

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: P517977

Luminaire Tested: HVL8-2-LD4-3HI-50-UNV-O-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: P517977
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-O-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: 6587.0 lumens
Efficiency: N/A
Efficacy: 104.6 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

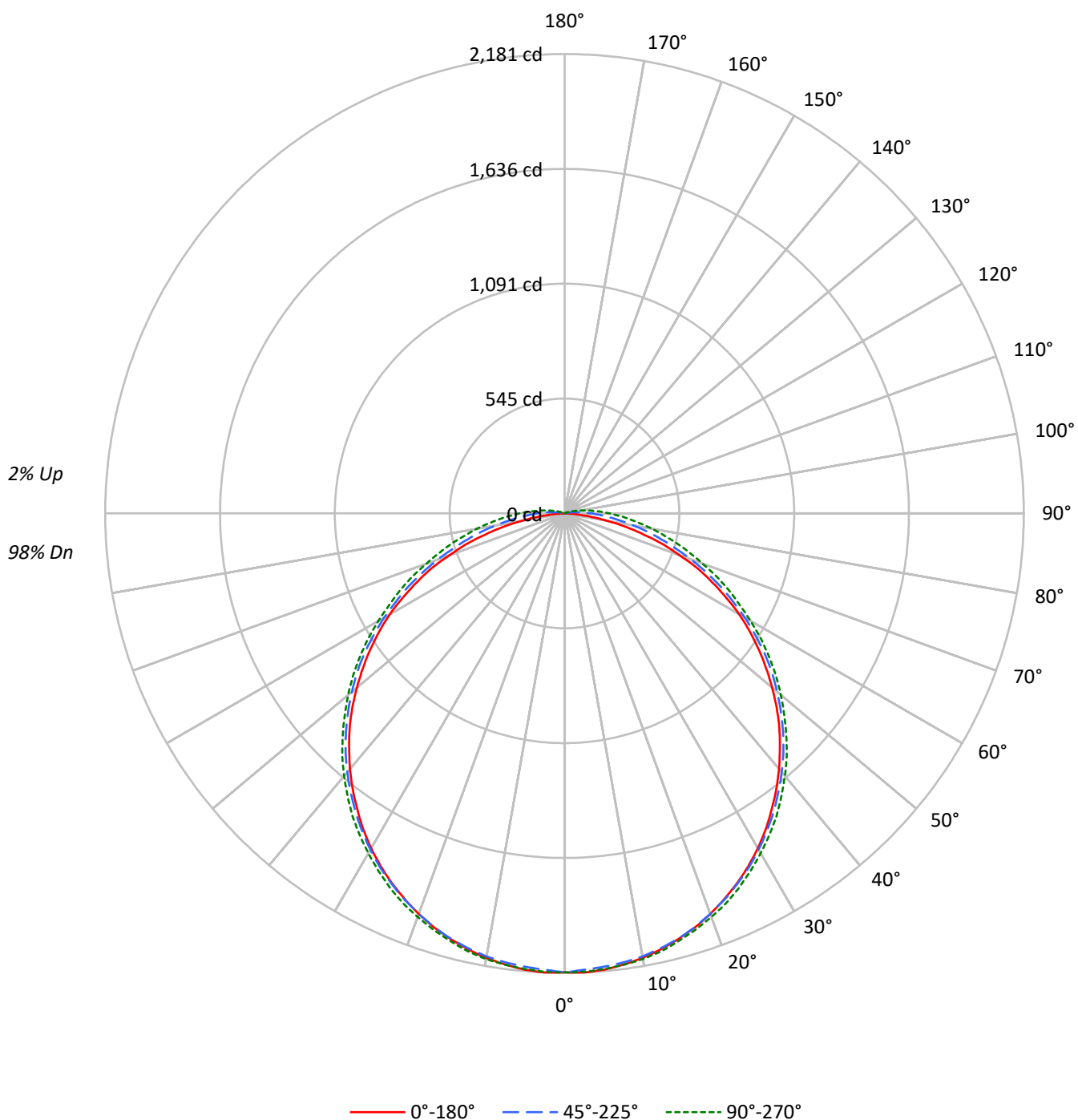
Input Watts (W): 63
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			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°	17588	17588	17588
5°	17490	17151	17212
10°	17310	16802	16867
15°	17097	16423	16453
20°	16872	16006	16051
25°	16614	15579	15642
30°	16325	15128	15177
35°	15972	14636	14718
40°	15606	14120	14181
45°	15208	13561	13603
50°	14709	12921	12980
55°	14166	12222	12293
60°	13521	11328	11492
65°	12543	10334	10696
70°	11185	9174	9773
75°	9324	7908	8932
80°	6680	6662	8165
85°	3216	5395	7435

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 15208 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	206.2	3.1
10°-20°	591.4	9.0
20°-30°	897.3	13.6
30°-40°	1085.0	16.5
40°-50°	1132.1	17.2
50°-60°	1035.1	15.7
60°-70°	806.9	12.2
70°-80°	504.8	7.7
80°-90°	229.3	3.5
90°-100°	76.8	1.2
100°-110°	19.3	0.3
110°-120°	3.0	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°	1694.8	25.7
0°-40°	2779.8	42.2
0°-60°	4946.9	75.1
0°-90°	6487.8	98.5
90°-120°	99.1	1.5
90°-150°	99.1	1.5
90°-180°	99.0	1.5
0°-180°	6587.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2179	2179	2179	2179	2179	
5°	2174	2170	2160	2170	2170	206
15°	2091	2095	2089	2101	2100	590
25°	1938	1939	1941	1958	1961	893
35°	1715	1723	1730	1748	1755	1074
45°	1443	1456	1468	1482	1489	1112
55°	1126	1140	1161	1178	1185	1006
65°	774	787	814	847	860	766
75°	392	416	477	534	554	418
85°	68	125	215	284	310	86
90°	0	47	127	190	214	3
95°	0	12	66	119	138	0
105°	1	2	11	32	43	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

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2178.6	2178.6	2178.6	2178.6	2178.6
2.5°	2181.1	2178.1	2168.3	2178.1	2177.6
5°	2174.0	2169.9	2160.1	2170.4	2170.4
7.5°	2159.6	2158.0	2149.3	2161.1	2161.1
10°	2142.6	2142.1	2134.9	2147.8	2148.3
12.5°	2119.0	2121.1	2114.4	2126.7	2128.3
15°	2091.3	2094.9	2089.2	2101.0	2100.5
17.5°	2061.0	2063.0	2058.9	2072.3	2071.8
20°	2023.5	2026.1	2023.0	2036.8	2038.4
22.5°	1981.9	1985.5	1985.0	1999.3	2003.5
25°	1937.7	1939.3	1941.3	1957.7	1960.8
27.5°	1888.9	1891.5	1895.1	1910.0	1913.1
30°	1835.5	1839.6	1843.7	1859.1	1863.2
32.5°	1779.0	1783.1	1788.3	1808.3	1810.3
35°	1715.3	1723.0	1730.2	1747.7	1754.9
37.5°	1651.7	1661.4	1668.1	1686.6	1692.2
40°	1584.4	1594.1	1604.9	1624.4	1628.0
42.5°	1514.0	1525.3	1538.2	1555.6	1561.8
45°	1443.1	1456.0	1467.8	1482.2	1489.4
47.5°	1366.6	1379.5	1393.8	1410.3	1414.9
50°	1287.5	1302.4	1317.8	1333.2	1341.5
52.5°	1206.4	1224.4	1241.8	1258.3	1266.0
55°	1126.3	1139.6	1160.7	1177.6	1185.3
57.5°	1043.1	1054.4	1073.4	1101.1	1105.2
60°	958.3	968.6	988.1	1010.7	1020.0
62.5°	864.9	878.7	899.3	928.0	936.2
65°	774.0	787.3	814.5	846.9	860.2
67.5°	686.1	690.8	725.7	759.6	781.1
70°	582.4	599.9	640.4	682.0	698.5
72.5°	493.0	510.5	555.2	604.0	624.5
75°	391.9	416.0	476.6	533.6	553.6
77.5°	303.0	329.7	404.7	462.2	485.3
80°	211.6	253.2	334.9	399.6	424.7
82.5°	133.0	184.4	271.7	339.5	361.6
85°	67.8	125.3	215.2	284.5	309.7
87.5°	18.0	81.1	167.4	233.7	259.4
90°	0.5	46.7	126.9	190.5	213.6
92.5°	0.5	26.2	94.5	151.5	175.1
95°	0.5	12.3	65.7	119.1	137.6
97.5°	0.5	5.1	45.2	89.9	108.4
100°	0.5	2.6	28.8	65.2	81.1
102.5°	1.0	1.5	18.0	46.7	59.6
105°	1.0	1.5	10.8	31.8	42.6
107.5°	1.0	1.5	6.2	21.6	29.3
110°	1.5	1.5	3.6	13.4	19.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.5	1.5	2.1	8.7	12.8
115°	1.5	1.5	2.1	5.6	8.2
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)