

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: P517963

Luminaire Tested: HVL8-2-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: P517963
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3HI-30-UNV-C-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5848.0 lumens
Efficiency: N/A
Efficacy: 92.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

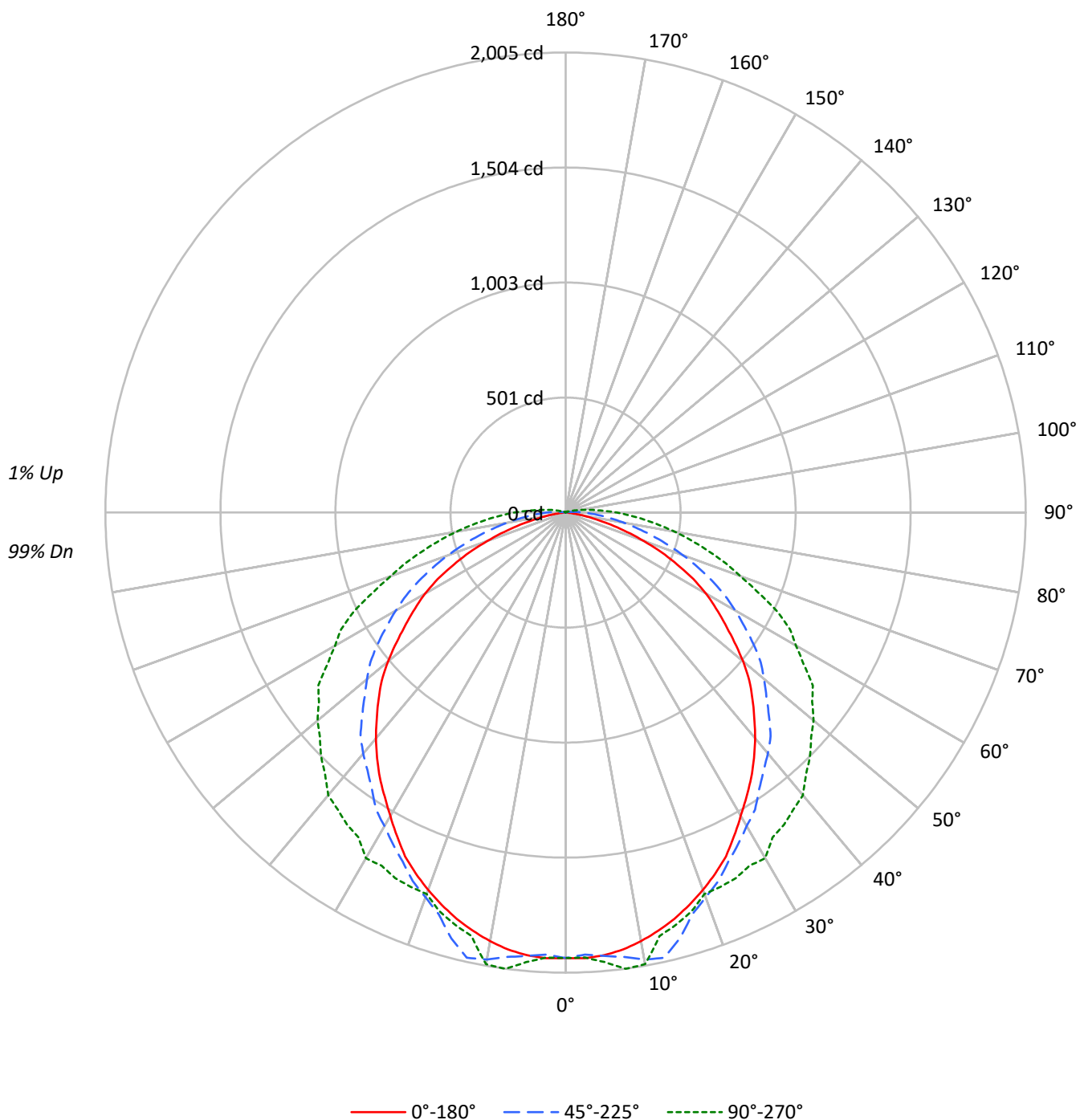
Input Watts (W): 63
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	15671	15671	15671
5°	15579	15397	15595
10°	15318	15567	15692
15°	14984	15108	14565
20°	14590	14117	13928
25°	14176	13471	14015
30°	13579	12946	14170
35°	13134	12446	13920
40°	12659	12062	14006
45°	12148	11578	13753
50°	11539	11069	13648
55°	10678	10526	13640
60°	9986	9796	13058
65°	8709	8936	12642
70°	6972	7834	11337
75°	4837	6516	10349
80°	2585	5192	9290
85°	863	3836	8184

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 13753 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	186.6	3.2
10°-20°	531.3	9.1
20°-30°	790.5	13.5
30°-40°	950.2	16.2
40°-50°	1000.2	17.1
50°-60°	928.0	15.9
60°-70°	733.8	12.5
70°-80°	448.2	7.7
80°-90°	195.3	3.3
90°-100°	60.8	1.0
100°-110°	13.7	0.2
110°-120°	5.5	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°	1508.4	25.8
0°-40°	2458.7	42.0
0°-60°	4386.9	75.0
0°-90°	5764.2	98.6
90°-120°	80.0	1.4
90°-150°	83.9	1.4
90°-180°	84.0	1.4
0°-180°	5848.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1941	1941	1941	1941	1941	
5°	1936	1932	1939	1961	1966	184
15°	1833	1903	1922	1858	1859	516
25°	1653	1759	1679	1729	1757	759
35°	1410	1450	1471	1605	1660	882
45°	1153	1158	1253	1452	1506	889
55°	849	863	1000	1218	1315	763
65°	537	554	704	932	1017	532
75°	203	269	393	603	641	222
85°	18	63	153	297	341	28
90°	0	19	80	188	222	1
95°	0	5	35	103	126	0
105°	0	3	7	20	28	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°	1941.2	1941.2	1941.2	1941.2	1941.2
2.5°	1943.6	1938.4	1927.8	1938.1	1940.8
5°	1936.5	1932.5	1939.2	1961.0	1966.5
7.5°	1920.3	1935.3	1953.1	1992.6	2005.3
10°	1896.1	1924.6	1978.0	2011.6	1998.6
12.5°	1866.9	1915.1	1986.7	1921.1	1890.6
15°	1832.9	1903.3	1921.8	1858.2	1859.4
17.5°	1792.9	1893.4	1836.0	1834.4	1823.0
20°	1749.8	1860.2	1784.2	1781.1	1768.8
22.5°	1703.6	1816.3	1738.4	1732.0	1765.2
25°	1653.3	1758.9	1678.6	1728.9	1756.9
27.5°	1590.5	1683.8	1628.8	1700.0	1735.2
30°	1526.8	1606.3	1577.8	1677.1	1739.5
32.5°	1467.1	1525.2	1535.9	1668.4	1678.6
35°	1410.5	1449.7	1471.4	1605.1	1659.7
37.5°	1348.5	1359.1	1416.9	1578.6	1631.2
40°	1285.2	1278.5	1371.0	1535.1	1607.9
42.5°	1217.2	1214.8	1322.4	1513.4	1549.7
45°	1152.7	1157.9	1253.2	1451.7	1505.8
47.5°	1086.7	1093.4	1187.5	1384.0	1451.3
50°	1010.0	1018.7	1129.0	1323.9	1410.5
52.5°	926.9	943.5	1072.0	1267.0	1354.4
55°	849.0	862.9	999.7	1218.4	1315.2
57.5°	777.8	786.1	924.9	1157.1	1230.2
60°	707.8	709.8	854.5	1089.0	1159.0
62.5°	627.6	631.1	782.2	1008.8	1102.5
65°	537.4	554.4	704.3	932.1	1016.7
67.5°	453.2	482.8	624.8	861.7	906.0
70°	363.0	413.2	546.9	779.0	810.3
72.5°	280.4	339.3	467.0	686.5	730.4
75°	203.3	269.3	392.7	603.4	641.4
77.5°	136.8	204.0	323.1	511.7	561.9
80°	81.9	149.1	261.0	426.7	483.2
82.5°	41.9	100.0	202.5	357.9	408.5
85°	18.2	63.3	153.0	297.0	340.9
87.5°	5.1	36.0	112.7	240.0	277.2
90°	0.4	19.0	80.3	188.2	221.8
92.5°	0.4	9.1	56.5	142.4	168.1
95°	0.4	4.7	35.2	103.2	126.1
97.5°	0.4	2.8	21.4	73.2	92.5
100°	0.4	2.4	12.7	48.6	66.0
102.5°	0.4	2.8	8.7	30.8	43.1
105°	0.4	2.8	7.1	20.2	28.5
107.5°	0.8	2.8	6.3	15.0	19.8
110°	0.4	2.4	6.7	11.5	15.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	2.0	6.3	9.5	11.5
115°	0.4	1.6	5.5	9.1	9.5
117.5°	0.8	1.2	4.3	9.1	9.5
120°	0.8	0.8	3.6	8.7	9.9
122.5°	0.8	0.8	2.8	7.9	9.5
125°	0.4	0.8	2.4	5.9	8.3
127.5°	0.8	0.8	2.0	4.7	6.3
130°	0.8	0.8	1.6	3.6	4.7
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)