

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: P518000

Luminaire Tested: HVL8-2-LD4-3STD-35-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: P518000
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3STD-35-UNV-C-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: 5504.0 lumens
Efficiency: N/A
Efficacy: 115.1 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

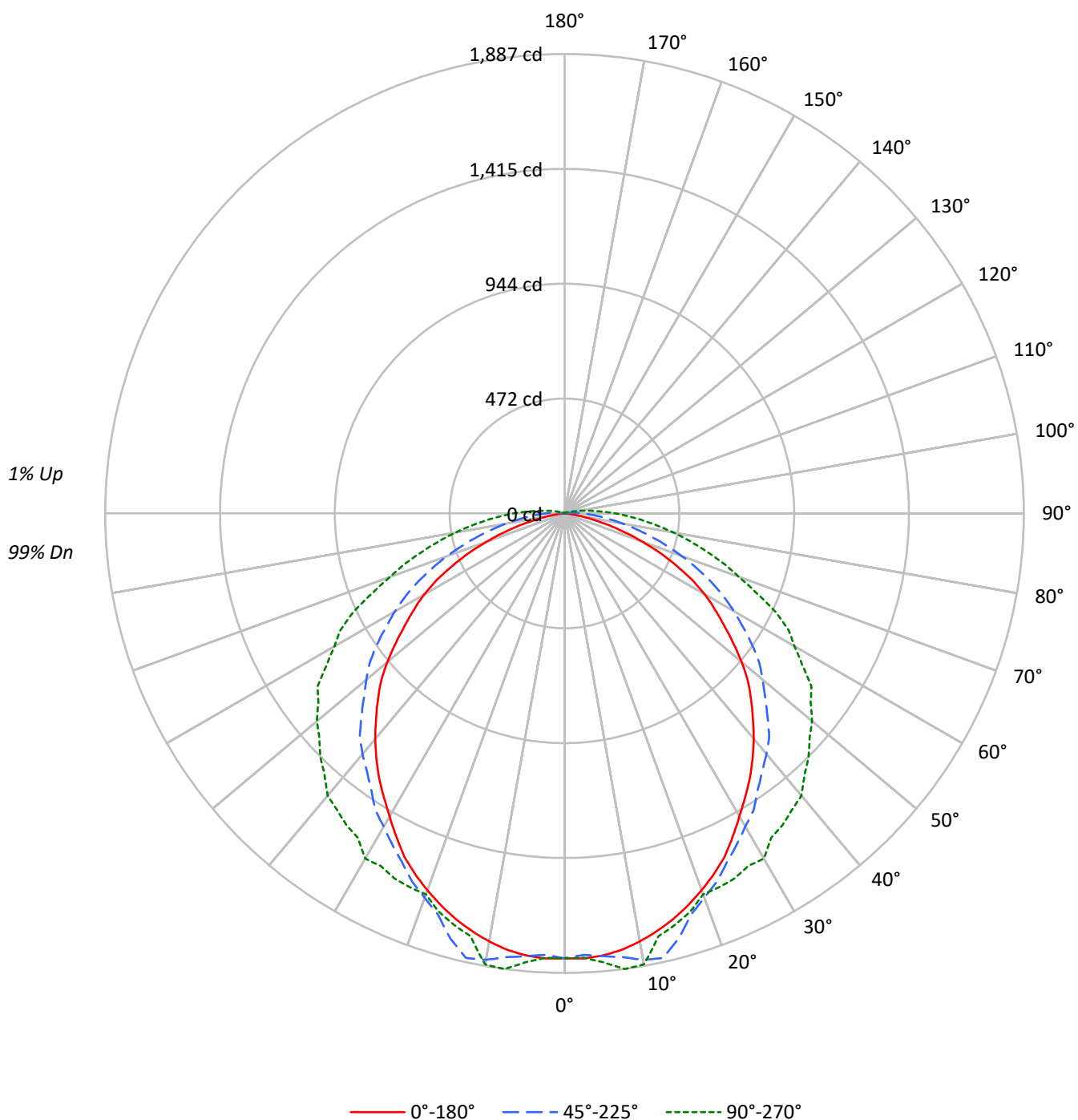
Input Watts (W): 47.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	14749	14749	14749
5°	14663	14492	14677
10°	14417	14651	14768
15°	14103	14219	13708
20°	13732	13287	13109
25°	13342	12679	13191
30°	12780	12184	13336
35°	12362	11715	13100
40°	11914	11352	13182
45°	11433	10896	12944
50°	10859	10418	12846
55°	10051	9907	12838
60°	9399	9221	12291
65°	8197	8411	11899
70°	6563	7373	10670
75°	4551	6133	9740
80°	2431	4886	8744
85°	811	3610	7702

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 12944 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	175.6	3.2
10°-20°	500.1	9.1
20°-30°	744.0	13.5
30°-40°	894.3	16.2
40°-50°	941.3	17.1
50°-60°	873.5	15.9
60°-70°	690.6	12.5
70°-80°	421.8	7.7
80°-90°	183.8	3.3
90°-100°	57.2	1.0
100°-110°	12.9	0.2
110°-120°	5.2	0.1
120°-130°	2.9	0.1
130°-140°	0.8	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°	1419.7	25.8
0°-40°	2314.0	42.0
0°-60°	4128.8	75.0
0°-90°	5425.1	98.6
90°-120°	75.3	1.4
90°-150°	78.9	1.4
90°-180°	79.0	1.4
0°-180°	5504.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1827	1827	1827	1827	1827	
5°	1823	1819	1825	1846	1851	173
15°	1725	1791	1809	1749	1750	486
25°	1556	1656	1580	1627	1654	714
35°	1328	1364	1385	1511	1562	830
45°	1085	1090	1179	1366	1417	836
55°	799	812	941	1147	1238	718
65°	506	522	663	877	957	501
75°	191	254	370	568	604	209
85°	17	60	144	280	321	26
90°	0	18	76	177	209	1
95°	0	4	33	97	119	0
105°	0	3	7	19	27	1
115°	0	2	5	9	9	1
125°	0	1	2	6	8	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

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CATALOG NUMBER: HVL8-2-LD4-3STD-35-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1827.0	1827.0	1827.0	1827.0	1827.0
2.5°	1829.3	1824.4	1814.4	1824.1	1826.7
5°	1822.6	1818.8	1825.2	1845.6	1850.8
7.5°	1807.3	1821.4	1838.2	1875.4	1887.3
10°	1784.6	1811.4	1861.6	1893.3	1881.0
12.5°	1757.1	1802.5	1869.8	1808.0	1779.4
15°	1725.1	1791.3	1808.8	1748.9	1750.0
17.5°	1687.5	1782.0	1728.0	1726.5	1715.7
20°	1646.9	1750.7	1679.3	1676.3	1664.8
22.5°	1603.3	1709.4	1636.1	1630.1	1661.4
25°	1556.1	1655.5	1579.9	1627.2	1653.6
27.5°	1496.9	1584.7	1533.0	1600.0	1633.1
30°	1437.0	1511.8	1485.0	1578.4	1637.2
32.5°	1380.8	1435.5	1445.5	1570.2	1579.9
35°	1327.6	1364.4	1384.9	1510.7	1562.0
37.5°	1269.1	1279.2	1333.5	1485.7	1535.2
40°	1209.6	1203.3	1290.3	1444.8	1513.3
42.5°	1145.6	1143.3	1244.6	1424.3	1458.6
45°	1084.9	1089.7	1179.4	1366.3	1417.3
47.5°	1022.7	1029.1	1117.7	1302.6	1365.9
50°	950.5	958.7	1062.6	1246.1	1327.6
52.5°	872.4	888.0	1009.0	1192.5	1274.7
55°	799.1	812.1	940.9	1146.7	1237.9
57.5°	732.1	739.9	870.5	1089.0	1157.9
60°	666.2	668.1	804.3	1025.0	1090.9
62.5°	590.6	594.0	736.2	949.4	1037.6
65°	505.8	521.8	662.9	877.2	956.9
67.5°	426.5	454.4	588.0	811.0	852.7
70°	341.7	388.9	514.7	733.2	762.6
72.5°	263.9	319.3	439.5	646.1	687.4
75°	191.3	253.5	369.6	567.9	603.7
77.5°	128.8	192.0	304.1	481.6	528.9
80°	77.0	140.3	245.6	401.6	454.8
82.5°	39.5	94.2	190.6	336.8	384.5
85°	17.1	59.5	144.0	279.5	320.8
87.5°	4.8	33.9	106.1	225.9	260.9
90°	0.4	17.9	75.6	177.2	208.8
92.5°	0.4	8.6	53.2	134.0	158.2
95°	0.4	4.5	33.1	97.1	118.7
97.5°	0.4	2.6	20.1	68.9	87.1
100°	0.4	2.2	11.9	45.8	62.2
102.5°	0.4	2.6	8.2	29.0	40.6
105°	0.4	2.6	6.7	19.0	26.8
107.5°	0.7	2.6	6.0	14.1	18.6
110°	0.4	2.2	6.3	10.8	14.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.7	1.9	6.0	8.9	10.8
115°	0.4	1.5	5.2	8.6	8.9
117.5°	0.7	1.1	4.1	8.6	8.9
120°	0.7	0.7	3.3	8.2	9.3
122.5°	0.7	0.7	2.6	7.4	8.9
125°	0.4	0.7	2.2	5.6	7.8
127.5°	0.7	0.7	1.9	4.5	6.0
130°	0.7	0.7	1.5	3.3	4.5
132.5°	0.7	0.7	1.1	2.6	3.3
135°	0.7	0.7	0.7	1.9	2.6
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)