

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: P517975

Luminaire Tested: HVL8-2-LD4-3HI-50-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: P517975
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3HI-50-UNV-C-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6329.0 lumens
Efficiency: N/A
Efficacy: 100.5 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

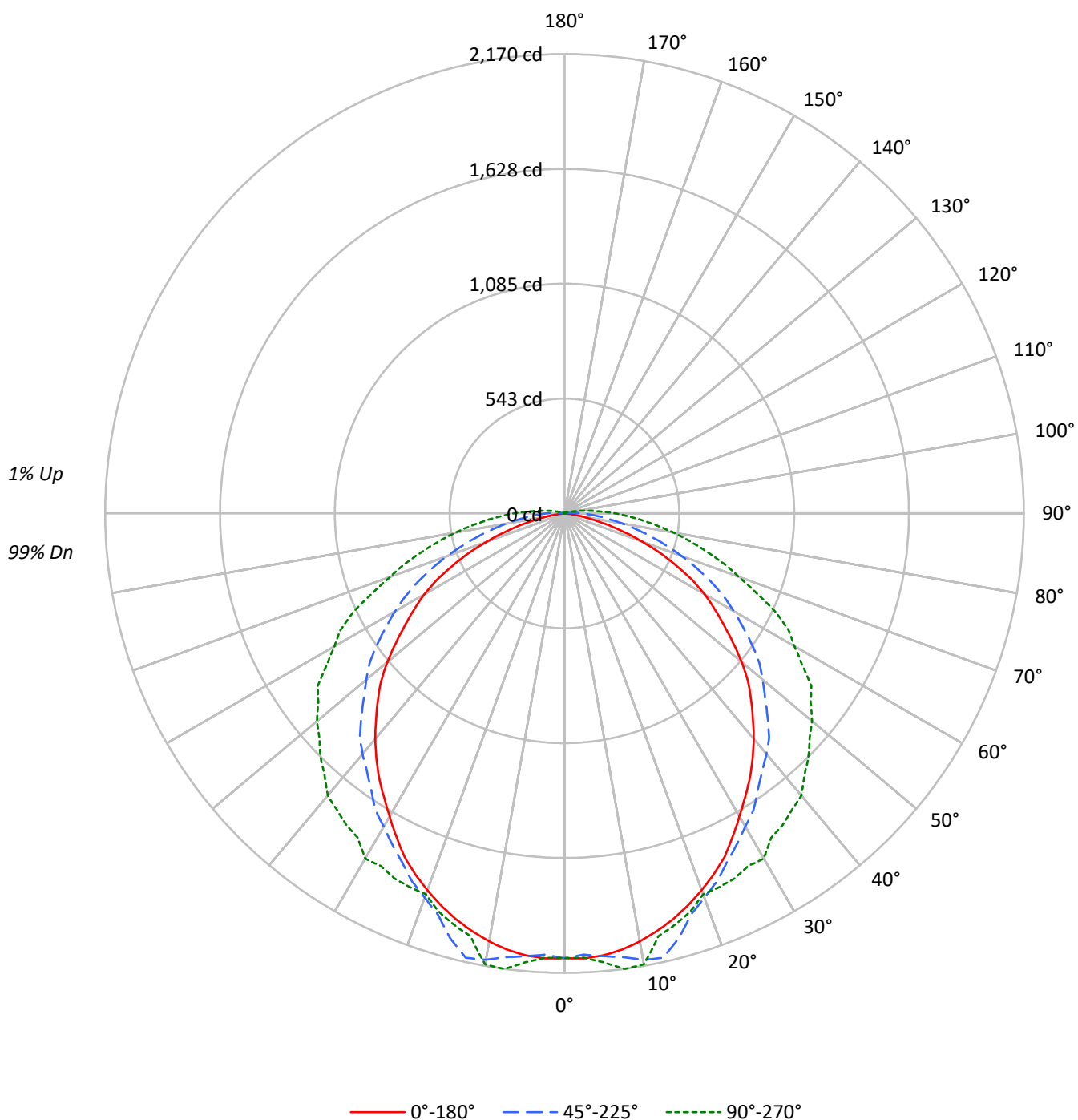
Input Watts (W): 63
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	16960	16960	16960
5°	16860	16664	16878
10°	16578	16848	16982
15°	16216	16350	15762
20°	15790	15278	15074
25°	15342	14580	15169
30°	14696	14011	15335
35°	14215	13471	15064
40°	13700	13055	15158
45°	13147	12530	14884
50°	12487	11979	14771
55°	11556	11392	14762
60°	10809	10602	14133
65°	9425	9671	13682
70°	7546	8479	12269
75°	5234	7052	11201
80°	2797	5620	10055
85°	934	4152	8857

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 14884 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	201.9	3.2
10°-20°	575.0	9.1
20°-30°	855.6	13.5
30°-40°	1028.4	16.2
40°-50°	1082.4	17.1
50°-60°	1004.4	15.9
60°-70°	794.1	12.5
70°-80°	485.1	7.7
80°-90°	211.3	3.3
90°-100°	65.8	1.0
100°-110°	14.8	0.2
110°-120°	5.9	0.1
120°-130°	3.4	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°	1632.5	25.8
0°-40°	2660.9	42.0
0°-60°	4747.7	75.0
0°-90°	6238.2	98.6
90°-120°	86.5	1.4
90°-150°	90.8	1.4
90°-180°	91.0	1.4
0°-180°	6329.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2101	2101	2101	2101	2101	
5°	2096	2092	2099	2122	2128	199
15°	1984	2060	2080	2011	2012	559
25°	1789	1904	1817	1871	1902	821
35°	1527	1569	1592	1737	1796	954
45°	1248	1253	1356	1571	1630	962
55°	919	934	1082	1319	1423	826
65°	582	600	762	1009	1100	576
75°	220	291	425	653	694	240
85°	20	68	166	321	369	30
90°	0	20	87	204	240	1
95°	0	5	38	112	136	0
105°	0	3	8	22	31	1
115°	0	2	6	10	10	1
125°	0	1	3	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2100.9	2100.9	2100.9	2100.9	2100.9
2.5°	2103.5	2097.9	2086.3	2097.5	2100.5
5°	2095.7	2091.5	2098.7	2122.3	2128.3
7.5°	2078.2	2094.5	2113.7	2156.5	2170.2
10°	2052.1	2082.9	2140.7	2177.1	2162.9
12.5°	2020.4	2072.6	2150.1	2079.1	2046.1
15°	1983.6	2059.8	2079.9	2011.0	2012.3
17.5°	1940.4	2049.1	1987.0	1985.3	1972.9
20°	1893.7	2013.2	1931.0	1927.6	1914.3
22.5°	1843.7	1965.6	1881.3	1874.5	1910.4
25°	1789.3	1903.6	1816.7	1871.1	1901.5
27.5°	1721.3	1822.3	1762.8	1839.8	1877.9
30°	1652.4	1738.4	1707.6	1815.0	1882.6
32.5°	1587.8	1650.7	1662.2	1805.6	1816.7
35°	1526.6	1568.9	1592.5	1737.1	1796.2
37.5°	1459.4	1470.9	1533.4	1708.4	1765.4
40°	1390.9	1383.6	1483.8	1661.4	1740.1
42.5°	1317.3	1314.7	1431.1	1637.8	1677.2
45°	1247.5	1253.1	1356.2	1571.1	1629.7
47.5°	1176.0	1183.3	1285.2	1497.9	1570.6
50°	1093.0	1102.4	1221.8	1432.8	1526.6
52.5°	1003.2	1021.1	1160.2	1371.2	1465.8
55°	918.8	933.8	1081.9	1318.6	1423.4
57.5°	841.8	850.8	1001.0	1252.2	1331.4
60°	766.1	768.2	924.8	1178.6	1254.4
62.5°	679.2	683.0	846.5	1091.7	1193.2
65°	581.6	600.0	762.2	1008.7	1100.3
67.5°	490.4	522.5	676.2	932.5	980.5
70°	392.9	447.2	591.9	843.1	876.9
72.5°	303.4	367.2	505.4	742.9	790.5
75°	220.0	291.4	425.0	653.1	694.2
77.5°	148.1	220.8	349.6	553.8	608.1
80°	88.6	161.3	282.5	461.8	523.0
82.5°	45.4	108.3	219.1	387.3	442.1
85°	19.7	68.5	165.6	321.4	368.9
87.5°	5.6	38.9	122.0	259.8	300.0
90°	0.4	20.5	86.9	203.7	240.1
92.5°	0.4	9.8	61.2	154.1	181.9
95°	0.4	5.1	38.1	111.7	136.5
97.5°	0.4	3.0	23.1	79.2	100.1
100°	0.4	2.6	13.7	52.6	71.5
102.5°	0.4	3.0	9.4	33.4	46.6
105°	0.4	3.0	7.7	21.8	30.8
107.5°	0.9	3.0	6.8	16.3	21.4
110°	0.4	2.6	7.3	12.4	16.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.9	2.1	6.8	10.3	12.4
115°	0.4	1.7	6.0	9.8	10.3
117.5°	0.9	1.3	4.7	9.8	10.3
120°	0.9	0.9	3.9	9.4	10.7
122.5°	0.9	0.9	3.0	8.6	10.3
125°	0.4	0.9	2.6	6.4	9.0
127.5°	0.9	0.9	2.1	5.1	6.8
130°	0.9	0.9	1.7	3.9	5.1
132.5°	0.9	0.9	1.3	3.0	3.9
135°	0.9	0.9	0.9	2.1	3.0
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)