

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: P517388

Luminaire Tested: HVL12-2-LD4-3HI-30-UNV-C-EDD

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: P517388
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-3HI-30-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7045.0 lumens
Efficiency: N/A
Efficacy: 108.9 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 2' x H: 0.17')
CIE Type: Direct

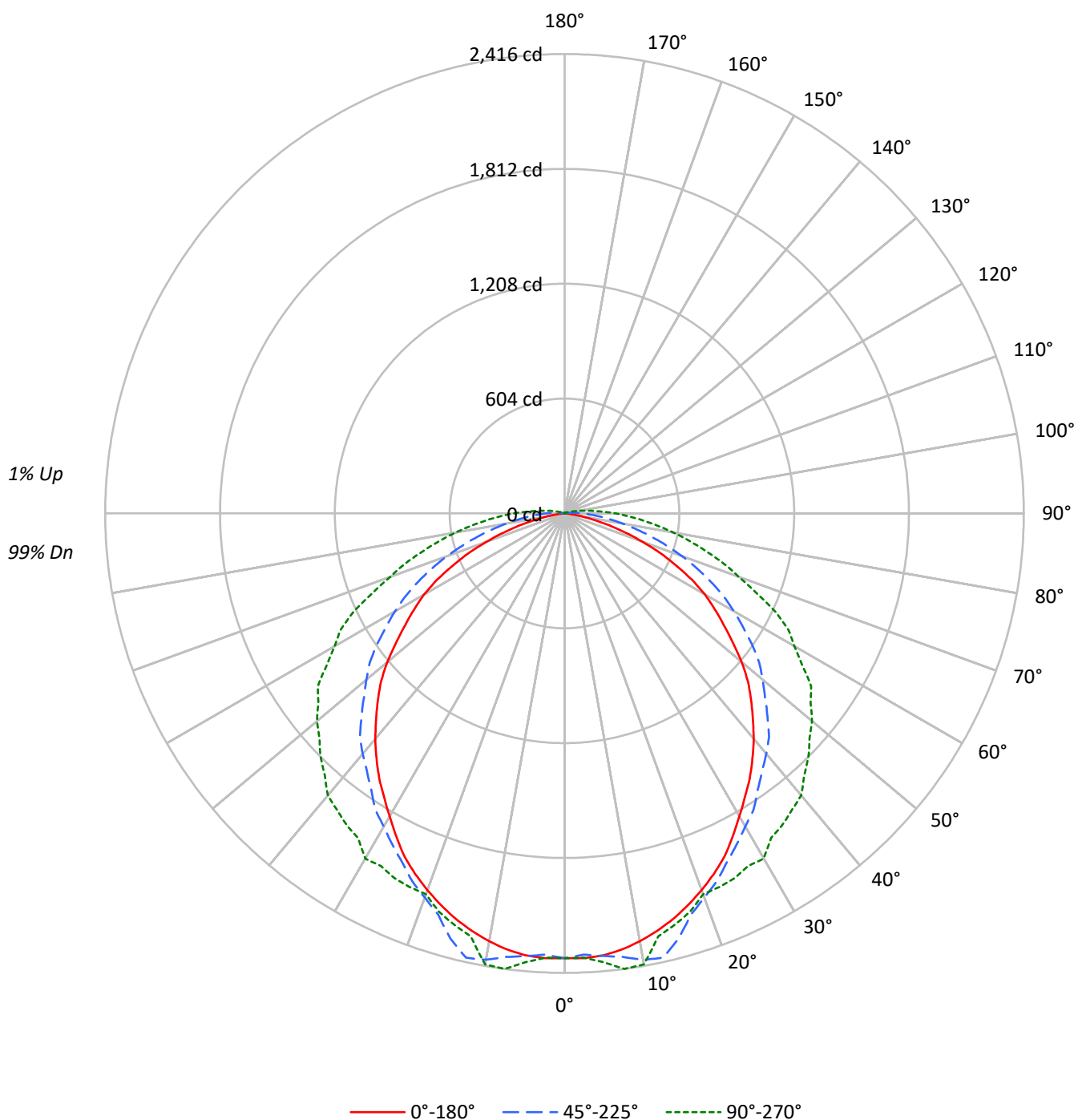
Input Watts (W): 64.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	12586	12586	12586
5°	12512	12429	12615
10°	12302	12629	12782
15°	12034	12316	11947
20°	11718	11566	11506
25°	11385	11094	11663
30°	10906	10718	11880
35°	10549	10363	11763
40°	10166	10104	11939
45°	9757	9764	11835
50°	9267	9406	11870
55°	8576	9022	12008
60°	8020	8483	11662
65°	6994	7834	11490
70°	5599	6977	10535
75°	3884	5926	9905
80°	2075	4865	9274
85°	693	3769	8727

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 12008 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	224.8	3.2
10°-20°	640.1	9.1
20°-30°	952.4	13.5
30°-40°	1144.7	16.2
40°-50°	1204.9	17.1
50°-60°	1118.0	15.9
60°-70°	884.0	12.5
70°-80°	540.0	7.7
80°-90°	235.3	3.3
90°-100°	73.2	1.0
100°-110°	16.5	0.2
110°-120°	6.6	0.1
120°-130°	3.7	0.1
130°-140°	1.0	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°	1817.2	25.8
0°-40°	2961.9	42.0
0°-60°	5284.8	75.0
0°-90°	6944.0	98.6
90°-120°	96.3	1.4
90°-150°	101.1	1.4
90°-180°	101.0	1.4
0°-180°	7045.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2339	2339	2339	2339	2339	
5°	2333	2328	2336	2362	2369	221
15°	2208	2293	2315	2238	2240	622
25°	1992	2119	2022	2083	2117	914
35°	1699	1746	1773	1934	1999	1062
45°	1389	1395	1510	1749	1814	1070
55°	1023	1040	1204	1468	1584	919
65°	647	668	848	1123	1225	641
75°	245	324	473	727	773	267
85°	22	76	184	358	411	34
90°	0	23	97	227	267	1
95°	0	6	42	124	152	0
105°	0	3	9	24	34	1
115°	0	2	7	11	11	1
125°	0	1	3	7	10	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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CATALOG NUMBER: HVL12-2-LD4-3HI-30-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2338.6	2338.6	2338.6	2338.6	2338.6
2.5°	2341.4	2335.2	2322.4	2334.7	2338.1
5°	2332.8	2328.1	2336.2	2362.4	2369.0
7.5°	2313.3	2331.4	2352.8	2400.5	2415.7
10°	2284.2	2318.5	2382.9	2423.4	2407.6
12.5°	2249.0	2307.1	2393.3	2314.3	2277.6
15°	2208.0	2292.8	2315.2	2238.5	2239.9
17.5°	2159.9	2280.9	2211.8	2209.9	2196.1
20°	2108.0	2240.9	2149.4	2145.6	2130.9
22.5°	2052.3	2188.0	2094.2	2086.6	2126.6
25°	1991.8	2118.9	2022.2	2082.7	2116.6
27.5°	1916.0	2028.4	1962.2	2048.0	2090.4
30°	1839.3	1935.1	1900.8	2020.3	2095.6
32.5°	1767.4	1837.4	1850.3	2009.9	2022.2
35°	1699.3	1746.4	1772.6	1933.6	1999.4
37.5°	1624.5	1637.3	1706.9	1901.7	1965.1
40°	1548.2	1540.1	1651.6	1849.3	1937.0
42.5°	1466.3	1463.4	1593.0	1823.1	1866.9
45°	1388.7	1394.8	1509.7	1748.8	1814.1
47.5°	1309.1	1317.2	1430.6	1667.3	1748.3
50°	1216.7	1227.2	1360.1	1594.9	1699.3
52.5°	1116.6	1136.6	1291.5	1526.3	1631.6
55°	1022.8	1039.5	1204.3	1467.7	1584.4
57.5°	937.0	947.0	1114.3	1393.9	1482.0
60°	852.7	855.1	1029.5	1312.0	1396.3
62.5°	756.0	760.3	942.3	1215.2	1328.2
65°	647.4	667.9	848.4	1122.8	1224.8
67.5°	545.9	581.7	752.7	1038.0	1091.4
70°	437.3	497.8	658.8	938.5	976.1
72.5°	337.8	408.7	562.6	827.0	879.9
75°	244.9	324.4	473.0	727.0	772.7
77.5°	164.8	245.8	389.2	616.4	676.9
80°	98.6	179.6	314.4	514.0	582.1
82.5°	50.5	120.5	243.9	431.1	492.1
85°	21.9	76.2	184.4	357.8	410.6
87.5°	6.2	43.4	135.8	289.2	333.9
90°	0.5	22.9	96.7	226.8	267.3
92.5°	0.5	11.0	68.1	171.5	202.5
95°	0.5	5.7	42.4	124.3	152.0
97.5°	0.5	3.3	25.7	88.1	111.5
100°	0.5	2.9	15.2	58.6	79.6
102.5°	0.5	3.3	10.5	37.2	51.9
105°	0.5	3.3	8.6	24.3	34.3
107.5°	1.0	3.3	7.6	18.1	23.8
110°	0.5	2.9	8.1	13.8	18.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	2.4	7.6	11.4	13.8
115°	0.5	1.9	6.7	11.0	11.4
117.5°	1.0	1.4	5.2	11.0	11.4
120°	1.0	1.0	4.3	10.5	11.9
122.5°	1.0	1.0	3.3	9.5	11.4
125°	0.5	1.0	2.9	7.1	10.0
127.5°	1.0	1.0	2.4	5.7	7.6
130°	1.0	1.0	1.9	4.3	5.7
132.5°	1.0	1.0	1.4	3.3	4.3
135°	1.0	1.0	1.0	2.4	3.3
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)