

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: P517973

Luminaire Tested: HVL8-2-LD4-3HI-40-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: P517973
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3HI-40-UNV-O-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6477.0 lumens
Efficiency: N/A
Efficacy: 102.8 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

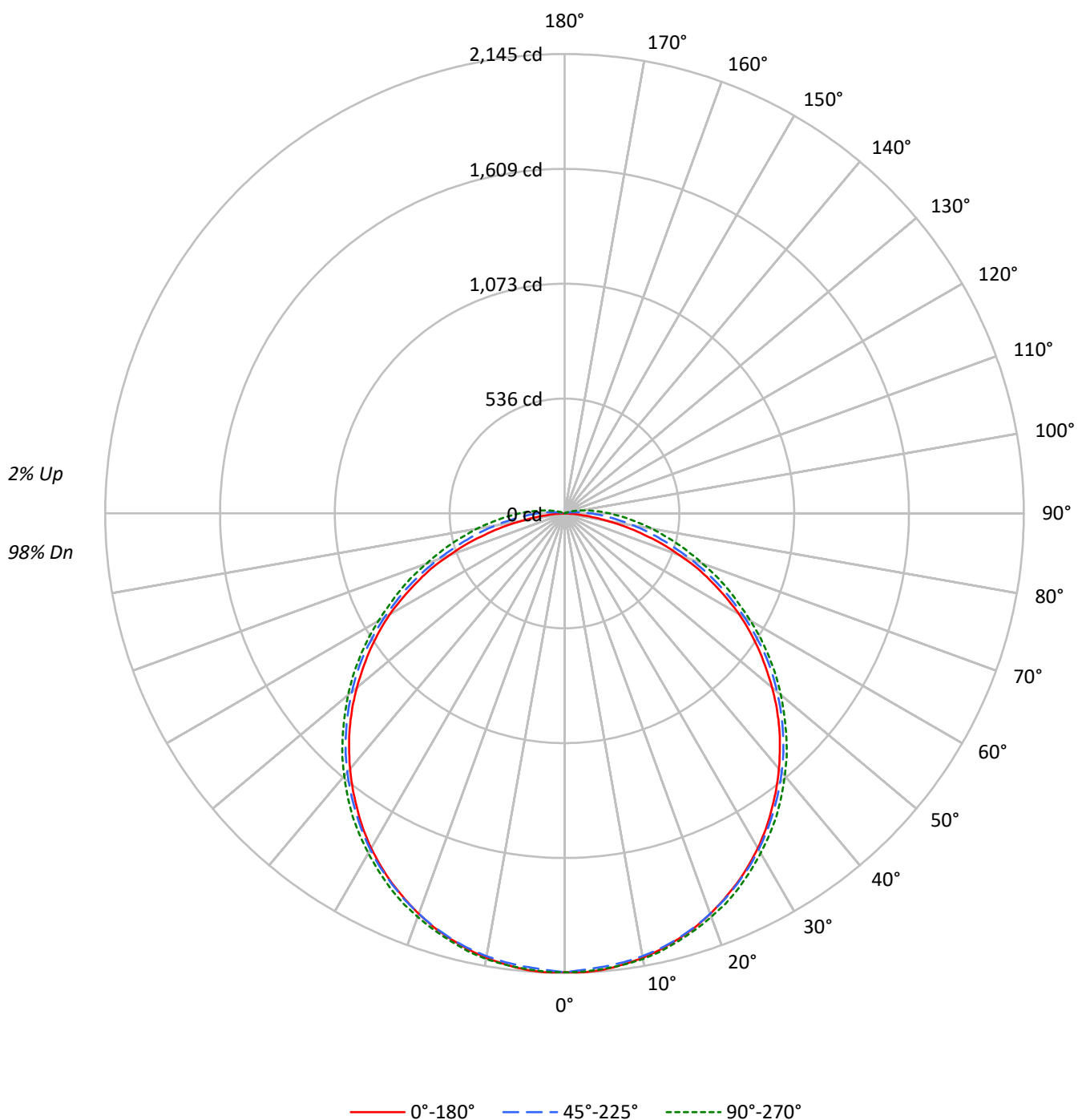
Input Watts (W): 63
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	102	98	94	105	100	96	92	95	92	89		91	88	86		87
2	98	89	82	76	95	87	80	75	83	77	73		79	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	52		62	56	51		60
5	75	61	52	45	72	60	52	45	58	50	44		56	49	44		54
6	69	55	46	40	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°	17294	17294	17294
5°	17198	16865	16924
10°	17021	16522	16585
15°	16811	16149	16178
20°	16590	15739	15783
25°	16337	15319	15381
30°	16052	14875	14924
35°	15706	14391	14472
40°	15345	13884	13944
45°	14954	13334	13375
50°	14463	12705	12763
55°	13930	12017	12088
60°	13295	11139	11299
65°	12332	10162	10518
70°	10999	9021	9609
75°	9167	7775	8784
80°	6569	6551	8029
85°	3164	5305	7311

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 14954 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	202.7	3.1
10°-20°	581.5	9.0
20°-30°	882.3	13.6
30°-40°	1066.9	16.5
40°-50°	1113.2	17.2
50°-60°	1017.8	15.7
60°-70°	793.4	12.2
70°-80°	496.3	7.7
80°-90°	225.4	3.5
90°-100°	75.6	1.2
100°-110°	19.0	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°	1666.5	25.7
0°-40°	2733.4	42.2
0°-60°	4864.3	75.1
0°-90°	6379.5	98.5
90°-120°	97.5	1.5
90°-150°	97.5	1.5
90°-180°	98.0	1.5
0°-180°	6477.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2142	2142	2142	2142	2142	
5°	2138	2134	2124	2134	2134	203
15°	2056	2060	2054	2066	2065	580
25°	1905	1907	1909	1925	1928	878
35°	1687	1694	1701	1718	1726	1056
45°	1419	1432	1443	1457	1464	1093
55°	1108	1121	1141	1158	1166	989
65°	761	774	801	833	846	753
75°	385	409	469	525	544	411
85°	67	123	212	280	304	84
90°	0	46	125	187	210	3
95°	0	12	65	117	135	0
105°	1	2	11	31	42	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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CATALOG NUMBER: HVL8-2-LD4-3HI-40-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2142.2	2142.2	2142.2	2142.2	2142.2
2.5°	2144.7	2141.7	2132.1	2141.7	2141.2
5°	2137.7	2133.6	2124.0	2134.1	2134.1
7.5°	2123.5	2122.0	2113.4	2125.0	2125.0
10°	2106.9	2106.3	2099.3	2111.9	2112.4
12.5°	2083.6	2085.6	2079.1	2091.2	2092.7
15°	2056.4	2059.9	2054.3	2065.9	2065.4
17.5°	2026.6	2028.6	2024.5	2037.7	2037.2
20°	1989.7	1992.2	1989.2	2002.8	2004.3
22.5°	1948.8	1952.3	1951.8	1966.0	1970.0
25°	1905.4	1906.9	1908.9	1925.1	1928.1
27.5°	1857.4	1859.9	1863.4	1878.1	1881.1
30°	1804.9	1808.9	1812.9	1828.1	1832.1
32.5°	1749.3	1753.4	1758.4	1778.1	1780.1
35°	1686.7	1694.3	1701.3	1718.5	1725.6
37.5°	1624.1	1633.7	1640.2	1658.4	1664.0
40°	1557.9	1567.5	1578.1	1597.3	1600.8
42.5°	1488.7	1499.8	1512.5	1529.6	1535.7
45°	1419.0	1431.7	1443.3	1457.4	1464.5
47.5°	1343.8	1356.4	1370.6	1386.7	1391.3
50°	1266.0	1280.7	1295.8	1311.0	1319.1
52.5°	1186.2	1203.9	1221.1	1237.2	1244.8
55°	1107.5	1120.6	1141.3	1158.0	1165.5
57.5°	1025.7	1036.8	1055.4	1082.7	1086.8
60°	942.3	952.4	971.6	993.8	1002.9
62.5°	850.4	864.1	884.3	912.5	920.6
65°	761.0	774.2	800.9	832.7	845.9
67.5°	674.7	679.2	713.6	746.9	768.1
70°	572.7	589.8	629.7	670.6	686.8
72.5°	484.8	502.0	545.9	593.9	614.1
75°	385.3	409.0	468.6	524.7	544.4
77.5°	297.9	324.2	397.9	454.5	477.2
80°	208.1	249.0	329.3	392.9	417.6
82.5°	130.8	181.3	267.1	333.8	355.5
85°	66.7	123.2	211.6	279.8	304.5
87.5°	17.7	79.8	164.6	229.8	255.0
90°	0.5	46.0	124.7	187.4	210.1
92.5°	0.5	25.8	92.9	149.0	172.2
95°	0.5	12.1	64.6	117.2	135.3
97.5°	0.5	5.0	44.4	88.4	106.6
100°	0.5	2.5	28.3	64.1	79.8
102.5°	1.0	1.5	17.7	46.0	58.6
105°	1.0	1.5	10.6	31.3	41.9
107.5°	1.0	1.5	6.1	21.2	28.8
110°	1.5	1.5	3.5	13.1	19.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.5	1.5	2.0	8.6	12.6
115°	1.5	1.5	2.0	5.6	8.1
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)