

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: P517968

Luminaire Tested: HVL8-2-LD4-3HI-35-UNV-C-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: P517968
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3HI-35-UNV-C-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7083.0 lumens
Efficiency: N/A
Efficacy: 112.4 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

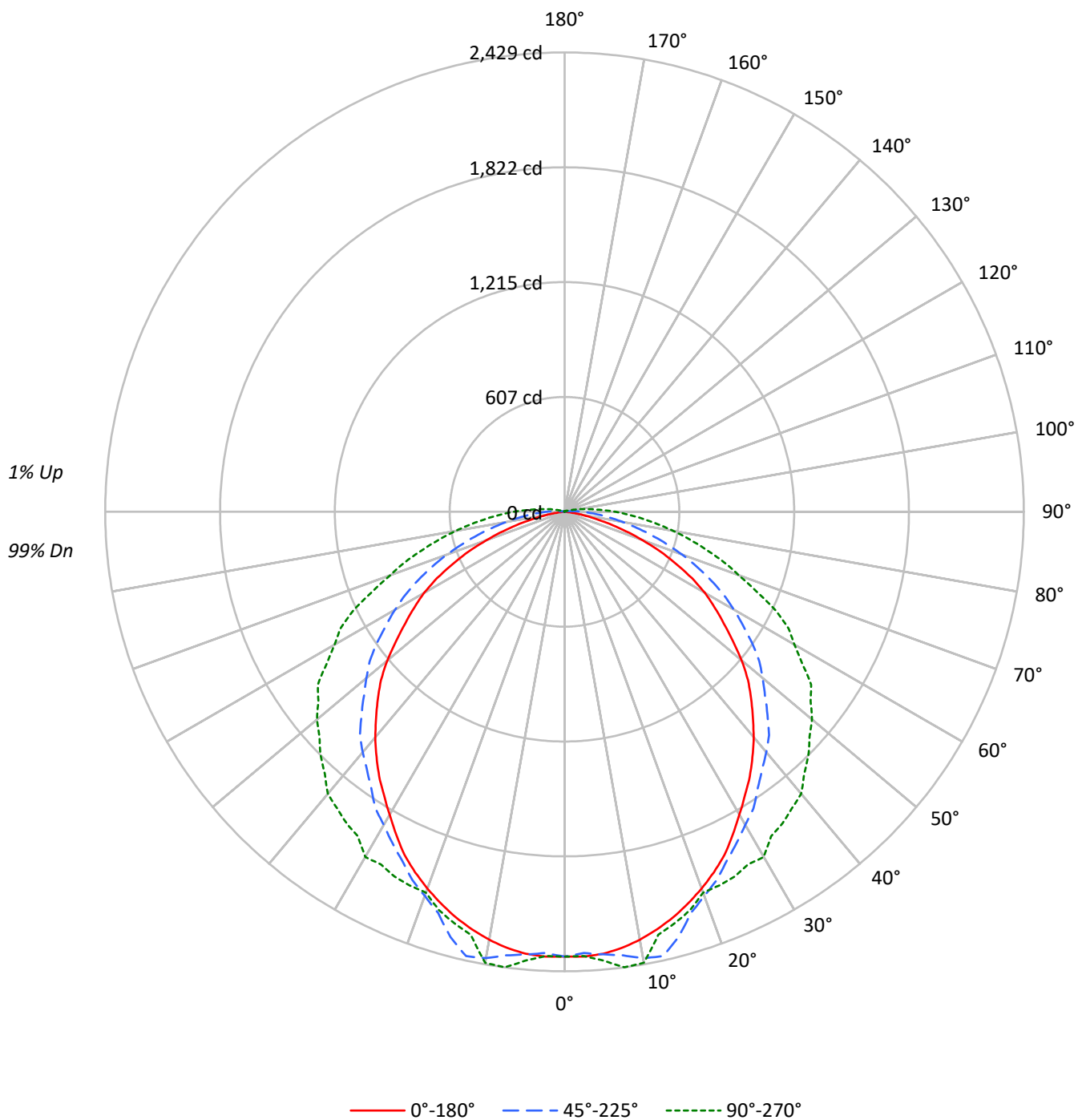
Input Watts (W): 63
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	18981	18981	18981
5°	18869	18649	18888
10°	18554	18855	19005
15°	18148	18298	17640
20°	17672	17098	16869
25°	17170	16316	16976
30°	16446	15680	17162
35°	15908	15075	16859
40°	15332	14609	16963
45°	14713	14023	16657
50°	13974	13407	16530
55°	12933	12749	16521
60°	12096	11866	15816
65°	10548	10823	15312
70°	8445	9489	13731
75°	5857	7891	12535
80°	3128	6288	11253
85°	1044	4648	9913

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 16657 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	226.0	3.2
10°-20°	643.5	9.1
20°-30°	957.5	13.5
30°-40°	1150.9	16.2
40°-50°	1211.4	17.1
50°-60°	1124.0	15.9
60°-70°	888.7	12.5
70°-80°	542.9	7.7
80°-90°	236.5	3.3
90°-100°	73.6	1.0
100°-110°	16.6	0.2
110°-120°	6.7	0.1
120°-130°	3.8	0.1
130°-140°	1.0	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°	1827.0	25.8
0°-40°	2977.9	42.0
0°-60°	5313.3	75.0
0°-90°	6981.4	98.6
90°-120°	96.8	1.4
90°-150°	101.6	1.4
90°-180°	102.0	1.4
0°-180°	7083.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2351	2351	2351	2351	2351	
5°	2345	2341	2349	2375	2382	222
15°	2220	2305	2328	2251	2252	625
25°	2002	2130	2033	2094	2128	919
35°	1708	1756	1782	1944	2010	1068
45°	1396	1402	1518	1758	1824	1076
55°	1028	1045	1211	1476	1593	924
65°	651	672	853	1129	1231	645
75°	246	326	476	731	777	269
85°	22	77	185	360	413	34
90°	0	23	97	228	269	1
95°	0	6	43	125	153	0
105°	0	3	9	24	34	1
115°	0	2	7	11	12	1
125°	0	1	3	7	10	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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CATALOG NUMBER: HVL8-2-LD4-3HI-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2351.2	2351.2	2351.2	2351.2	2351.2
2.5°	2354.0	2347.8	2334.9	2347.3	2350.7
5°	2345.4	2340.6	2348.8	2375.1	2381.8
7.5°	2325.8	2344.0	2365.5	2413.4	2428.8
10°	2296.6	2331.1	2395.7	2436.4	2420.6
12.5°	2261.1	2319.6	2406.3	2326.7	2289.9
15°	2219.9	2305.2	2327.7	2250.6	2252.0
17.5°	2171.6	2293.2	2223.8	2221.9	2208.0
20°	2119.4	2253.0	2161.0	2157.2	2142.3
22.5°	2063.3	2199.8	2105.5	2097.8	2138.0
25°	2002.5	2130.4	2033.1	2094.0	2128.0
27.5°	1926.3	2039.4	1972.8	2059.0	2101.6
30°	1849.2	1945.5	1911.0	2031.2	2106.9
32.5°	1776.9	1847.3	1860.2	2020.7	2033.1
35°	1708.4	1755.8	1782.2	1944.1	2010.2
37.5°	1633.2	1646.2	1716.1	1912.0	1975.7
40°	1556.6	1548.4	1660.5	1859.3	1947.4
42.5°	1474.2	1471.3	1601.6	1832.9	1877.0
45°	1396.1	1402.4	1517.8	1758.2	1823.8
47.5°	1316.2	1324.3	1438.3	1676.3	1757.8
50°	1223.2	1233.8	1367.4	1603.5	1708.4
52.5°	1122.7	1142.8	1298.4	1534.6	1640.4
55°	1028.3	1045.1	1210.8	1475.6	1593.0
57.5°	942.1	952.2	1120.3	1401.4	1490.0
60°	857.3	859.7	1035.0	1319.0	1403.8
62.5°	760.1	764.4	947.4	1221.8	1335.3
65°	650.9	671.5	853.0	1128.9	1231.4
67.5°	548.9	584.8	756.7	1043.6	1097.3
70°	439.7	500.5	662.4	943.5	981.4
72.5°	339.6	410.9	565.6	831.5	884.6
75°	246.2	326.2	475.6	730.9	776.9
77.5°	165.7	247.1	391.3	619.8	680.6
80°	99.1	180.6	316.1	516.8	585.3
82.5°	50.8	121.2	245.2	433.5	494.8
85°	22.0	76.6	185.4	359.7	412.9
87.5°	6.2	43.6	136.5	290.7	335.7
90°	0.5	23.0	97.2	228.0	268.7
92.5°	0.5	11.0	68.5	172.4	203.6
95°	0.5	5.7	42.6	125.0	152.8
97.5°	0.5	3.4	25.9	88.6	112.1
100°	0.5	2.9	15.3	58.9	80.0
102.5°	0.5	3.4	10.5	37.4	52.2
105°	0.5	3.4	8.6	24.4	34.5
107.5°	1.0	3.4	7.7	18.2	23.9
110°	0.5	2.9	8.1	13.9	18.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	2.4	7.7	11.5	13.9
115°	0.5	1.9	6.7	11.0	11.5
117.5°	1.0	1.4	5.3	11.0	11.5
120°	1.0	1.0	4.3	10.5	12.0
122.5°	1.0	1.0	3.4	9.6	11.5
125°	0.5	1.0	2.9	7.2	10.1
127.5°	1.0	1.0	2.4	5.7	7.7
130°	1.0	1.0	1.9	4.3	5.7
132.5°	1.0	1.0	1.4	3.4	4.3
135°	1.0	1.0	1.0	2.4	3.4
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)