

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: P517965

Luminaire Tested: HVL8-2-LD4-3HI-30-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: P517965
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3HI-30-UNV-O-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6110.0 lumens
Efficiency: N/A
Efficacy: 97.0 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

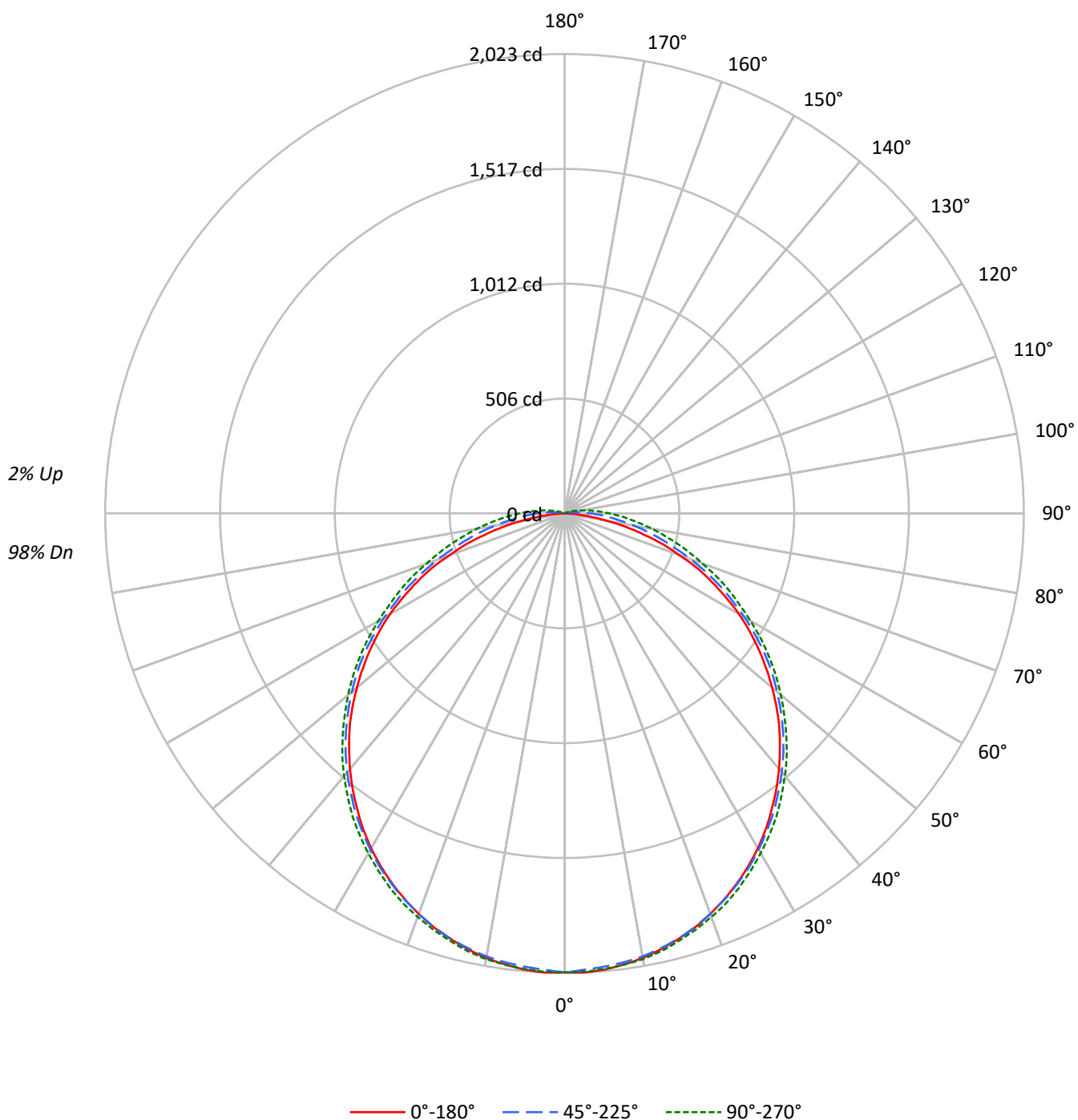
Input Watts (W): 63
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	16314	16314	16314
5°	16223	15909	15965
10°	16057	15586	15645
15°	15858	15234	15262
20°	15651	14847	14889
25°	15411	14451	14509
30°	15143	14032	14078
35°	14816	13576	13652
40°	14475	13098	13154
45°	14107	12579	12617
50°	13644	11985	12040
55°	13140	11336	11403
60°	12541	10508	10659
65°	11634	9586	9921
70°	10375	8511	9065
75°	8648	7336	8285
80°	6197	6179	7575
85°	2984	5004	6898

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 14107 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	191.2	3.1
10°-20°	548.5	9.0
20°-30°	832.3	13.6
30°-40°	1006.4	16.5
40°-50°	1050.1	17.2
50°-60°	960.1	15.7
60°-70°	748.4	12.2
70°-80°	468.2	7.7
80°-90°	212.7	3.5
90°-100°	71.3	1.2
100°-110°	17.9	0.3
110°-120°	2.8	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°	1572.1	25.7
0°-40°	2578.5	42.2
0°-60°	4588.7	75.1
0°-90°	6018.0	98.5
90°-120°	92.0	1.5
90°-150°	92.0	1.5
90°-180°	92.0	1.5
0°-180°	6110.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2021	2021	2021	2021	2021	
5°	2016	2013	2004	2013	2013	191
15°	1940	1943	1938	1949	1948	548
25°	1797	1799	1801	1816	1819	828
35°	1591	1598	1605	1621	1628	996
45°	1339	1350	1362	1375	1382	1031
55°	1045	1057	1077	1092	1100	933
65°	718	730	756	786	798	710
75°	364	386	442	495	514	387
85°	63	116	200	264	287	80
90°	0	43	118	177	198	2
95°	0	11	61	110	128	0
105°	1	1	10	30	40	1
115°	1	1	2	5	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°	2020.8	2020.8	2020.8	2020.8	2020.8
2.5°	2023.2	2020.3	2011.3	2020.3	2019.9
5°	2016.5	2012.7	2003.7	2013.2	2013.2
7.5°	2003.2	2001.8	1993.7	2004.6	2004.6
10°	1987.5	1987.0	1980.3	1992.2	1992.7
12.5°	1965.6	1967.5	1961.3	1972.7	1974.1
15°	1939.8	1943.2	1937.9	1948.9	1948.4
17.5°	1911.7	1913.6	1909.8	1922.2	1921.7
20°	1877.0	1879.3	1876.5	1889.3	1890.8
22.5°	1838.4	1841.7	1841.2	1854.6	1858.4
25°	1797.4	1798.8	1800.7	1816.0	1818.8
27.5°	1752.1	1754.5	1757.9	1771.7	1774.5
30°	1702.6	1706.4	1710.2	1724.5	1728.3
32.5°	1650.2	1654.0	1658.8	1677.3	1679.3
35°	1591.1	1598.3	1604.9	1621.1	1627.8
37.5°	1532.0	1541.1	1547.3	1564.4	1569.7
40°	1469.6	1478.7	1488.7	1506.8	1510.1
42.5°	1404.4	1414.9	1426.8	1443.0	1448.7
45°	1338.6	1350.5	1361.5	1374.8	1381.5
47.5°	1267.7	1279.6	1292.9	1308.1	1312.4
50°	1194.3	1208.1	1222.4	1236.7	1244.3
52.5°	1119.0	1135.7	1151.9	1167.1	1174.3
55°	1044.7	1057.1	1076.6	1092.3	1099.5
57.5°	967.5	978.0	995.6	1021.4	1025.2
60°	888.9	898.5	916.6	937.5	946.1
62.5°	802.2	815.1	834.1	860.8	868.4
65°	717.9	730.3	755.5	785.6	797.9
67.5°	636.4	640.7	673.1	704.6	724.6
70°	540.2	556.4	594.1	632.6	647.9
72.5°	457.3	473.5	515.0	560.2	579.3
75°	363.5	385.9	442.1	495.0	513.5
77.5°	281.1	305.8	375.4	428.7	450.2
80°	196.3	234.9	310.6	370.6	394.0
82.5°	123.4	171.0	252.0	314.9	335.4
85°	62.9	116.2	199.6	263.9	287.3
87.5°	16.7	75.3	155.3	216.8	240.6
90°	0.5	43.4	117.7	176.7	198.2
92.5°	0.5	24.3	87.7	140.5	162.4
95°	0.5	11.4	61.0	110.5	127.7
97.5°	0.5	4.8	41.9	83.4	100.5
100°	0.5	2.4	26.7	60.5	75.3
102.5°	1.0	1.4	16.7	43.4	55.3
105°	1.0	1.4	10.0	29.5	39.5
107.5°	1.0	1.4	5.7	20.0	27.2
110°	1.4	1.4	3.3	12.4	18.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.4	1.4	1.9	8.1	11.9
115°	1.4	1.4	1.9	5.2	7.6
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)