5	949.6	1035.8
67.5°	461.7	491.9	636.5	877.9	923.0
70°	369.8	421.0	557.2	793.7	825.5
72.5°	285.6	345.7	475.8	699.4	744.1
75°	207.1	274.4	400.1	614.8	653.5
77.5°	139.4	207.9	329.2	521.3	572.5
80°	83.4	151.9	265.9	434.7	492.3
82.5°	42.7	101.9	206.3	364.6	416.2
85°	18.5	64.5	155.9	302.6	347.3
87.5°	5.2	36.7	114.8	244.5	282.4
90°	0.4	19.3	81.8	191.8	226.0
92.5°	0.4	9.3	57.6	145.0	171.2
95°	0.4	4.8	35.9	105.2	128.5
97.5°	0.4	2.8	21.8	74.5	94.3
100°	0.4	2.4	12.9	49.6	67.3
102.5°	0.4	2.8	8.9	31.4	43.9
105°	0.4	2.8	7.3	20.5	29.0
107.5°	0.8	2.8	6.4	15.3	20.1
110°	0.4	2.4	6.8	11.7	15.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	2.0	6.4	9.7	11.7
115°	0.4	1.6	5.6	9.3	9.7
117.5°	0.8	1.2	4.4	9.3	9.7
120°	0.8	0.8	3.6	8.9	10.1
122.5°	0.8	0.8	2.8	8.1	9.7
125°	0.4	0.8	2.4	6.0	8.5
127.5°	0.8	0.8	2.0	4.8	6.4
130°	0.8	0.8	1.6	3.6	4.8
132.5°	0.8	0.8	1.2	2.8	3.6
135°	0.8	0.8	0.8	2.0	2.8
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)