

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: P518138

Luminaire Tested: HVL8-4-LD4-3LO-50-UNV-O-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: P518138
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3LO-50-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6914.0 lumens
Efficiency: N/A
Efficacy: 102.6 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

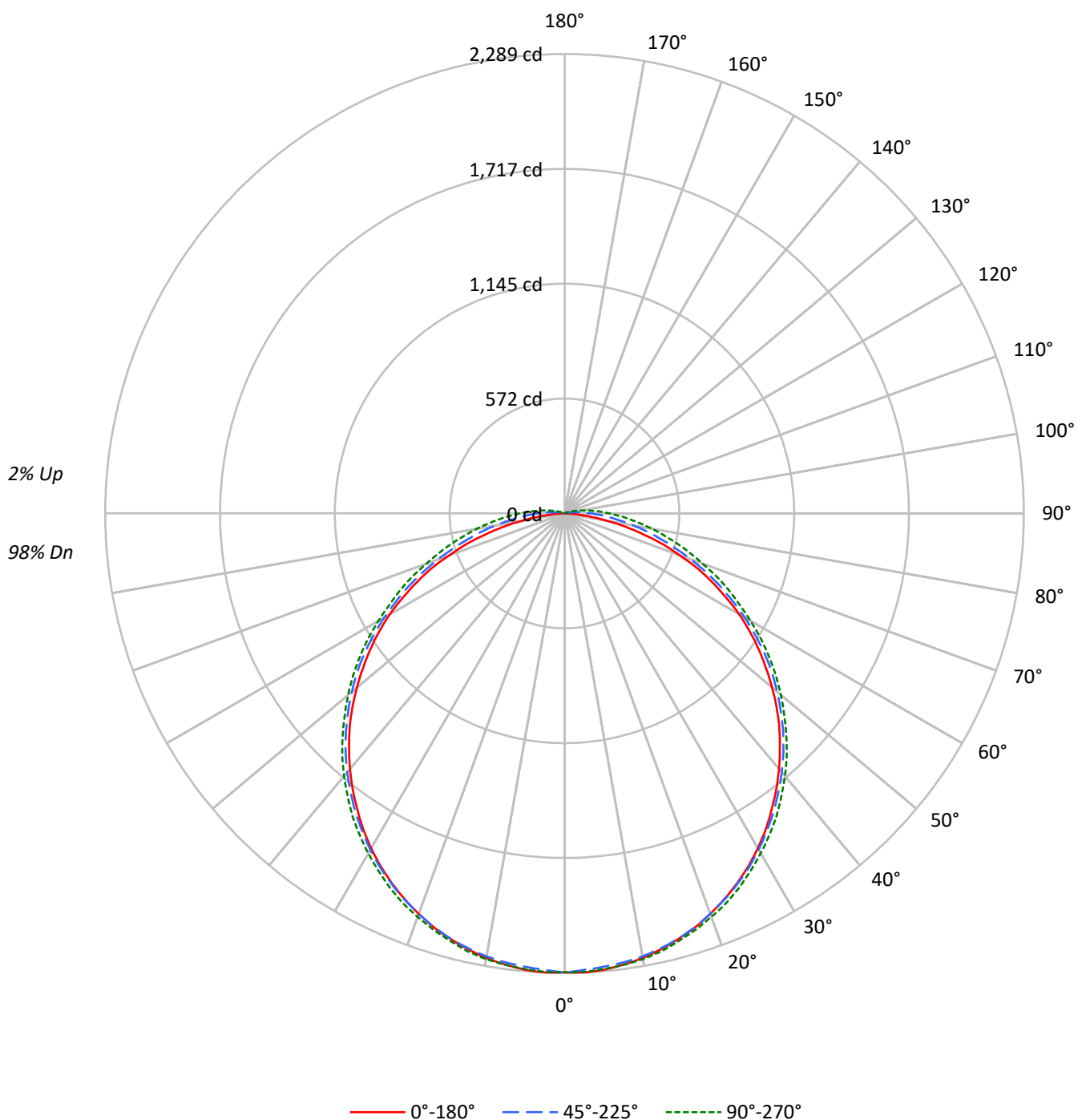
Input Watts (W): 67.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			98
1	108	102	98	94	105	100	96	92	95	92	89	91	88	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	77	73	79	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	52	62	56	51	60	54	50			47
5	75	61	52	45	72	60	52	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	40	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°	9230	9230	9230
5°	9212	9024	9033
10°	9151	8863	8852
15°	9072	8684	8635
20°	8987	8484	8424
25°	8886	8279	8209
30°	8769	8060	7965
35°	8621	7820	7724
40°	8467	7567	7443
45°	8301	7291	7139
50°	8085	6973	6812
55°	7852	6623	6452
60°	7574	6169	6031
65°	7123	5662	5614
70°	6473	5063	5129
75°	5551	4409	4688
80°	4176	3765	4285
85°	2234	3116	3903

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 8301 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	216.4	3.1
10°-20°	620.7	9.0
20°-30°	941.8	13.6
30°-40°	1138.8	16.5
40°-50°	1188.3	17.2
50°-60°	1086.5	15.7
60°-70°	846.9	12.2
70°-80°	529.8	7.7
80°-90°	240.6	3.5
90°-100°	80.6	1.2
100°-110°	20.2	0.3
110°-120°	3.2	0.0
120°-130°	0.0	0.0
130°-140°	0.0	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°	1778.9	25.7
0°-40°	2917.8	42.2
0°-60°	5192.5	75.1
0°-90°	6809.9	98.5
90°-120°	104.1	1.5
90°-150°	104.1	1.5
90°-180°	104.0	1.5
0°-180°	6914.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2287	2287	2287	2287	2287	
5°	2282	2278	2267	2278	2278	217
15°	2195	2199	2193	2205	2205	620
25°	2034	2036	2038	2055	2058	937
35°	1800	1809	1816	1834	1842	1127
45°	1515	1528	1541	1556	1563	1167
55°	1182	1196	1218	1236	1244	1056
65°	812	826	855	889	903	804
75°	411	437	500	560	581	438
85°	71	132	226	299	325	90
90°	0	49	133	200	224	3
95°	0	13	69	125	144	0
105°	1	2	11	33	45	1
115°	2	2	2	6	9	1
125°	0	0	0	0	0	0
135°	0	0	0	0	0	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: HVL8-4-LD4-3LO-50-UNV-O-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2286.7	2286.7	2286.7	2286.7	2286.7
2.5°	2289.4	2286.2	2276.0	2286.2	2285.7
5°	2281.9	2277.6	2267.3	2278.1	2278.1
7.5°	2266.8	2265.2	2256.0	2268.4	2268.4
10°	2249.0	2248.5	2240.9	2254.4	2254.9
12.5°	2224.2	2226.4	2219.3	2232.3	2233.9
15°	2195.1	2198.9	2192.9	2205.3	2204.8
17.5°	2163.3	2165.4	2161.1	2175.1	2174.6
20°	2123.9	2126.6	2123.4	2138.0	2139.6
22.5°	2080.3	2084.0	2083.5	2098.6	2102.9
25°	2033.9	2035.5	2037.7	2054.9	2058.2
27.5°	1982.7	1985.4	1989.2	2004.8	2008.0
30°	1926.6	1930.9	1935.3	1951.4	1955.7
32.5°	1867.3	1871.6	1877.0	1898.1	1900.2
35°	1800.5	1808.6	1816.1	1834.5	1842.0
37.5°	1733.6	1743.9	1750.9	1770.3	1776.2
40°	1663.0	1673.3	1684.6	1705.1	1708.9
42.5°	1589.2	1601.0	1614.5	1632.8	1639.3
45°	1514.8	1528.3	1540.7	1555.8	1563.3
47.5°	1434.5	1447.9	1463.0	1480.3	1485.1
50°	1351.4	1367.1	1383.3	1399.4	1408.0
52.5°	1266.3	1285.1	1303.5	1320.7	1328.8
55°	1182.2	1196.2	1218.3	1236.1	1244.2
57.5°	1094.9	1106.7	1126.7	1155.8	1160.1
60°	1005.9	1016.7	1037.2	1060.9	1070.6
62.5°	907.8	922.3	943.9	974.1	982.7
65°	812.4	826.4	855.0	888.9	902.9
67.5°	720.2	725.0	761.7	797.3	819.9
70°	611.3	629.6	672.2	715.9	733.1
72.5°	517.5	535.8	582.7	633.9	655.5
75°	411.3	436.6	500.3	560.1	581.1
77.5°	318.1	346.1	424.8	485.2	509.4
80°	222.1	265.8	351.5	419.4	445.8
82.5°	139.6	193.5	285.2	356.3	379.5
85°	71.2	131.5	225.9	298.6	325.1
87.5°	18.9	85.2	175.7	245.3	272.2
90°	0.5	49.1	133.2	200.0	224.3
92.5°	0.5	27.5	99.2	159.0	183.8
95°	0.5	12.9	69.0	125.1	144.5
97.5°	0.5	5.4	47.4	94.3	113.7
100°	0.5	2.7	30.2	68.5	85.2
102.5°	1.1	1.6	18.9	49.1	62.5
105°	1.1	1.6	11.3	33.4	44.7
107.5°	1.1	1.6	6.5	22.6	30.7
110°	1.6	1.6	3.8	14.0	20.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.6	1.6	2.2	9.2	13.5
115°	1.6	1.6	2.2	5.9	8.6
117.5°	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
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)