

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: P517996

Luminaire Tested: HVL8-2-LD4-3STD-30-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: P517996
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3STD-30-UNV-C-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5244.1 lumens
Efficiency: N/A
Efficacy: 109.7 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

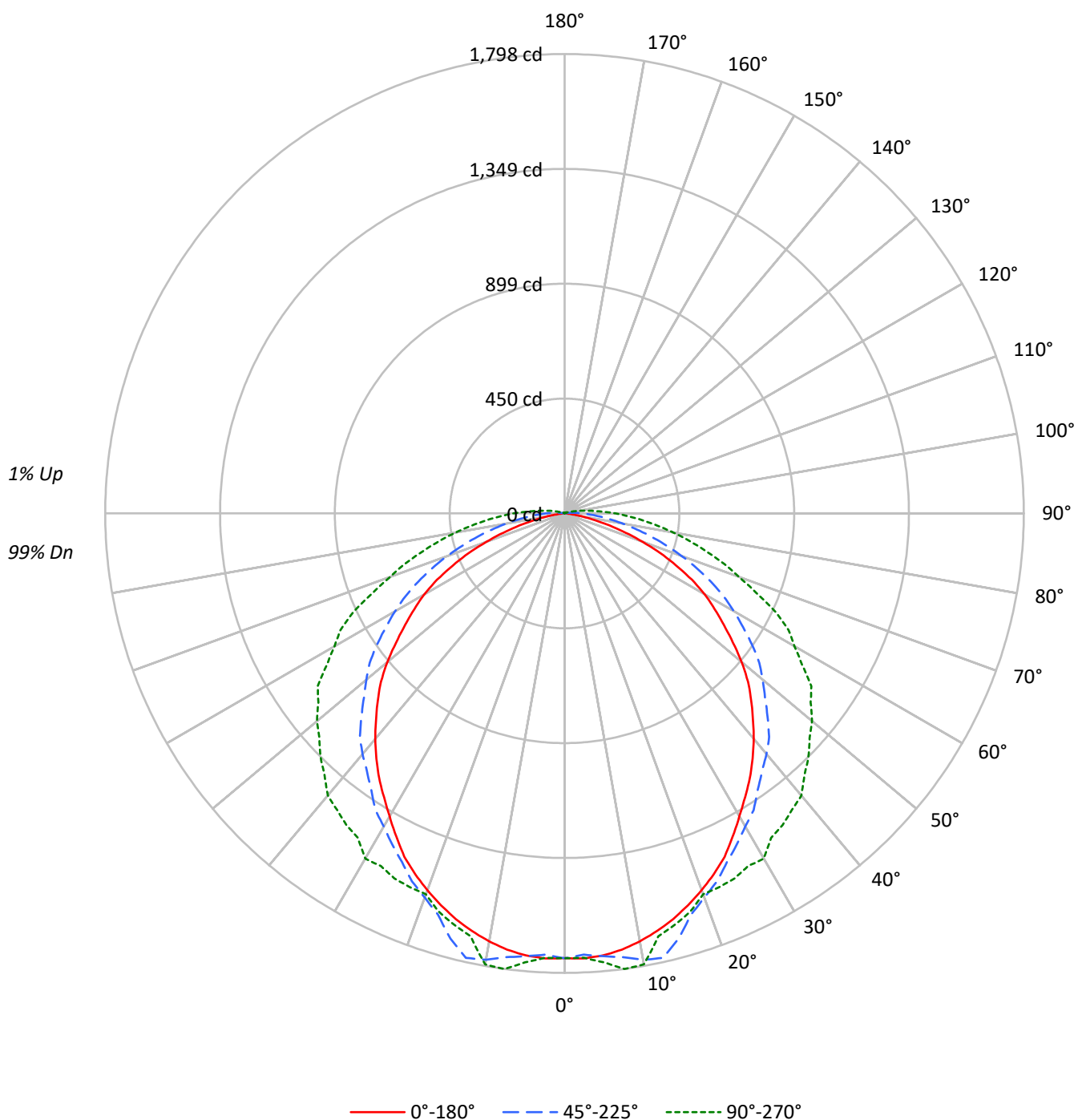
Input Watts (W): 47.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	14053	14053	14053
5°	13970	13807	13984
10°	13736	13960	14070
15°	13437	13547	13060
20°	13083	12659	12490
25°	12712	12080	12568
30°	12177	11608	12707
35°	11778	11162	12481
40°	11351	10816	12559
45°	10894	10382	12332
50°	10346	9926	12239
55°	9575	9439	12232
60°	8955	8785	11709
65°	7809	8012	11336
70°	6251	7025	10166
75°	4337	5842	9281
80°	2317	4655	8331
85°	773	3440	7339

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 12332 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	167.3	3.2
10°-20°	476.4	9.1
20°-30°	708.9	13.5
30°-40°	852.1	16.2
40°-50°	896.9	17.1
50°-60°	832.2	15.9
60°-70°	658.0	12.5
70°-80°	401.9	7.7
80°-90°	175.1	3.3
90°-100°	54.5	1.0
100°-110°	12.3	0.2
110°-120°	4.9	0.1
120°-130°	2.8	0.1
130°-140°	0.7	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°	1352.6	25.8
0°-40°	2204.7	42.0
0°-60°	3933.8	75.0
0°-90°	5168.8	98.6
90°-120°	71.7	1.4
90°-150°	75.2	1.4
90°-180°	75.0	1.4
0°-180°	5244.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1741	1741	1741	1741	1741	
5°	1736	1733	1739	1758	1763	165
15°	1644	1707	1723	1666	1667	463
25°	1483	1577	1505	1550	1576	681
35°	1265	1300	1320	1439	1488	791
45°	1034	1038	1124	1302	1350	797
55°	761	774	896	1092	1179	684
65°	482	497	632	836	912	477
75°	182	242	352	541	575	199
85°	16	57	137	266	306	25
90°	0	17	72	169	199	1
95°	0	4	32	93	113	0
105°	0	2	6	18	26	1
115°	0	1	5	8	8	1
125°	0	1	2	5	7	1
135°	1	1	1	2	2	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°	1740.7	1740.7	1740.7	1740.7	1740.7
2.5°	1742.9	1738.2	1728.7	1737.9	1740.4
5°	1736.5	1732.9	1738.9	1758.5	1763.4
7.5°	1721.9	1735.4	1751.4	1786.8	1798.2
10°	1700.3	1725.8	1773.7	1803.8	1792.1
12.5°	1674.1	1717.3	1781.5	1722.6	1695.3
15°	1643.6	1706.7	1723.3	1666.3	1667.3
17.5°	1607.7	1697.8	1646.4	1645.0	1634.7
20°	1569.1	1668.0	1599.9	1597.1	1586.1
22.5°	1527.6	1628.7	1558.8	1553.1	1582.9
25°	1482.6	1577.3	1505.3	1550.3	1575.5
27.5°	1426.2	1509.9	1460.6	1524.4	1556.0
30°	1369.1	1440.4	1414.8	1503.9	1559.9
32.5°	1315.6	1367.7	1377.3	1496.0	1505.3
35°	1264.9	1300.0	1319.5	1439.3	1488.2
37.5°	1209.2	1218.8	1270.5	1415.6	1462.7
40°	1152.4	1146.4	1229.4	1376.6	1441.8
42.5°	1091.5	1089.3	1185.8	1357.0	1389.7
45°	1033.7	1038.3	1123.7	1301.7	1350.3
47.5°	974.4	980.5	1064.9	1241.1	1301.4
50°	905.6	913.4	1012.4	1187.2	1264.9
52.5°	831.2	846.1	961.3	1136.1	1214.5
55°	761.3	773.7	896.4	1092.5	1179.4
57.5°	697.5	704.9	829.4	1037.6	1103.2
60°	634.7	636.5	766.3	976.6	1039.3
62.5°	562.7	565.9	701.4	904.6	988.6
65°	481.9	497.1	631.5	835.8	911.7
67.5°	406.4	433.0	560.3	772.7	812.4
70°	325.5	370.6	490.4	698.6	726.6
72.5°	251.4	304.2	418.8	615.6	654.9
75°	182.3	241.5	352.1	541.1	575.2
77.5°	122.7	183.0	289.7	458.9	503.9
80°	73.4	133.7	234.0	382.6	433.3
82.5°	37.6	89.7	181.6	320.9	366.3
85°	16.3	56.7	137.2	266.3	305.7
87.5°	4.6	32.3	101.1	215.2	248.6
90°	0.4	17.0	72.0	168.8	198.9
92.5°	0.4	8.2	50.7	127.7	150.7
95°	0.4	4.3	31.6	92.6	113.1
97.5°	0.4	2.5	19.1	65.6	83.0
100°	0.4	2.1	11.3	43.6	59.2
102.5°	0.4	2.5	7.8	27.7	38.7
105°	0.4	2.5	6.4	18.1	25.5
107.5°	0.7	2.5	5.7	13.5	17.7
110°	0.4	2.1	6.0	10.3	13.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.7	1.8	5.7	8.5	10.3
115°	0.4	1.4	5.0	8.2	8.5
117.5°	0.7	1.1	3.9	8.2	8.5
120°	0.7	0.7	3.2	7.8	8.9
122.5°	0.7	0.7	2.5	7.1	8.5
125°	0.4	0.7	2.1	5.3	7.4
127.5°	0.7	0.7	1.8	4.3	5.7
130°	0.7	0.7	1.4	3.2	4.3
132.5°	0.7	0.7	1.1	2.5	3.2
135°	0.7	0.7	0.7	1.8	2.5
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)