

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: P517387

Luminaire Tested: HVL12-2-LD4-3HI-30-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: P517387
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-90
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6106.0 lumens
Efficiency: N/A
Efficacy: 94.4 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

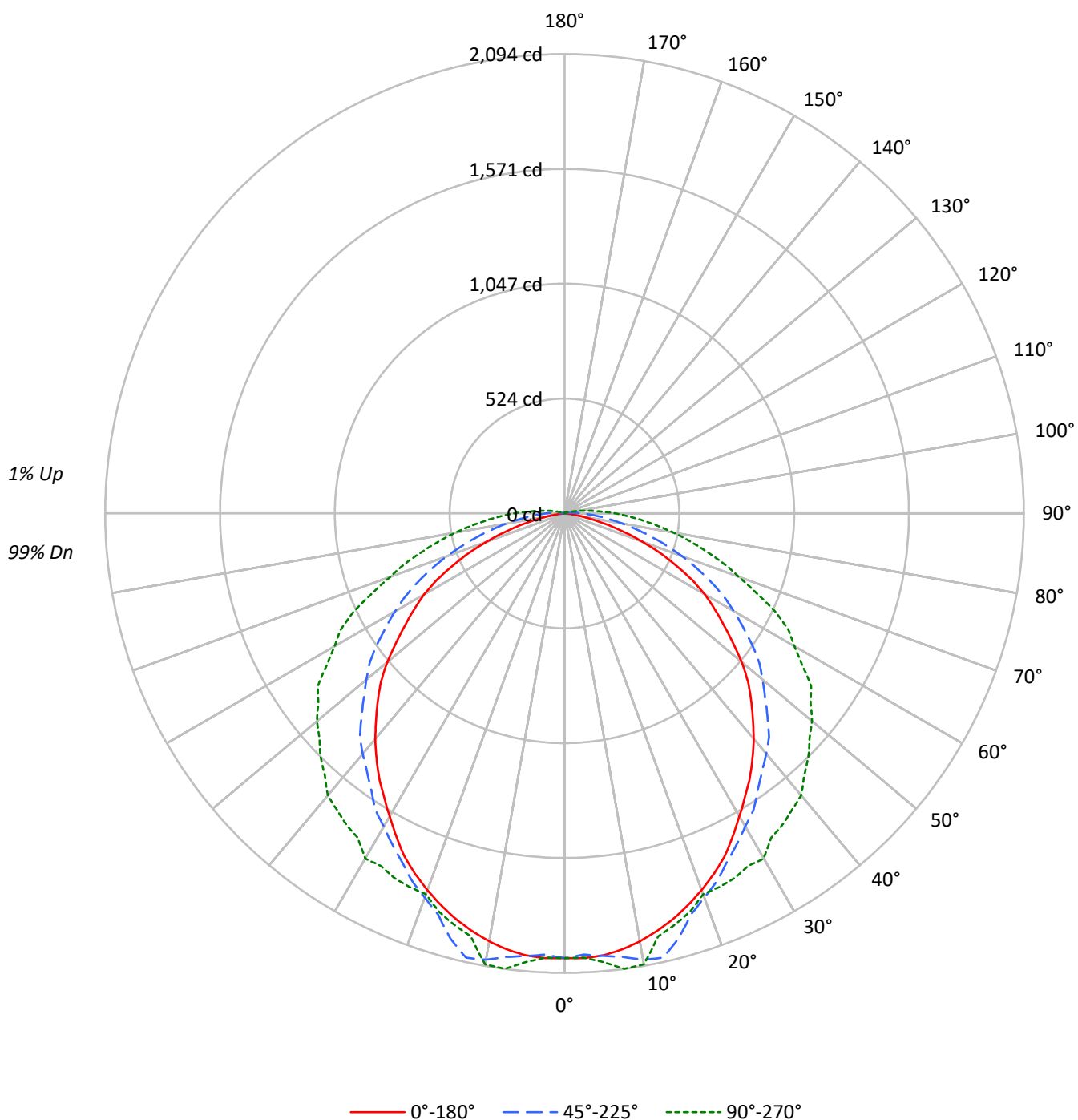
Input Watts (W): 64.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	10909	10909	10909
5°	10844	10772	10934
10°	10663	10946	11078
15°	10430	10675	10355
20°	10156	10024	9972
25°	9868	9615	10108
30°	9452	9290	10297
35°	9143	8982	10195
40°	8811	8758	10347
45°	8456	8462	10257
50°	8031	8152	10288
55°	7433	7820	10408
60°	6952	7352	10108
65°	6062	6790	9958
70°	4853	6047	9131
75°	3366	5136	8585
80°	1799	4217	8038
85°	601	3266	7564

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 10408 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	194.8	3.2
10°-20°	554.8	9.1
20°-30°	825.4	13.5
30°-40°	992.1	16.2
40°-50°	1044.3	17.1
50°-60°	969.0	15.9
60°-70°	766.2	12.5
70°-80°	468.0	7.7
80°-90°	203.9	3.3
90°-100°	63.5	1.0
100°-110°	14.3	0.2
110°-120°	5.7	0.1
120°-130°	3.2	0.1
130°-140°	0.9	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°	1575.0	25.8
0°-40°	2567.1	42.0
0°-60°	4580.4	75.0
0°-90°	6018.4	98.6
90°-120°	83.5	1.4
90°-150°	87.6	1.4
90°-180°	88.0	1.4
0°-180°	6106.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2027	2027	2027	2027	2027	
5°	2022	2018	2025	2048	2053	192
15°	1914	1987	2007	1940	1941	539
25°	1726	1836	1753	1805	1834	793
35°	1473	1514	1536	1676	1733	920
45°	1204	1209	1308	1516	1572	928
55°	886	901	1044	1272	1373	796
65°	561	579	735	973	1062	556
75°	212	281	410	630	670	232
85°	19	66	160	310	356	29
90°	0	20	84	196	232	1
95°	0	5	37	108	132	0
105°	0	3	7	21	30	1
115°	0	2	6	10	10	1
125°	0	1	2	6	9	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-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2026.9	2026.9	2026.9	2026.9	2026.9
2.5°	2029.3	2024.0	2012.8	2023.6	2026.4
5°	2021.9	2017.8	2024.8	2047.5	2053.3
7.5°	2005.0	2020.7	2039.2	2080.5	2093.7
10°	1979.8	2009.5	2065.3	2100.4	2086.7
12.5°	1949.2	1999.6	2074.3	2005.8	1974.0
15°	1913.7	1987.2	2006.6	1940.2	1941.4
17.5°	1872.0	1976.9	1917.0	1915.4	1903.4
20°	1827.0	1942.2	1862.9	1859.6	1846.8
22.5°	1778.7	1896.4	1815.0	1808.4	1843.1
25°	1726.3	1836.5	1752.7	1805.1	1834.5
27.5°	1660.6	1758.1	1700.7	1775.0	1811.7
30°	1594.2	1677.1	1647.4	1751.1	1816.3
32.5°	1531.8	1592.5	1603.7	1742.0	1752.7
35°	1472.8	1513.6	1536.4	1675.9	1732.9
37.5°	1407.9	1419.1	1479.4	1648.2	1703.2
40°	1341.9	1334.9	1431.5	1602.8	1678.8
42.5°	1270.9	1268.4	1380.7	1580.1	1618.1
45°	1203.6	1208.9	1308.4	1515.7	1572.3
47.5°	1134.6	1141.6	1239.9	1445.1	1515.3
50°	1054.5	1063.6	1178.8	1382.3	1472.8
52.5°	967.8	985.1	1119.3	1322.9	1414.1
55°	886.5	900.9	1043.8	1272.1	1373.3
57.5°	812.1	820.8	965.7	1208.1	1284.5
60°	739.1	741.1	892.2	1137.1	1210.2
62.5°	655.3	659.0	816.7	1053.3	1151.1
65°	561.1	578.9	735.4	973.2	1061.5
67.5°	473.2	504.1	652.4	899.7	945.9
70°	379.0	431.5	571.0	813.4	846.0
72.5°	292.7	354.3	487.6	716.8	762.6
75°	212.2	281.2	410.0	630.1	669.7
77.5°	142.9	213.0	337.3	534.3	586.7
80°	85.5	155.7	272.5	445.5	504.5
82.5°	43.8	104.5	211.4	373.7	426.5
85°	19.0	66.1	159.8	310.1	355.9
87.5°	5.4	37.6	117.7	250.6	289.4
90°	0.4	19.8	83.8	196.5	231.6
92.5°	0.4	9.5	59.0	148.6	175.5
95°	0.4	5.0	36.7	107.8	131.7
97.5°	0.4	2.9	22.3	76.4	96.6
100°	0.4	2.5	13.2	50.8	69.0
102.5°	0.4	2.9	9.1	32.2	45.0
105°	0.4	2.9	7.4	21.1	29.7
107.5°	0.8	2.9	6.6	15.7	20.6
110°	0.4	2.5	7.0	12.0	16.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	2.1	6.6	9.9	12.0
115°	0.4	1.7	5.8	9.5	9.9
117.5°	0.8	1.2	4.5	9.5	9.9
120°	0.8	0.8	3.7	9.1	10.3
122.5°	0.8	0.8	2.9	8.3	9.9
125°	0.4	0.8	2.5	6.2	8.7
127.5°	0.8	0.8	2.1	5.0	6.6
130°	0.8	0.8	1.7	3.7	5.0
132.5°	0.8	0.8	1.2	2.9	3.7
135°	0.8	0.8	0.8	2.1	2.9
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)