

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: P518066

Luminaire Tested: HVL8-4-LD4-2HI-35-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: P518066
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-2HI-35-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

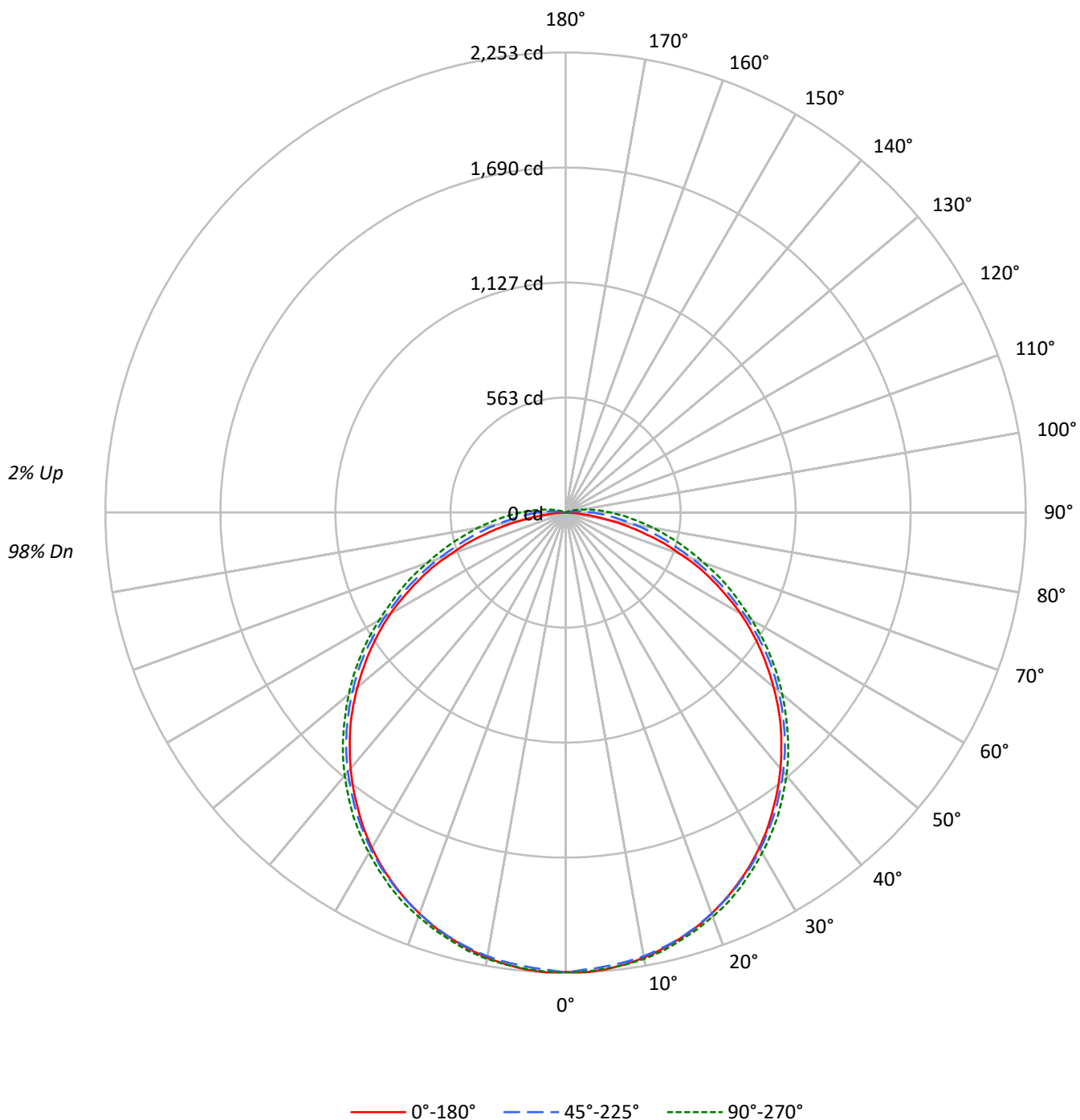
Lumens per Lamp: N/A
Luminaire Lumens: 6805.0 lumens
Efficiency: N/A
Efficacy: 79.0 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

Input Watts (W): 86.1
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

TEST NUMBER: P518066
CATALOG NUMBER: HVL8-4-LD4-2HI-35-UNV-O-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P518066

CATALOG NUMBER: HVL8-4-LD4-2HI-35-UNV-O-EDD

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°	9085	9085	9085
5°	9067	8882	8891
10°	9006	8723	8713
15°	8929	8547	8499
20°	8846	8350	8291
25°	8746	8149	8080
30°	8631	7933	7840
35°	8485	7696	7603
40°	8333	7447	7325
45°	8170	7176	7027
50°	7957	6862	6705
55°	7728	6518	6350
60°	7454	6072	5936
65°	7011	5572	5525
70°	6372	4984	5048
75°	5463	4339	4615
80°	4110	3706	4218
85°	2196	3066	3840

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 8170 cd/sqm

TEST NUMBER: P518066

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	213.0	3.1
10°-20°	610.9	9.0
20°-30°	927.0	13.6
30°-40°	1120.9	16.5
40°-50°	1169.6	17.2
50°-60°	1069.3	15.7
60°-70°	833.6	12.2
70°-80°	521.5	7.7
80°-90°	236.8	3.5
90°-100°	79.4	1.2
100°-110°	19.9	0.3
110°-120°	3.1	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°	1750.9	25.7
0°-40°	2871.8	42.2
0°-60°	5110.7	75.1
0°-90°	6702.6	98.5
90°-120°	102.4	1.5
90°-150°	102.4	1.5
90°-180°	102.0	1.5
0°-180°	6805.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2251	2251	2251	2251	2251	
5°	2246	2242	2232	2242	2242	213
15°	2160	2164	2158	2171	2170	610
25°	2002	2003	2006	2022	2026	922
35°	1772	1780	1788	1806	1813	1109
45°	1491	1504	1516	1531	1539	1149
55°	1164	1177	1199	1217	1225	1039
65°	800	813	842	875	889	791
75°	405	430	492	551	572	432
85°	70	130	222	294	320	89
90°	0	48	131	197	221	3
95°	0	13	68	123	142	0
105°	1	2	11	33	44	1
115°	2	2	2	6	8	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

TEST NUMBER: P518066

CATALOG NUMBER: HVL8-4-LD4-2HI-35-UNV-O-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2250.7	2250.7	2250.7	2250.7	2250.7
2.5°	2253.3	2250.2	2240.1	2250.2	2249.6
5°	2245.9	2241.7	2231.6	2242.2	2242.2
7.5°	2231.1	2229.5	2220.4	2232.6	2232.6
10°	2213.5	2213.0	2205.6	2218.8	2219.4
12.5°	2189.1	2191.3	2184.4	2197.1	2198.7
15°	2160.5	2164.2	2158.4	2170.6	2170.0
17.5°	2129.2	2131.3	2127.1	2140.9	2140.3
20°	2090.5	2093.1	2089.9	2104.2	2105.8
22.5°	2047.5	2051.2	2050.7	2065.5	2069.8
25°	2001.8	2003.4	2005.6	2022.5	2025.7
27.5°	1951.4	1954.1	1957.8	1973.2	1976.4
30°	1896.3	1900.5	1904.8	1920.7	1924.9
32.5°	1837.9	1842.1	1847.4	1868.1	1870.3
35°	1772.1	1780.1	1787.5	1805.5	1813.0
37.5°	1706.3	1716.4	1723.3	1742.4	1748.2
40°	1636.8	1646.9	1658.0	1678.2	1681.9
42.5°	1564.1	1575.8	1589.1	1607.1	1613.5
45°	1490.9	1504.2	1516.4	1531.2	1538.7
47.5°	1411.8	1425.1	1440.0	1456.9	1461.7
50°	1330.1	1345.5	1361.4	1377.4	1385.9
52.5°	1246.3	1264.9	1282.9	1299.9	1307.9
55°	1163.5	1177.3	1199.1	1216.6	1224.6
57.5°	1077.6	1089.3	1108.9	1137.5	1141.8
60°	990.0	1000.7	1020.8	1044.2	1053.7
62.5°	893.5	907.8	929.0	958.7	967.2
65°	799.6	813.4	841.5	874.9	888.7
67.5°	708.8	713.6	749.7	784.7	807.0
70°	601.7	619.7	661.6	704.6	721.6
72.5°	509.3	527.4	573.5	624.0	645.2
75°	404.8	429.8	492.4	551.3	572.0
77.5°	313.0	340.6	418.1	477.5	501.4
80°	218.6	261.6	345.9	412.8	438.8
82.5°	137.4	190.5	280.7	350.7	373.5
85°	70.0	129.5	222.3	293.9	319.9
87.5°	18.6	83.8	173.0	241.4	267.9
90°	0.5	48.3	131.1	196.8	220.7
92.5°	0.5	27.1	97.6	156.5	180.9
95°	0.5	12.7	67.9	123.1	142.2
97.5°	0.5	5.3	46.7	92.8	112.0
100°	0.5	2.7	29.7	67.4	83.8
102.5°	1.1	1.6	18.6	48.3	61.5
105°	1.1	1.6	11.1	32.9	44.0
107.5°	1.1	1.6	6.4	22.3	30.2
110°	1.6	1.6	3.7	13.8	20.2

TEST NUMBER: P518066

CATALOG NUMBER: HVL8-4-LD4-2HI-35-UNV-O-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.6	1.6	2.1	9.0	13.3
115°	1.6	1.6	2.1	5.8	8.5
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)