

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: P518195

Luminaire Tested: HVL8-8-LD4-1STD-40-UNV-C-EDD-90

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: P518195
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-1STD-40-UNV-C-EDD-90
Description: 8 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7424.0 lumens
Efficiency: N/A
Efficacy: 113.9 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 8' x H: 0.17')
CIE Type: Direct

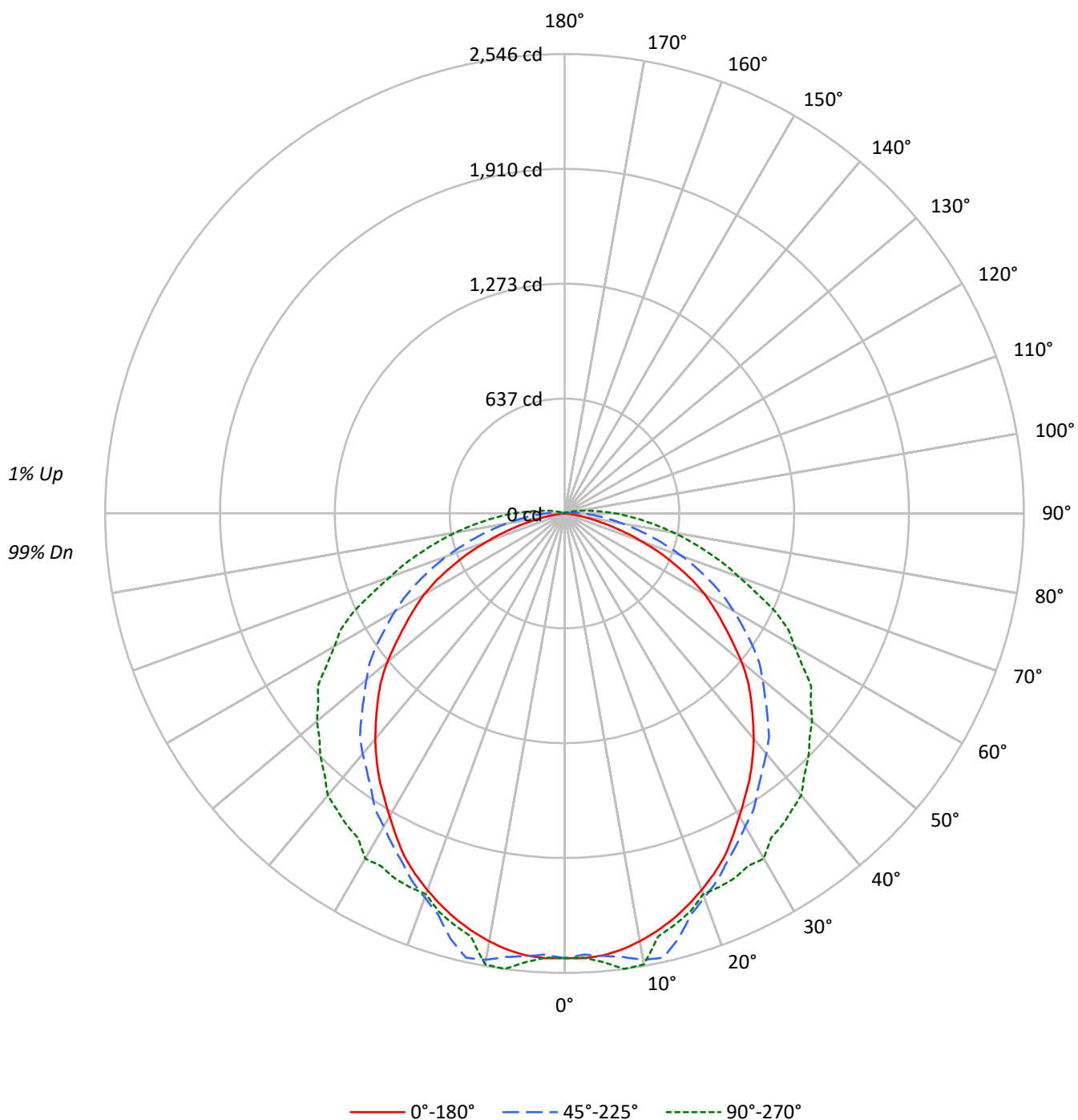
Input Watts (W): 65.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	4974	4974	4974
5°	4971	4905	4949
10°	4915	4978	4980
15°	4835	4849	4622
20°	4735	4548	4420
25°	4629	4356	4448
30°	4463	4203	4497
35°	4348	4058	4418
40°	4225	3951	4445
45°	4092	3811	4365
50°	3928	3664	4332
55°	3683	3506	4329
60°	3501	3288	4144
65°	3119	3027	4012
70°	2572	2684	3598
75°	1867	2267	3285
80°	1080	1846	2949
85°	432	1411	2597

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 4365 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	236.9	3.2
10°-20°	674.5	9.1
20°-30°	1003.6	13.5
30°-40°	1206.3	16.2
40°-50°	1269.7	17.1
50°-60°	1178.1	15.9
60°-70°	931.5	12.5
70°-80°	569.0	7.7
80°-90°	247.9	3.3
90°-100°	77.2	1.0
100°-110°	17.3	0.2
110°-120°	7.0	0.1
120°-130°	3.9	0.1
130°-140°	1.1	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°	1914.9	25.8
0°-40°	3121.2	42.0
0°-60°	5569.1	75.0
0°-90°	7317.6	98.6
90°-120°	101.5	1.4
90°-150°	106.4	1.4
90°-180°	106.0	1.4
0°-180°	7424.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2464	2464	2464	2464	2464	
5°	2458	2453	2462	2490	2496	233
15°	2327	2416	2440	2359	2360	655
25°	2099	2233	2131	2195	2230	964
35°	1791	1840	1868	2038	2107	1119
45°	1463	1470	1591	1843	1912	1128
55°	1078	1095	1269	1547	1670	968
65°	682	704	894	1183	1291	676
75°	258	342	498	766	814	282
85°	23	80	194	377	433	36
90°	0	24	102	239	282	1
95°	0	6	45	131	160	0
105°	0	4	9	26	36	1
115°	0	2	7	12	12	1
125°	0	1	3	8	10	1
135°	1	1	1	2	4	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

TEST NUMBER: P518195

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2464.4	2464.4	2464.4	2464.4	2464.4
2.5°	2467.4	2460.9	2447.3	2460.3	2463.9
5°	2458.3	2453.3	2461.9	2489.5	2496.5
7.5°	2437.8	2456.8	2479.4	2529.6	2545.7
10°	2407.1	2443.3	2511.1	2553.7	2537.2
12.5°	2370.0	2431.2	2522.1	2438.8	2400.1
15°	2326.8	2416.2	2439.8	2358.9	2360.4
17.5°	2276.1	2403.6	2330.8	2328.8	2314.3
20°	2221.4	2361.5	2265.1	2261.1	2245.5
22.5°	2162.7	2305.7	2206.8	2198.8	2241.0
25°	2098.9	2232.9	2131.0	2194.8	2230.4
27.5°	2019.1	2137.6	2067.8	2158.1	2202.8
30°	1938.3	2039.2	2003.0	2129.0	2208.3
32.5°	1862.5	1936.3	1949.8	2118.0	2131.0
35°	1790.7	1840.4	1868.0	2037.7	2106.9
37.5°	1711.9	1725.4	1798.7	2004.0	2070.8
40°	1631.5	1623.0	1740.5	1948.8	2041.2
42.5°	1545.2	1542.2	1678.7	1921.2	1967.4
45°	1463.4	1469.9	1590.9	1842.9	1911.7
47.5°	1379.5	1388.1	1507.5	1757.0	1842.4
50°	1282.1	1293.2	1433.2	1680.7	1790.7
52.5°	1176.7	1197.8	1360.9	1608.4	1719.4
55°	1077.8	1095.4	1269.1	1546.7	1669.7
57.5°	987.5	998.0	1174.2	1468.9	1561.8
60°	898.6	901.1	1084.8	1382.5	1471.4
62.5°	796.7	801.2	993.0	1280.6	1399.6
65°	682.2	703.8	894.1	1183.2	1290.7
67.5°	575.3	613.0	793.2	1093.9	1150.1
70°	460.8	524.6	694.3	989.0	1028.6
72.5°	355.9	430.7	592.9	871.5	927.2
75°	258.0	341.9	498.5	766.1	814.3
77.5°	173.7	259.0	410.1	649.6	713.4
80°	103.9	189.3	331.3	541.7	613.5
82.5°	53.2	127.0	257.0	454.3	518.6
85°	23.1	80.3	194.3	377.0	432.7
87.5°	6.5	45.7	143.1	304.7	351.9
90°	0.5	24.1	101.9	239.0	281.6
92.5°	0.5	11.5	71.8	180.7	213.4
95°	0.5	6.0	44.7	131.0	160.1
97.5°	0.5	3.5	27.1	92.9	117.5
100°	0.5	3.0	16.1	61.7	83.8
102.5°	0.5	3.5	11.0	39.2	54.7
105°	0.5	3.5	9.0	25.6	36.1
107.5°	1.0	3.5	8.0	19.1	25.1
110°	0.5	3.0	8.5	14.6	19.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	2.5	8.0	12.0	14.6
115°	0.5	2.0	7.0	11.5	12.0
117.5°	1.0	1.5	5.5	11.5	12.0
120°	1.0	1.0	4.5	11.0	12.6
122.5°	1.0	1.0	3.5	10.0	12.0
125°	0.5	1.0	3.0	7.5	10.5
127.5°	1.0	1.0	2.5	6.0	8.0
130°	1.0	1.0	2.0	4.5	6.0
132.5°	1.0	1.0	1.5	3.5	4.5
135°	1.0	1.0	1.0	2.5	3.5
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)