

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: P517969

Luminaire Tested: HVL8-2-LD4-3HI-35-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: P517969
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-O-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6412.9 lumens
Efficiency: N/A
Efficacy: 101.8 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

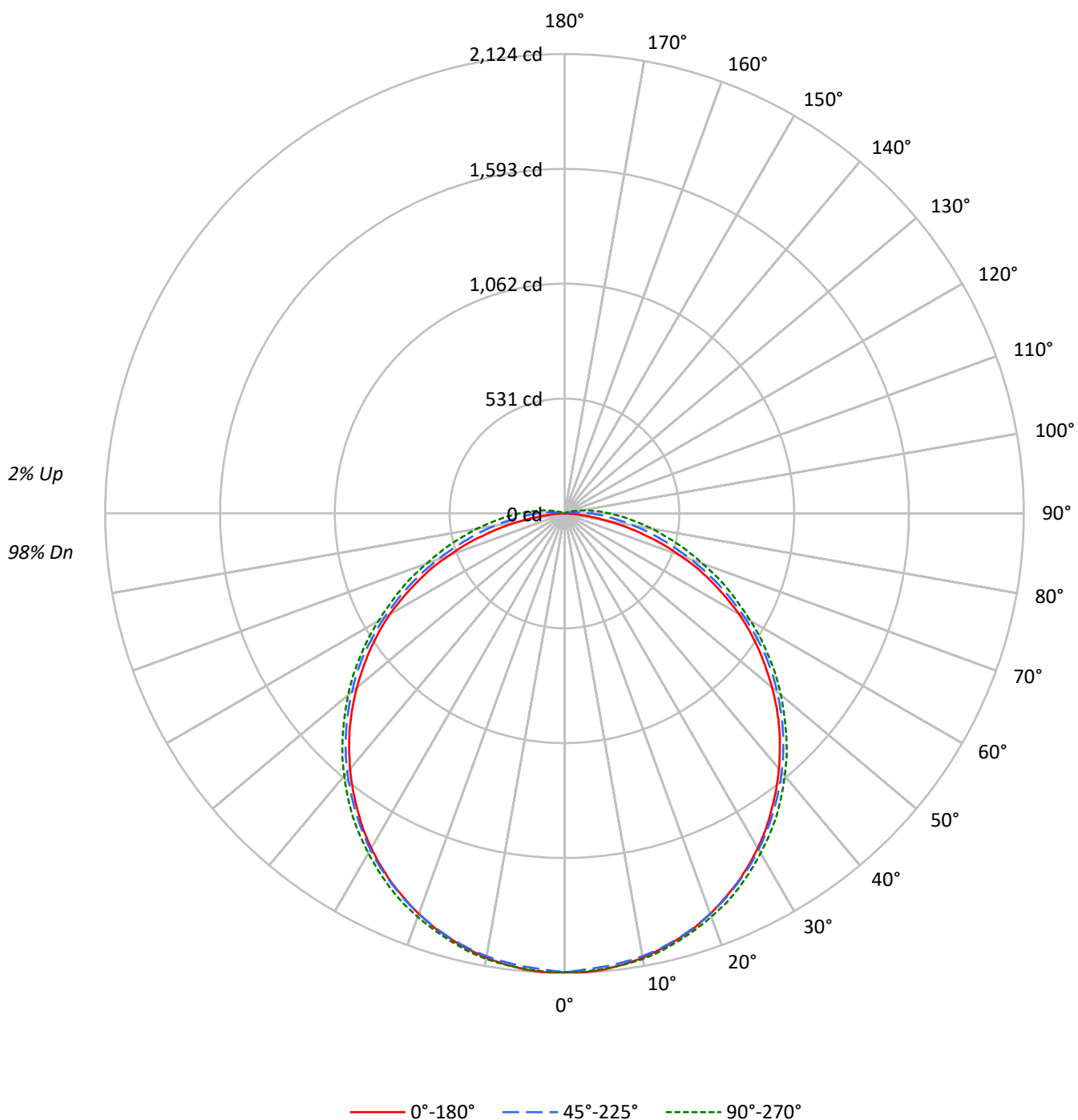
Input Watts (W): 63
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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°	17123	17123	17123
5°	17027	16698	16757
10°	16852	16358	16421
15°	16645	15990	16018
20°	16426	15583	15627
25°	16175	15168	15229
30°	15893	14728	14777
35°	15551	14249	14329
40°	15193	13747	13807
45°	14807	13202	13243
50°	14321	12579	12637
55°	13791	11898	11968
60°	13164	11029	11188
65°	12211	10061	10414
70°	10890	8932	9514
75°	9076	7699	8697
80°	6503	6485	7950
85°	3131	5252	7239

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 14807 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	200.7	3.1
10°-20°	575.7	9.0
20°-30°	873.6	13.6
30°-40°	1056.3	16.5
40°-50°	1102.2	17.2
50°-60°	1007.7	15.7
60°-70°	785.6	12.2
70°-80°	491.4	7.7
80°-90°	223.2	3.5
90°-100°	74.8	1.2
100°-110°	18.8	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°	1650.0	25.7
0°-40°	2706.3	42.2
0°-60°	4816.2	75.1
0°-90°	6316.4	98.5
90°-120°	96.5	1.5
90°-150°	96.5	1.5
90°-180°	97.0	1.5
0°-180°	6412.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2121	2121	2121	2121	2121	
5°	2116	2112	2103	2113	2113	201
15°	2036	2040	2034	2046	2045	575
25°	1886	1888	1890	1906	1909	869
35°	1670	1678	1684	1702	1708	1045
45°	1405	1418	1429	1443	1450	1083
55°	1096	1110	1130	1146	1154	980
65°	754	766	793	824	838	746
75°	382	405	464	520	539	407
85°	66	122	210	277	302	84
90°	0	46	124	186	208	3
95°	0	12	64	116	134	0
105°	1	2	10	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

TEST NUMBER: P517969

CATALOG NUMBER: HVL8-2-LD4-3HI-35-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2121.0	2121.0	2121.0	2121.0	2121.0
2.5°	2123.5	2120.5	2111.0	2120.5	2120.0
5°	2116.5	2112.5	2103.0	2113.0	2113.0
7.5°	2102.5	2101.0	2092.5	2104.0	2104.0
10°	2086.0	2085.5	2078.5	2091.0	2091.5
12.5°	2063.0	2065.0	2058.5	2070.5	2072.0
15°	2036.0	2039.5	2034.0	2045.5	2045.0
17.5°	2006.5	2008.5	2004.5	2017.5	2017.0
20°	1970.0	1972.5	1969.5	1983.0	1984.5
22.5°	1929.5	1933.0	1932.5	1946.5	1950.5
25°	1886.5	1888.0	1890.0	1906.0	1909.0
27.5°	1839.0	1841.5	1845.0	1859.5	1862.5
30°	1787.0	1791.0	1795.0	1810.0	1814.0
32.5°	1732.0	1736.0	1741.0	1760.5	1762.5
35°	1670.0	1677.5	1684.5	1701.5	1708.5
37.5°	1608.0	1617.5	1624.0	1642.0	1647.5
40°	1542.5	1552.0	1562.5	1581.5	1585.0
42.5°	1474.0	1485.0	1497.5	1514.5	1520.5
45°	1405.0	1417.5	1429.0	1443.0	1450.0
47.5°	1330.5	1343.0	1357.0	1373.0	1377.5
50°	1253.5	1268.0	1283.0	1298.0	1306.0
52.5°	1174.5	1192.0	1209.0	1225.0	1232.5
55°	1096.5	1109.5	1130.0	1146.5	1154.0
57.5°	1015.5	1026.5	1045.0	1072.0	1076.0
60°	933.0	943.0	962.0	984.0	993.0
62.5°	842.0	855.5	875.5	903.5	911.5
65°	753.5	766.5	793.0	824.5	837.5
67.5°	668.0	672.5	706.5	739.5	760.5
70°	567.0	584.0	623.5	664.0	680.0
72.5°	480.0	497.0	540.5	588.0	608.0
75°	381.5	405.0	464.0	519.5	539.0
77.5°	295.0	321.0	394.0	450.0	472.5
80°	206.0	246.5	326.0	389.0	413.5
82.5°	129.5	179.5	264.5	330.5	352.0
85°	66.0	122.0	209.5	277.0	301.5
87.5°	17.5	79.0	163.0	227.5	252.5
90°	0.5	45.5	123.5	185.5	208.0
92.5°	0.5	25.5	92.0	147.5	170.5
95°	0.5	12.0	64.0	116.0	134.0
97.5°	0.5	5.0	44.0	87.5	105.5
100°	0.5	2.5	28.0	63.5	79.0
102.5°	1.0	1.5	17.5	45.5	58.0
105°	1.0	1.5	10.5	31.0	41.5
107.5°	1.0	1.5	6.0	21.0	28.5
110°	1.5	1.5	3.5	13.0	19.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.5	1.5	2.0	8.5	12.5
115°	1.5	1.5	2.0	5.5	8.0
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)