

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: P517972

Luminaire Tested: HVL8-2-LD4-3HI-40-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: P517972
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-C-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7153.0 lumens
Efficiency: N/A
Efficacy: 113.5 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

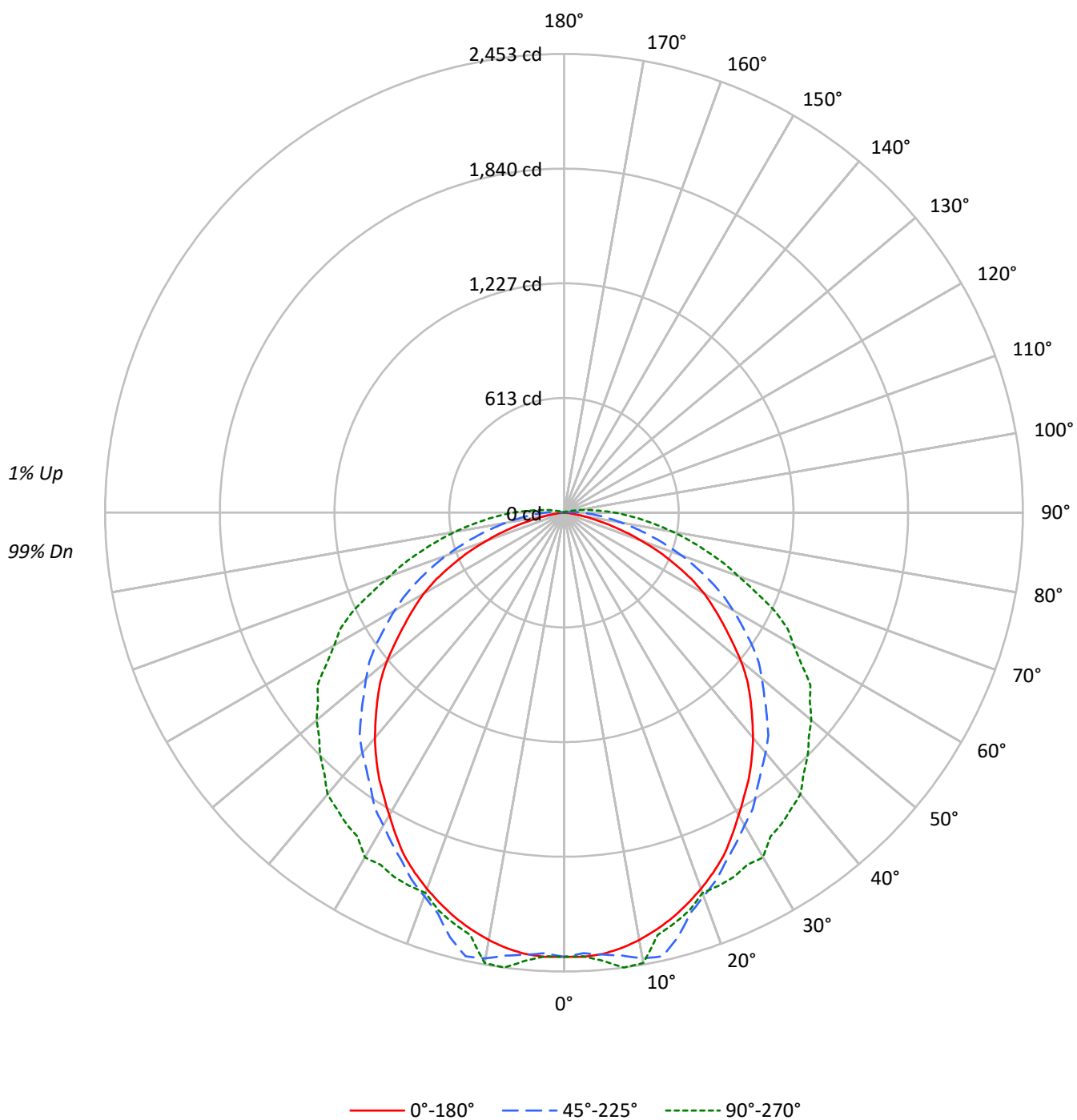
Input Watts (W): 63
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	19168	19168	19168
5°	19056	18834	19076
10°	18737	19041	19193
15°	18328	18479	17814
20°	17846	17267	17036
25°	17340	16477	17143
30°	16609	15835	17332
35°	16066	15224	17025
40°	15484	14753	17132
45°	14858	14161	16822
50°	14113	13539	16694
55°	13062	12876	16684
60°	12216	11983	15972
65°	10652	10929	15463
70°	8527	9582	13867
75°	5914	7969	12658
80°	3160	6350	11364
85°	1053	4693	10009

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 16822 cd/sqm

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CATALOG NUMBER: HVL8-2-LD4-3HI-40-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	228.2	3.2
10°-20°	649.9	9.1
20°-30°	966.9	13.5
30°-40°	1162.3	16.2
40°-50°	1223.4	17.1
50°-60°	1135.1	15.9
60°-70°	897.5	12.5
70°-80°	548.2	7.7
80°-90°	238.9	3.3
90°-100°	74.4	1.0
100°-110°	16.7	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°	1845.0	25.8
0°-40°	3007.3	42.0
0°-60°	5365.8	75.0
0°-90°	7050.4	98.6
90°-120°	97.8	1.4
90°-150°	102.6	1.4
90°-180°	103.0	1.4
0°-180°	7153.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2374	2374	2374	2374	2374	
5°	2369	2364	2372	2399	2405	224
15°	2242	2328	2351	2273	2274	632
25°	2022	2151	2053	2115	2149	928
35°	1725	1773	1800	1963	2030	1078
45°	1410	1416	1533	1776	1842	1087
55°	1038	1055	1223	1490	1609	933
65°	657	678	861	1140	1244	651
75°	249	329	480	738	784	271
85°	22	77	187	363	417	34
90°	0	23	98	230	271	1
95°	0	6	43	126	154	0
105°	0	3	9	25	35	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

TEST NUMBER: P517972

CATALOG NUMBER: HVL8-2-LD4-3HI-40-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2374.4	2374.4	2374.4	2374.4	2374.4
2.5°	2377.3	2371.0	2358.0	2370.5	2373.9
5°	2368.6	2363.8	2372.0	2398.6	2405.4
7.5°	2348.8	2367.2	2388.9	2437.3	2452.8
10°	2319.3	2354.1	2419.4	2460.5	2444.5
12.5°	2283.5	2342.5	2430.0	2349.7	2312.5
15°	2241.9	2328.0	2350.7	2272.8	2274.3
17.5°	2193.0	2315.9	2245.7	2243.8	2229.8
20°	2140.3	2275.3	2182.4	2178.5	2163.5
22.5°	2083.7	2221.6	2126.3	2118.5	2159.2
25°	2022.3	2151.4	2053.2	2114.7	2149.0
27.5°	1945.4	2059.5	1992.3	2079.4	2122.4
30°	1867.5	1964.7	1929.9	2051.3	2127.7
32.5°	1794.5	1865.6	1878.6	2040.7	2053.2
35°	1725.3	1773.2	1799.8	1963.3	2030.0
37.5°	1649.4	1662.4	1733.0	1930.9	1995.2
40°	1572.0	1563.8	1676.9	1877.7	1966.7
42.5°	1488.8	1485.9	1617.4	1851.1	1895.6
45°	1409.9	1416.2	1532.8	1775.6	1841.9
47.5°	1329.2	1337.4	1452.5	1692.9	1775.1
50°	1235.3	1246.0	1380.9	1619.4	1725.3
52.5°	1133.8	1154.1	1311.3	1549.7	1656.6
55°	1038.5	1055.4	1222.8	1490.2	1608.7
57.5°	951.4	961.6	1131.3	1415.3	1504.7
60°	865.8	868.2	1045.2	1332.1	1417.7
62.5°	767.6	772.0	956.7	1233.9	1348.5
65°	657.3	678.1	861.4	1140.0	1243.6
67.5°	554.3	590.6	764.2	1053.9	1108.1
70°	444.0	505.5	668.9	952.9	991.1
72.5°	342.9	415.0	571.2	839.7	893.4
75°	248.6	329.4	480.3	738.1	784.5
77.5°	167.4	249.6	395.2	625.9	687.3
80°	100.1	182.3	319.2	521.9	591.1
82.5°	51.3	122.4	247.6	437.7	499.6
85°	22.2	77.4	187.2	363.2	416.9
87.5°	6.3	44.0	137.9	293.6	339.1
90°	0.5	23.2	98.2	230.2	271.3
92.5°	0.5	11.1	69.2	174.1	205.6
95°	0.5	5.8	43.0	126.2	154.3
97.5°	0.5	3.4	26.1	89.5	113.2
100°	0.5	2.9	15.5	59.5	80.8
102.5°	0.5	3.4	10.6	37.7	52.7
105°	0.5	3.4	8.7	24.7	34.8
107.5°	1.0	3.4	7.7	18.4	24.2
110°	0.5	2.9	8.2	14.0	18.9

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CATALOG NUMBER: HVL8-2-LD4-3HI-40-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	2.4	7.7	11.6	14.0
115°	0.5	1.9	6.8	11.1	11.6
117.5°	1.0	1.5	5.3	11.1	11.6
120°	1.0	1.0	4.4	10.6	12.1
122.5°	1.0	1.0	3.4	9.7	11.6
125°	0.5	1.0	2.9	7.3	10.2
127.5°	1.0	1.0	2.4	5.8	7.7
130°	1.0	1.0	1.9	4.4	5.8
132.5°	1.0	1.0	1.5	3.4	4.4
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)