

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: P518175

Luminaire Tested: HVL8-8-LD4-1LO-35-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: P518175
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-1LO-35-UNV-C-EDD-90
Description: 8 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5706.0 lumens
Efficiency: N/A
Efficacy: 124.0 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 8' x H: 0.17')
CIE Type: Direct

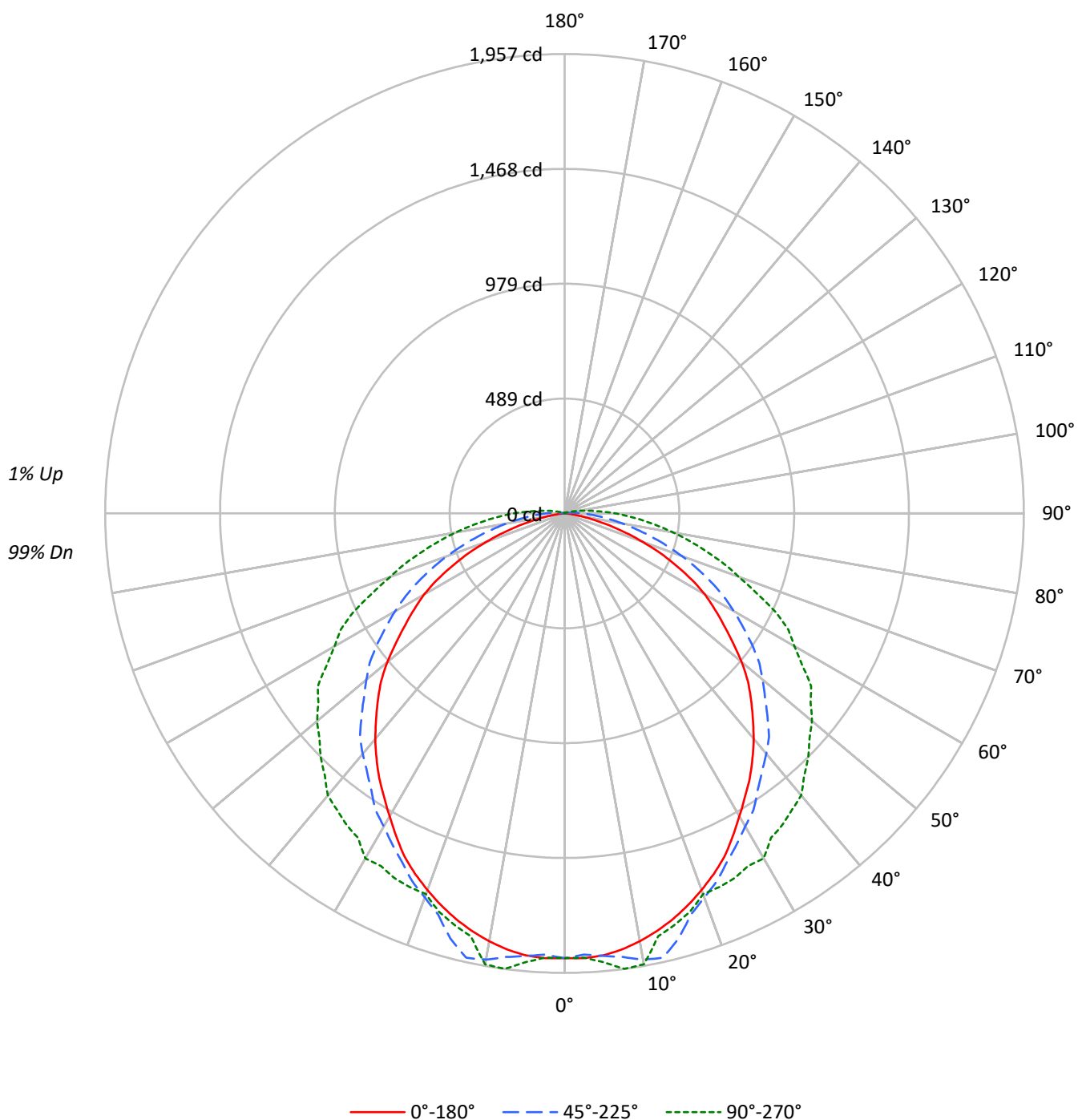
Input Watts (W): 46
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		87
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		60
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		54
6	69	55	46	39	67	54	46	39	52	45	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3823	3823	3823
5°	3821	3770	3804
10°	3778	3826	3828
15°	3716	3727	3553
20°	3639	3495	3398
25°	3558	3348	3419
30°	3430	3230	3456
35°	3342	3119	3395
40°	3247	3036	3416
45°	3145	2929	3355
50°	3019	2816	3329
55°	2831	2695	3327
60°	2691	2527	3185
65°	2397	2326	3084
70°	1977	2063	2765
75°	1435	1742	2524
80°	830	1419	2266
85°	331	1084	1996

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 3355 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.0	3.2
10°-20°	518.4	9.1
20°-30°	771.3	13.5
30°-40°	927.2	16.2
40°-50°	975.9	17.1
50°-60°	905.5	15.9
60°-70°	716.0	12.5
70°-80°	437.3	7.7
80°-90°	190.5	3.3
90°-100°	59.3	1.0
100°-110°	13.3	0.2
110°-120°	5.4	0.1
120°-130°	3.0	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°	1471.8	25.8
0°-40°	2399.0	42.0
0°-60°	4280.3	75.0
0°-90°	5624.2	98.6
90°-120°	78.0	1.4
90°-150°	81.9	1.4
90°-180°	82.0	1.4
0°-180°	5706.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1894	1894	1894	1894	1894	
5°	1890	1886	1892	1913	1919	179
15°	1788	1857	1875	1813	1814	504
25°	1613	1716	1638	1687	1714	741
35°	1376	1414	1436	1566	1619	860
45°	1125	1130	1223	1416	1469	867
55°	828	842	975	1189	1283	744
65°	524	541	687	909	992	519
75°	198	263	383	589	626	216
85°	18	62	149	290	333	27
90°	0	18	78	184	216	1
95°	0	5	34	101	123	0
105°	0	3	7	20	28	1
115°	0	2	5	9	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°	1894.1	1894.1	1894.1	1894.1	1894.1
2.5°	1896.4	1891.4	1881.0	1891.0	1893.7
5°	1889.5	1885.6	1892.2	1913.4	1918.8
7.5°	1873.6	1888.3	1905.7	1944.2	1956.6
10°	1850.1	1877.9	1930.0	1962.8	1950.0
12.5°	1821.5	1868.6	1938.5	1874.4	1844.7
15°	1788.4	1857.0	1875.2	1813.1	1814.2
17.5°	1749.4	1847.4	1791.4	1789.9	1778.7
20°	1707.3	1815.0	1740.9	1737.8	1725.9
22.5°	1662.2	1772.2	1696.1	1690.0	1722.4
25°	1613.2	1716.2	1637.9	1686.9	1714.3
27.5°	1551.8	1642.9	1589.3	1658.7	1693.1
30°	1489.7	1567.3	1539.5	1636.3	1697.3
32.5°	1431.5	1488.2	1498.6	1627.9	1637.9
35°	1376.3	1414.5	1435.7	1566.1	1619.4
37.5°	1315.7	1326.1	1382.5	1540.3	1591.6
40°	1254.0	1247.4	1337.7	1497.8	1568.8
42.5°	1187.6	1185.3	1290.2	1476.6	1512.1
45°	1124.7	1129.7	1222.7	1416.4	1469.3
47.5°	1060.3	1066.8	1158.7	1350.4	1416.0
50°	985.4	993.9	1101.6	1291.8	1376.3
52.5°	904.4	920.6	1046.0	1236.2	1321.5
55°	828.4	841.9	975.4	1188.8	1283.3
57.5°	758.9	767.0	902.5	1129.0	1200.3
60°	690.7	692.6	833.8	1062.6	1130.9
62.5°	612.3	615.8	763.2	984.3	1075.7
65°	524.4	540.9	687.2	909.4	992.0
67.5°	442.2	471.1	609.6	840.7	884.0
70°	354.2	403.2	533.6	760.1	790.6
72.5°	273.6	331.0	455.7	669.8	712.6
75°	198.3	262.8	383.1	588.8	625.8
77.5°	133.5	199.1	315.2	499.3	548.3
80°	79.9	145.5	254.7	416.3	471.5
82.5°	40.9	97.6	197.5	349.2	398.6
85°	17.7	61.7	149.3	289.8	332.6
87.5°	5.0	35.1	110.0	234.2	270.5
90°	0.4	18.5	78.3	183.7	216.5
92.5°	0.4	8.9	55.2	138.9	164.0
95°	0.4	4.6	34.3	100.7	123.1
97.5°	0.4	2.7	20.8	71.4	90.3
100°	0.4	2.3	12.3	47.5	64.4
102.5°	0.4	2.7	8.5	30.1	42.1
105°	0.4	2.7	6.9	19.7	27.8
107.5°	0.8	2.7	6.2	14.7	19.3
110°	0.4	2.3	6.6	11.2	15.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	1.9	6.2	9.3	11.2
115°	0.4	1.5	5.4	8.9	9.3
117.5°	0.8	1.2	4.2	8.9	9.3
120°	0.8	0.8	3.5	8.5	9.6
122.5°	0.8	0.8	2.7	7.7	9.3
125°	0.4	0.8	2.3	5.8	8.1
127.5°	0.8	0.8	1.9	4.6	6.2
130°	0.8	0.8	1.5	3.5	4.6
132.5°	0.8	0.8	1.2	2.7	3.5
135°	0.8	0.8	0.8	1.9	2.7
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)