

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: P517420

Luminaire Tested: HVL12-2-LD4-3STD-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: P517420
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-3STD-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: 5475.0 lumens
Efficiency: N/A
Efficacy: 111.5 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

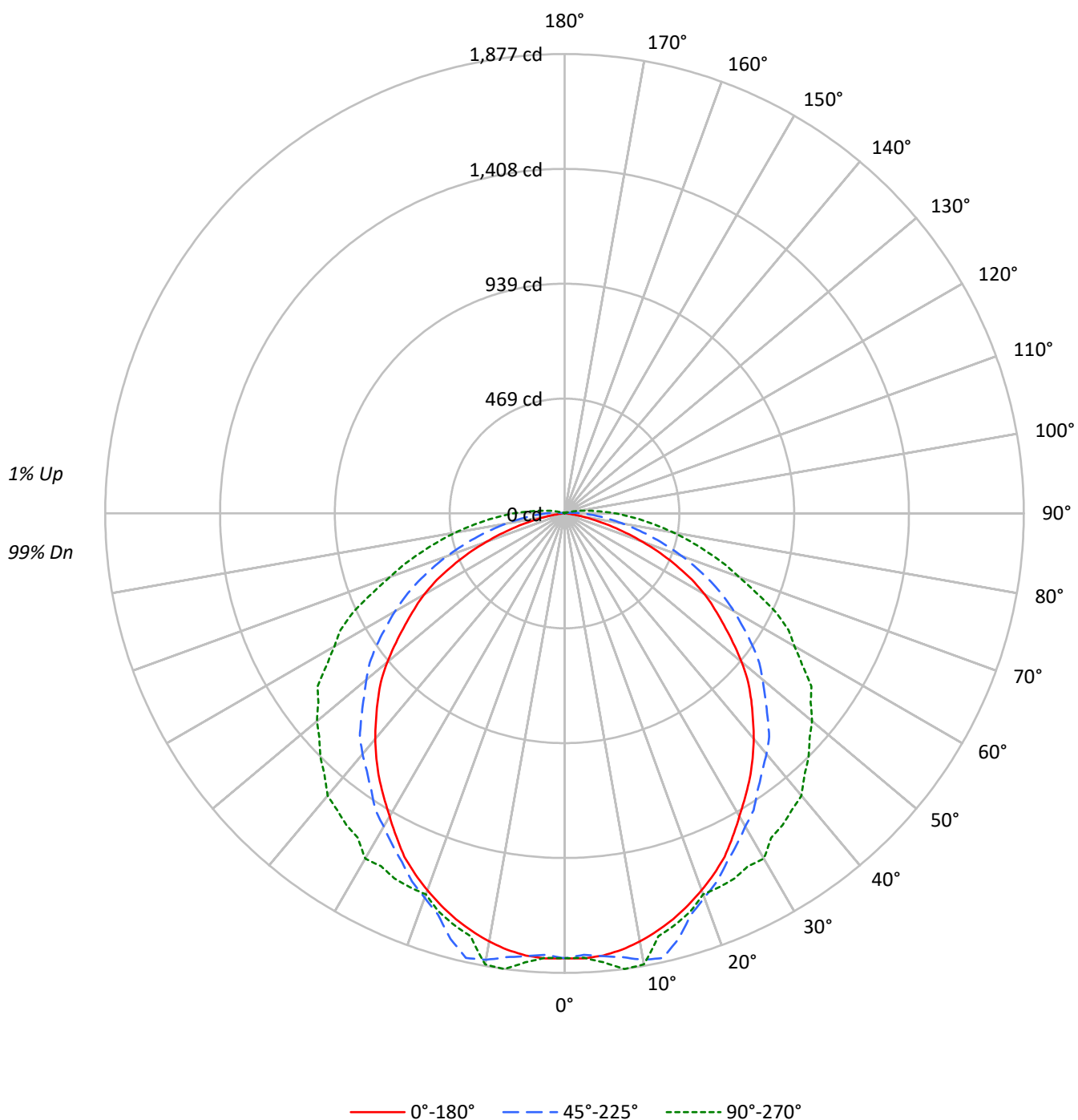
Input Watts (W): 49.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	9781	9781	9781
5°	9724	9659	9804
10°	9561	9814	9934
15°	9352	9572	9285
20°	9106	8989	8942
25°	8848	8622	9063
30°	8475	8330	9232
35°	8198	8054	9142
40°	7901	7852	9278
45°	7582	7588	9197
50°	7201	7310	9225
55°	6665	7011	9332
60°	6233	6592	9063
65°	5435	6089	8929
70°	4352	5423	8187
75°	3018	4605	7698
80°	1612	3781	7207
85°	538	2929	6782

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 9332 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	174.7	3.2
10°-20°	497.4	9.1
20°-30°	740.1	13.5
30°-40°	889.6	16.2
40°-50°	936.4	17.1
50°-60°	868.8	15.9
60°-70°	687.0	12.5
70°-80°	419.6	7.7
80°-90°	182.8	3.3
90°-100°	56.9	1.0
100°-110°	12.8	0.2
110°-120°	5.1	0.1
120°-130°	2.9	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°	1412.2	25.8
0°-40°	2301.8	42.0
0°-60°	4107.1	75.0
0°-90°	5396.5	98.6
90°-120°	74.8	1.4
90°-150°	78.5	1.4
90°-180°	78.0	1.4
0°-180°	5475.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1817	1817	1817	1817	1817	
5°	1813	1809	1816	1836	1841	172
15°	1716	1782	1799	1740	1741	483
25°	1548	1647	1572	1619	1645	711
35°	1321	1357	1378	1503	1554	825
45°	1079	1084	1173	1359	1410	832
55°	795	808	936	1141	1231	714
65°	503	519	659	873	952	498
75°	190	252	368	565	600	208
85°	17	59	143	278	319	26
90°	0	18	75	176	208	1
95°	0	4	33	97	118	0
105°	0	3	7	19	27	1
115°	0	2	5	8	9	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°	1817.4	1817.4	1817.4	1817.4	1817.4
2.5°	1819.6	1814.8	1804.8	1814.4	1817.0
5°	1813.0	1809.3	1815.6	1835.9	1841.1
7.5°	1797.8	1811.8	1828.5	1865.5	1877.4
10°	1775.2	1801.9	1851.8	1883.3	1871.1
12.5°	1747.8	1793.0	1860.0	1798.5	1770.0
15°	1716.0	1781.9	1799.3	1739.7	1740.8
17.5°	1678.6	1772.6	1718.9	1717.4	1706.7
20°	1638.2	1741.5	1670.4	1667.5	1656.0
22.5°	1594.9	1700.4	1627.5	1621.6	1652.7
25°	1547.9	1646.7	1571.6	1618.6	1644.9
27.5°	1489.0	1576.4	1524.9	1591.6	1624.5
30°	1429.4	1503.8	1477.2	1570.1	1628.6
32.5°	1373.5	1427.9	1437.9	1562.0	1571.6
35°	1320.6	1357.2	1377.6	1502.7	1553.8
37.5°	1262.4	1272.4	1326.5	1477.9	1527.2
40°	1203.2	1196.9	1283.5	1437.2	1505.3
42.5°	1139.5	1137.3	1238.0	1416.8	1450.9
45°	1079.2	1084.0	1173.2	1359.1	1409.8
47.5°	1017.4	1023.7	1111.8	1295.8	1358.7
50°	945.5	953.7	1057.0	1239.5	1320.6
52.5°	867.8	883.3	1003.7	1186.2	1268.0
55°	794.9	807.8	935.9	1140.6	1231.3
57.5°	728.2	736.0	865.9	1083.3	1151.7
60°	662.7	664.5	800.0	1019.6	1085.1
62.5°	587.5	590.9	732.3	944.4	1032.2
65°	503.1	519.0	659.4	872.6	951.8
67.5°	424.3	452.0	584.9	806.7	848.2
70°	339.9	386.9	512.0	729.3	758.6
72.5°	262.5	317.6	437.2	642.7	683.8
75°	190.3	252.1	367.6	565.0	600.5
77.5°	128.1	191.0	302.5	479.1	526.1
80°	76.6	139.6	244.3	399.5	452.4
82.5°	39.2	93.7	189.6	335.0	382.4
85°	17.0	59.2	143.3	278.0	319.1
87.5°	4.8	33.7	105.5	224.7	259.5
90°	0.4	17.8	75.2	176.2	207.7
92.5°	0.4	8.5	52.9	133.3	157.3
95°	0.4	4.4	32.9	96.6	118.1
97.5°	0.4	2.6	20.0	68.5	86.6
100°	0.4	2.2	11.8	45.5	61.8
102.5°	0.4	2.6	8.1	28.9	40.4
105°	0.4	2.6	6.7	18.9	26.7
107.5°	0.7	2.6	5.9	14.1	18.5
110°	0.4	2.2	6.3	10.7	14.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.7	1.9	5.9	8.9	10.7
115°	0.4	1.5	5.2	8.5	8.9
117.5°	0.7	1.1	4.1	8.5	8.9
120°	0.7	0.7	3.3	8.1	9.3
122.5°	0.7	0.7	2.6	7.4	8.9
125°	0.4	0.7	2.2	5.6	7.8
127.5°	0.7	0.7	1.9	4.4	5.9
130°	0.7	0.7	1.5	3.3	4.4
132.5°	0.7	0.7	1.1	2.6	3.3
135°	0.7	0.7	0.7	1.9	2.6
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)