

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: P518004

Luminaire Tested: HVL8-2-LD4-3STD-40-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: P518004
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-3STD-40-UNV-C-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5559.0 lumens
Efficiency: N/A
Efficacy: 116.3 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

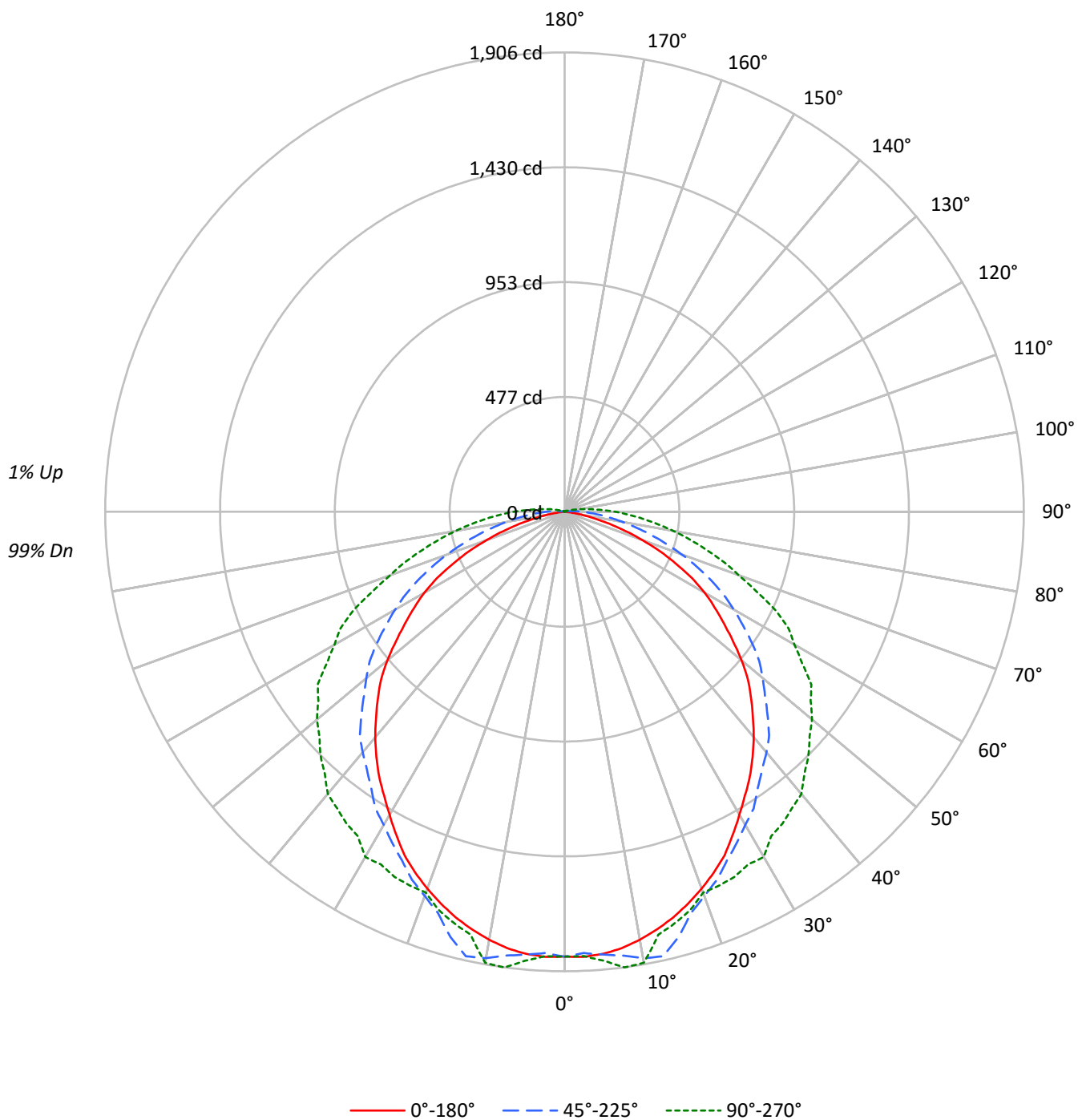
Input Watts (W): 47.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	14897	14897	14897
5°	14809	14637	14824
10°	14561	14798	14916
15°	14244	14362	13845
20°	13870	13420	13240
25°	13475	12806	13323
30°	12908	12306	13470
35°	12485	11831	13231
40°	12033	11466	13314
45°	11547	11005	13073
50°	10967	10522	12973
55°	10151	10006	12966
60°	9494	9313	12413
65°	8278	8494	12017
70°	6628	7448	10776
75°	4596	6194	9837
80°	2456	4935	8830
85°	821	3648	7779

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 13073 cd/sqm

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CATALOG NUMBER: HVL8-2-LD4-3STD-40-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	177.4	3.2
10°-20°	505.1	9.1
20°-30°	751.5	13.5
30°-40°	903.3	16.2
40°-50°	950.7	17.1
50°-60°	882.2	15.9
60°-70°	697.5	12.5
70°-80°	426.1	7.7
80°-90°	185.6	3.3
90°-100°	57.8	1.0
100°-110°	13.0	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°	1433.9	25.8
0°-40°	2337.1	42.0
0°-60°	4170.0	75.0
0°-90°	5479.3	98.6
90°-120°	76.0	1.4
90°-150°	79.7	1.4
90°-180°	80.0	1.4
0°-180°	5559.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1845	1845	1845	1845	1845	
5°	1841	1837	1843	1864	1869	174
15°	1742	1809	1827	1766	1768	491
25°	1572	1672	1596	1643	1670	722
35°	1341	1378	1399	1526	1578	838
45°	1096	1101	1191	1380	1431	845
55°	807	820	950	1158	1250	725
65°	511	527	670	886	966	506
75°	193	256	373	574	610	211
85°	17	60	146	282	324	27
90°	0	18	76	179	211	1
95°	0	4	34	98	120	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1845.3	1845.3	1845.3	1845.3	1845.3
2.5°	1847.5	1842.7	1832.5	1842.3	1844.9
5°	1840.8	1837.0	1843.4	1864.1	1869.3
7.5°	1825.4	1839.6	1856.6	1894.2	1906.2
10°	1802.4	1829.5	1880.2	1912.2	1899.8
12.5°	1774.6	1820.5	1888.5	1826.1	1797.2
15°	1742.3	1809.2	1826.9	1766.3	1767.5
17.5°	1704.3	1799.8	1745.3	1743.8	1732.9
20°	1663.4	1768.2	1696.1	1693.0	1681.4
22.5°	1619.4	1726.5	1652.4	1646.4	1678.0
25°	1571.6	1672.0	1595.7	1643.4	1670.1
27.5°	1511.9	1600.6	1548.3	1616.0	1649.4
30°	1451.3	1526.9	1499.8	1594.2	1653.6
32.5°	1394.6	1449.8	1460.0	1585.9	1595.7
35°	1340.8	1378.0	1398.7	1525.8	1577.6
37.5°	1281.8	1292.0	1346.8	1500.6	1550.6
40°	1221.7	1215.3	1303.2	1459.2	1528.4
42.5°	1157.0	1154.8	1257.0	1438.6	1473.1
45°	1095.7	1100.6	1191.2	1379.9	1431.4
47.5°	1033.0	1039.4	1128.8	1315.6	1379.5
50°	960.0	968.3	1073.2	1258.5	1340.8
52.5°	881.1	896.9	1019.1	1204.4	1287.5
55°	807.1	820.2	950.3	1158.1	1250.2
57.5°	739.4	747.3	879.2	1099.9	1169.4
60°	672.9	674.7	812.3	1035.2	1101.8
62.5°	596.6	599.9	743.5	958.9	1048.0
65°	510.8	527.0	669.5	886.0	966.4
67.5°	430.8	459.0	593.9	819.1	861.2
70°	345.1	392.8	519.9	740.5	770.2
72.5°	266.5	322.5	443.9	652.6	694.3
75°	193.2	256.0	373.3	573.6	609.7
77.5°	130.1	194.0	307.1	486.4	534.2
80°	77.8	141.7	248.1	405.6	459.3
82.5°	39.8	95.1	192.5	340.2	388.3
85°	17.3	60.1	145.5	282.3	324.0
87.5°	4.9	34.2	107.1	228.2	263.5
90°	0.4	18.0	76.3	178.9	210.9
92.5°	0.4	8.6	53.8	135.3	159.8
95°	0.4	4.5	33.5	98.1	119.9
97.5°	0.4	2.6	20.3	69.5	88.0
100°	0.4	2.3	12.0	46.2	62.8
102.5°	0.4	2.6	8.3	29.3	41.0
105°	0.4	2.6	6.8	19.2	27.1
107.5°	0.8	2.6	6.0	14.3	18.8
110°	0.4	2.3	6.4	10.9	14.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	1.9	6.0	9.0	10.9
115°	0.4	1.5	5.3	8.6	9.0
117.5°	0.8	1.1	4.1	8.6	9.0
120°	0.8	0.8	3.4	8.3	9.4
122.5°	0.8	0.8	2.6	7.5	9.0
125°	0.4	0.8	2.3	5.6	7.9
127.5°	0.8	0.8	1.9	4.5	6.0
130°	0.8	0.8	1.5	3.4	4.5
132.5°	0.8	0.8	1.1	2.6	3.4
135°	0.8	0.8	0.8	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)