

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: P517970

Luminaire Tested: HVL8-2-LD4-3HI-35-UNV-O-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: P517970
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
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: 5366.0 lumens
Efficiency: N/A
Efficacy: 85.2 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

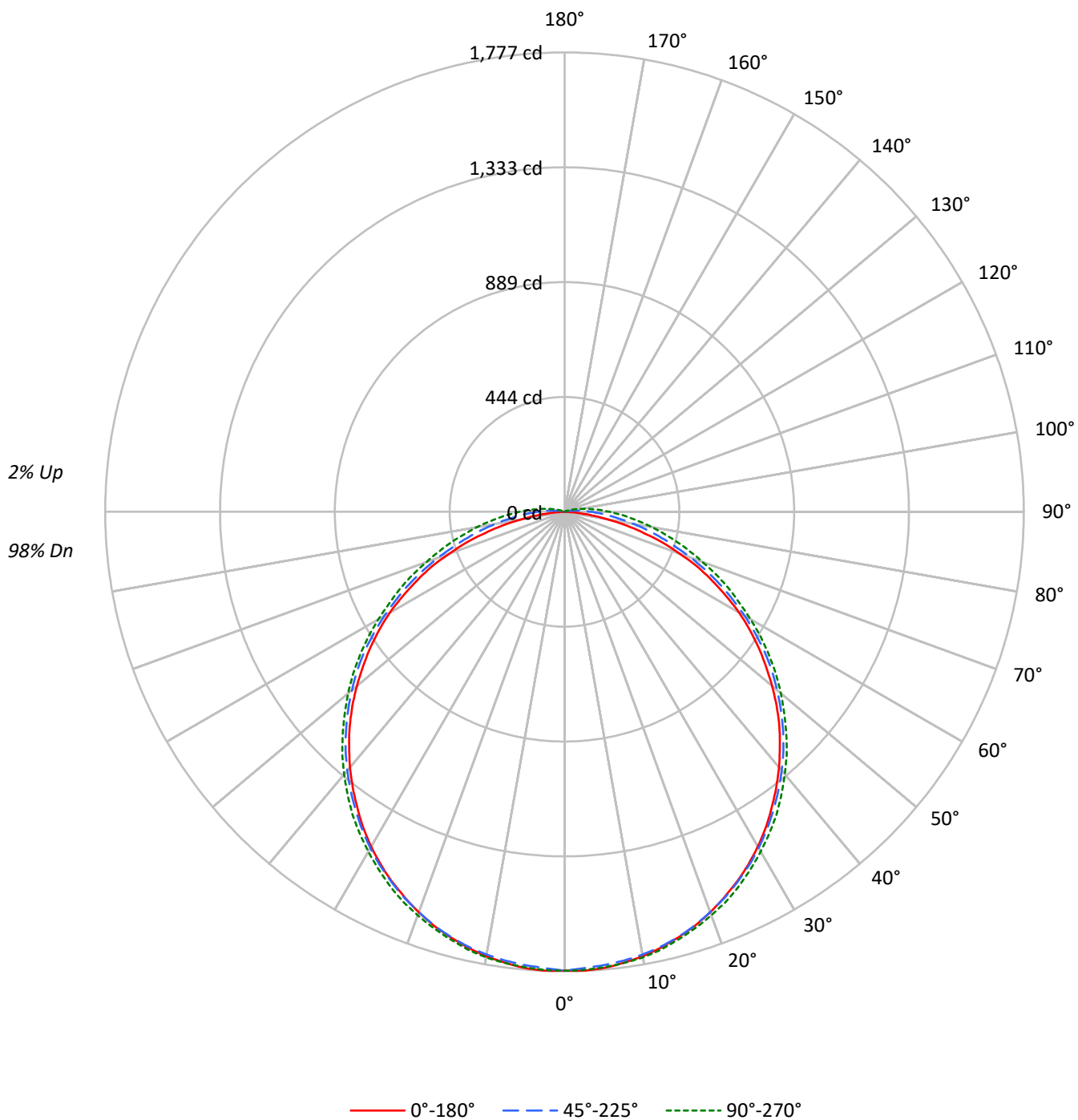
Input Watts (W): 63
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	14327	14327	14327
5°	14248	13972	14022
10°	14101	13688	13741
15°	13927	13380	13404
20°	13745	13039	13075
25°	13534	12692	12743
30°	13299	12324	12365
35°	13012	11923	11990
40°	12713	11503	11553
45°	12389	11047	11081
50°	11983	10526	10574
55°	11540	9956	10014
60°	11015	9229	9361
65°	10218	8418	8714
70°	9111	7473	7961
75°	7594	6443	7277
80°	5442	5427	6652
85°	2618	4395	6057

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 12389 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	167.9	3.1
10°-20°	481.7	9.0
20°-30°	731.0	13.6
30°-40°	883.9	16.5
40°-50°	922.2	17.2
50°-60°	843.2	15.7
60°-70°	657.3	12.2
70°-80°	411.2	7.7
80°-90°	186.8	3.5
90°-100°	62.6	1.2
100°-110°	15.7	0.3
110°-120°	2.5	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°	1380.7	25.7
0°-40°	2264.5	42.2
0°-60°	4030.0	75.1
0°-90°	5285.2	98.5
90°-120°	80.8	1.5
90°-150°	80.8	1.5
90°-180°	81.0	1.5
0°-180°	5366.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1775	1775	1775	1775	1775	
5°	1771	1768	1760	1768	1768	168
15°	1704	1707	1702	1712	1711	481
25°	1578	1580	1582	1595	1597	727
35°	1397	1404	1410	1424	1430	875
45°	1176	1186	1196	1207	1213	906
55°	918	928	946	959	966	820
65°	630	641	664	690	701	624
75°	319	339	388	435	451	340
85°	55	102	175	232	252	70
90°	0	38	103	155	174	2
95°	0	10	54	97	112	0
105°	1	1	9	26	35	1
115°	1	1	2	5	7	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-35-UNV-O-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1774.7	1774.7	1774.7	1774.7	1774.7
2.5°	1776.8	1774.3	1766.4	1774.3	1773.9
5°	1771.0	1767.6	1759.7	1768.1	1768.1
7.5°	1759.3	1758.0	1750.9	1760.5	1760.5
10°	1745.5	1745.0	1739.2	1749.6	1750.1
12.5°	1726.2	1727.9	1722.5	1732.5	1733.7
15°	1703.6	1706.6	1702.0	1711.6	1711.2
17.5°	1678.9	1680.6	1677.3	1688.1	1687.7
20°	1648.4	1650.5	1648.0	1659.3	1660.5
22.5°	1614.5	1617.4	1617.0	1628.7	1632.1
25°	1578.5	1579.8	1581.5	1594.8	1597.4
27.5°	1538.8	1540.9	1543.8	1555.9	1558.4
30°	1495.3	1498.6	1502.0	1514.5	1517.9
32.5°	1449.3	1452.6	1456.8	1473.1	1474.8
35°	1397.4	1403.6	1409.5	1423.7	1429.6
37.5°	1345.5	1353.4	1358.9	1373.9	1378.5
40°	1290.7	1298.6	1307.4	1323.3	1326.3
42.5°	1233.4	1242.6	1253.0	1267.3	1272.3
45°	1175.6	1186.1	1195.7	1207.4	1213.3
47.5°	1113.3	1123.8	1135.5	1148.9	1152.6
50°	1048.9	1061.0	1073.6	1086.1	1092.8
52.5°	982.8	997.4	1011.6	1025.0	1031.3
55°	917.5	928.4	945.5	959.3	965.6
57.5°	849.7	858.9	874.4	897.0	900.3
60°	780.7	789.1	805.0	823.4	830.9
62.5°	704.5	715.8	732.6	756.0	762.7
65°	630.5	641.4	663.5	689.9	700.8
67.5°	558.9	562.7	591.2	618.8	636.3
70°	474.4	488.7	521.7	555.6	569.0
72.5°	401.6	415.9	452.3	492.0	508.7
75°	319.2	338.9	388.3	434.7	451.0
77.5°	246.8	268.6	329.7	376.5	395.4
80°	172.4	206.3	272.8	325.5	346.0
82.5°	108.4	150.2	221.3	276.5	294.5
85°	55.2	102.1	175.3	231.8	252.3
87.5°	14.6	66.1	136.4	190.4	211.3
90°	0.4	38.1	103.3	155.2	174.0
92.5°	0.4	21.3	77.0	123.4	142.7
95°	0.4	10.0	53.6	97.1	112.1
97.5°	0.4	4.2	36.8	73.2	88.3
100°	0.4	2.1	23.4	53.1	66.1
102.5°	0.8	1.3	14.6	38.1	48.5
105°	0.8	1.3	8.8	25.9	34.7
107.5°	0.8	1.3	5.0	17.6	23.8
110°	1.3	1.3	2.9	10.9	15.9

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

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.3	1.3	1.7	7.1	10.5
115°	1.3	1.3	1.7	4.6	6.7
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)