

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: P518008

Luminaire Tested: HVL8-2-LD4-3STD-50-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: P518008
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3STD-50-UNV-C-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5653.0 lumens
Efficiency: N/A
Efficacy: 118.3 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

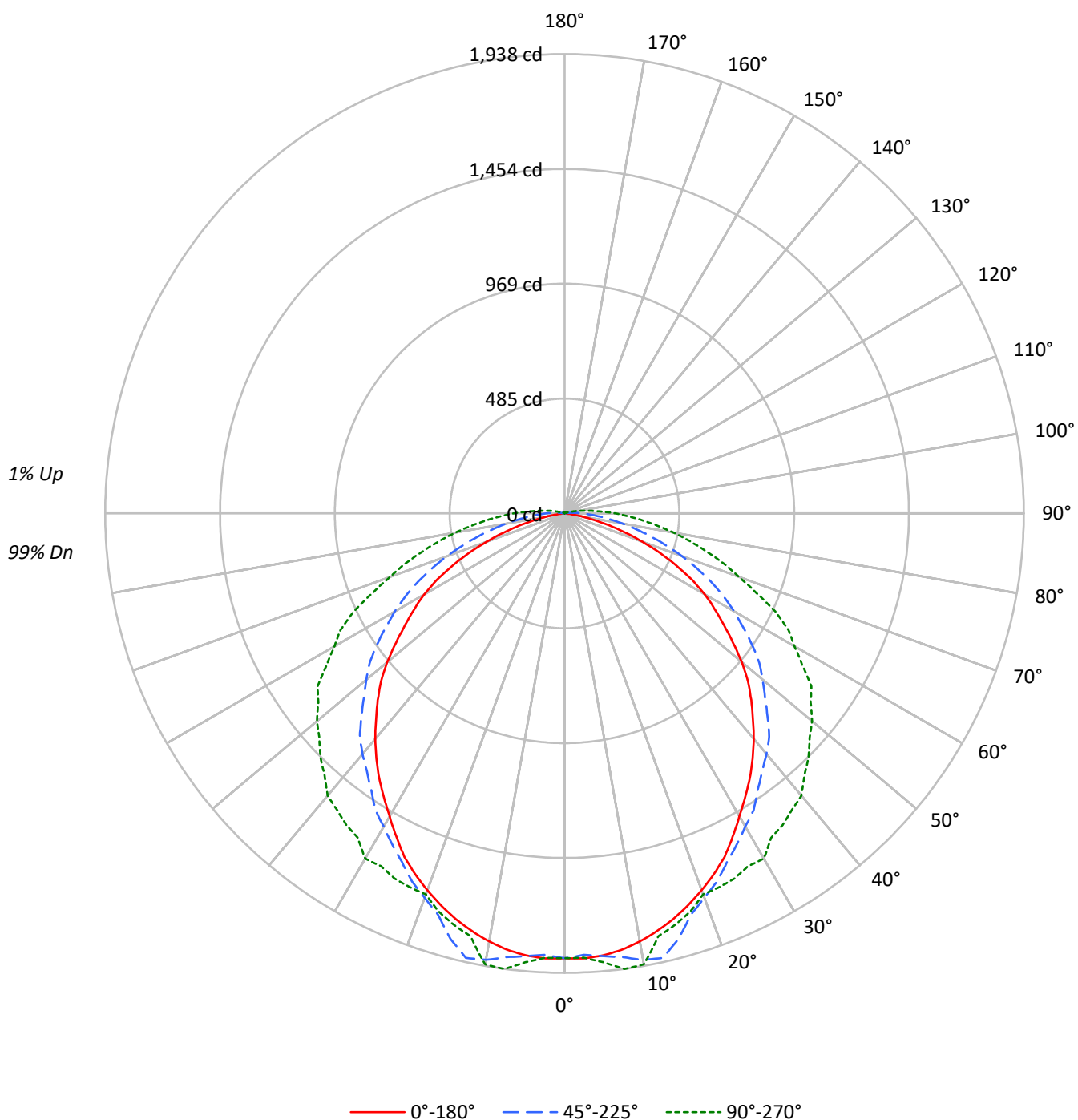
Input Watts (W): 47.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	15149	15149	15149
5°	15060	14884	15075
10°	14808	15048	15168
15°	14485	14604	14079
20°	14104	13646	13464
25°	13703	13023	13549
30°	13126	12514	13697
35°	12697	12032	13455
40°	12236	11660	13538
45°	11743	11192	13294
50°	11154	10700	13193
55°	10322	10175	13186
60°	9653	9471	12623
65°	8419	8638	12221
70°	6739	7574	10958
75°	4675	6299	10003
80°	2497	5019	8980
85°	835	3708	7911

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 13294 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	180.3	3.2
10°-20°	513.6	9.1
20°-30°	764.2	13.5
30°-40°	918.5	16.2
40°-50°	966.8	17.1
50°-60°	897.1	15.9
60°-70°	709.3	12.5
70°-80°	433.3	7.7
80°-90°	188.8	3.3
90°-100°	58.8	1.0
100°-110°	13.2	0.2
110°-120°	5.3	0.1
120°-130°	3.0	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°	1458.1	25.8
0°-40°	2376.7	42.0
0°-60°	4240.6	75.0
0°-90°	5571.9	98.6
90°-120°	77.3	1.4
90°-150°	81.1	1.4
90°-180°	81.0	1.4
0°-180°	5653.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1876	1876	1876	1876	1876	
5°	1872	1868	1875	1896	1901	177
15°	1772	1840	1858	1796	1797	499
25°	1598	1700	1623	1671	1698	734
35°	1364	1401	1422	1552	1604	852
45°	1114	1119	1211	1403	1456	859
55°	821	834	966	1178	1271	737
65°	520	536	681	901	983	514
75°	196	260	380	583	620	214
85°	18	61	148	287	330	27
90°	0	18	78	182	214	1
95°	0	5	34	100	122	0
105°	0	3	7	20	28	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-50-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1876.5	1876.5	1876.5	1876.5	1876.5
2.5°	1878.8	1873.8	1863.5	1873.4	1876.1
5°	1871.9	1868.1	1874.6	1895.6	1901.0
7.5°	1856.2	1870.8	1888.0	1926.2	1938.4
10°	1832.9	1860.4	1912.0	1944.5	1931.9
12.5°	1804.6	1851.3	1920.4	1857.0	1827.6
15°	1771.8	1839.8	1857.8	1796.2	1797.4
17.5°	1733.1	1830.2	1774.8	1773.3	1762.2
20°	1691.5	1798.1	1724.7	1721.7	1709.8
22.5°	1646.8	1755.7	1680.4	1674.3	1706.4
25°	1598.2	1700.3	1622.7	1671.2	1698.4
27.5°	1537.4	1627.6	1574.5	1643.3	1677.3
30°	1475.9	1552.7	1525.2	1621.1	1681.5
32.5°	1418.2	1474.4	1484.7	1612.7	1622.7
35°	1363.5	1401.3	1422.4	1551.6	1604.3
37.5°	1303.5	1313.8	1369.6	1526.0	1576.8
40°	1242.3	1235.8	1325.3	1483.9	1554.2
42.5°	1176.6	1174.3	1278.3	1462.9	1498.1
45°	1114.3	1119.2	1211.4	1403.3	1455.6
47.5°	1050.4	1056.9	1147.9	1337.9	1402.9
50°	976.3	984.7	1091.3	1279.8	1363.5
52.5°	896.0	912.1	1036.3	1224.7	1309.2
55°	820.7	834.1	966.3	1177.7	1271.4
57.5°	751.9	759.9	894.1	1118.5	1189.2
60°	684.2	686.1	826.1	1052.7	1120.4
62.5°	606.6	610.1	756.1	975.1	1065.7
65°	519.5	535.9	680.8	901.0	982.8
67.5°	438.1	466.7	604.0	832.9	875.7
70°	350.9	399.5	528.7	753.0	783.2
72.5°	271.0	328.0	451.4	663.6	706.0
75°	196.5	260.3	379.6	583.3	620.0
77.5°	132.3	197.2	312.3	494.6	543.2
80°	79.1	144.1	252.3	412.5	467.1
82.5°	40.5	96.7	195.7	345.9	394.9
85°	17.6	61.2	147.9	287.1	329.5
87.5°	5.0	34.8	108.9	232.0	268.0
90°	0.4	18.3	77.6	182.0	214.4
92.5°	0.4	8.8	54.7	137.6	162.5
95°	0.4	4.6	34.0	99.8	121.9
97.5°	0.4	2.7	20.6	70.7	89.4
100°	0.4	2.3	12.2	47.0	63.8
102.5°	0.4	2.7	8.4	29.8	41.7
105°	0.4	2.7	6.9	19.5	27.5
107.5°	0.8	2.7	6.1	14.5	19.1
110°	0.4	2.3	6.5	11.1	14.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	1.9	6.1	9.2	11.1
115°	0.4	1.5	5.4	8.8	9.2
117.5°	0.8	1.1	4.2	8.8	9.2
120°	0.8	0.8	3.4	8.4	9.6
122.5°	0.8	0.8	2.7	7.6	9.2
125°	0.4	0.8	2.3	5.7	8.0
127.5°	0.8	0.8	1.9	4.6	6.1
130°	0.8	0.8	1.5	3.4	4.6
132.5°	0.8	0.8	1.1	2.7	3.4
135°	0.8	0.8	0.8	1.9	2.7
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)