

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: P518239

Luminaire Tested: HVL8-8-LD4-2STD-35-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: P518239
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-2STD-35-UNV-C-EDD-90
Description: 8 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13960.0 lumens
Efficiency: N/A
Efficacy: 106.8 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

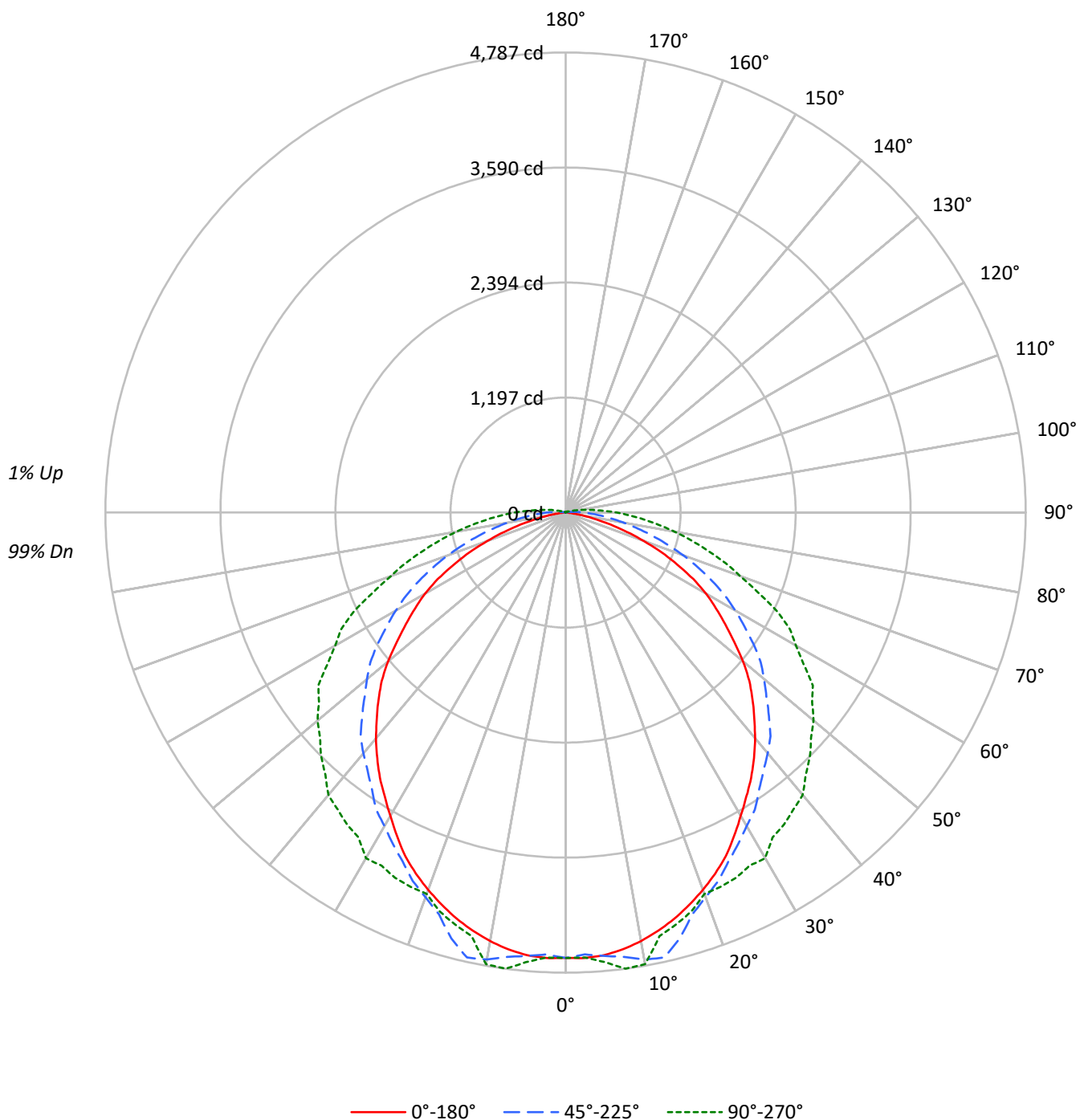
Input Watts (W): 130.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	9352	9352	9352
5°	9348	9224	9307
10°	9242	9361	9364
15°	9091	9118	8692
20°	8904	8552	8312
25°	8704	8192	8364
30°	8393	7904	8456
35°	8177	7631	8307
40°	7944	7429	8358
45°	7694	7166	8207
50°	7386	6889	8145
55°	6925	6593	8141
60°	6583	6183	7793
65°	5864	5691	7545
70°	4837	5047	6766
75°	3511	4263	6176
80°	2031	3471	5544
85°	812	2652	4884

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 8207 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	445.4	3.2
10°-20°	1268.3	9.1
20°-30°	1887.1	13.5
30°-40°	2268.3	16.2
40°-50°	2387.5	17.1
50°-60°	2215.4	15.9
60°-70°	1751.6	12.5
70°-80°	1069.9	7.7
80°-90°	466.2	3.3
90°-100°	145.1	1.0
100°-110°	32.6	0.2
110°-120°	13.1	0.1
120°-130°	7.4	0.1
130°-140°	2.0	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°	3600.8	25.8
0°-40°	5869.1	42.0
0°-60°	10472.0	75.0
0°-90°	13759.8	98.6
90°-120°	190.8	1.4
90°-150°	200.2	1.4
90°-180°	200.0	1.4
0°-180°	13960.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4634	4634	4634	4634	4634	
5°	4623	4613	4629	4681	4694	438
15°	4375	4543	4588	4436	4439	1233
25°	3947	4199	4007	4127	4194	1812
35°	3367	3461	3512	3832	3962	2104
45°	2752	2764	2991	3465	3595	2121
55°	2027	2060	2386	2908	3140	1821
65°	1283	1323	1681	2225	2427	1271
75°	485	643	937	1440	1531	530
85°	43	151	365	709	814	67
90°	1	45	192	449	530	2
95°	1	11	84	246	301	1
105°	1	7	17	48	68	1
115°	1	4	13	22	23	2
125°	1	2	6	14	20	1
135°	2	2	2	5	7	1
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°	4634.0	4634.0	4634.0	4634.0	4634.0
2.5°	4639.6	4627.4	4601.9	4626.4	4633.0
5°	4622.6	4613.2	4629.2	4681.2	4694.4
7.5°	4583.9	4619.8	4662.3	4756.7	4786.9
10°	4526.3	4594.3	4721.8	4802.0	4770.8
12.5°	4456.5	4571.7	4742.5	4585.8	4513.1
15°	4375.3	4543.3	4587.7	4435.7	4438.6
17.5°	4280.0	4519.7	4382.9	4379.1	4351.7
20°	4177.1	4440.4	4259.2	4251.7	4222.4
22.5°	4066.6	4335.7	4149.7	4134.6	4213.9
25°	3946.7	4198.8	4007.2	4127.0	4194.1
27.5°	3796.7	4019.4	3888.2	4058.1	4142.2
30°	3644.7	3834.4	3766.5	4003.4	4152.5
32.5°	3502.1	3640.9	3666.4	3982.6	4007.2
35°	3367.1	3460.6	3512.5	3831.6	3961.9
37.5°	3218.9	3244.4	3382.3	3768.3	3893.9
40°	3067.9	3051.9	3272.8	3664.5	3838.2
42.5°	2905.5	2899.9	3156.6	3612.6	3699.4
45°	2751.7	2764.0	2991.4	3465.3	3594.6
47.5°	2594.0	2610.1	2834.7	3303.9	3464.4
50°	2410.9	2431.7	2695.0	3160.4	3367.1
52.5°	2212.7	2252.3	2559.1	3024.5	3233.1
55°	2026.7	2059.7	2386.4	2908.4	3139.7
57.5°	1856.8	1876.6	2208.0	2762.1	2936.7
60°	1689.7	1694.4	2039.9	2599.7	2766.8
62.5°	1498.1	1506.6	1867.2	2408.1	2631.8
65°	1282.9	1323.4	1681.2	2224.9	2427.0
67.5°	1081.8	1152.6	1491.5	2056.9	2162.6
70°	866.6	986.5	1305.5	1859.6	1934.2
72.5°	669.3	809.9	1114.8	1638.7	1743.5
75°	485.2	642.8	937.4	1440.5	1531.1
77.5°	326.6	487.1	771.2	1221.5	1341.4
80°	195.4	355.9	623.0	1018.5	1153.5
82.5°	100.1	238.8	483.3	854.3	975.1
85°	43.4	151.0	365.3	708.9	813.7
87.5°	12.3	85.9	269.0	573.0	661.7
90°	0.9	45.3	191.6	449.3	529.6
92.5°	0.9	21.7	135.0	339.8	401.2
95°	0.9	11.3	84.0	246.4	301.1
97.5°	0.9	6.6	51.0	174.6	220.9
100°	0.9	5.7	30.2	116.1	157.6
102.5°	0.9	6.6	20.8	73.6	102.9
105°	0.9	6.6	17.0	48.1	68.0
107.5°	1.9	6.6	15.1	35.9	47.2
110°	0.9	5.7	16.0	27.4	36.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.9	4.7	15.1	22.7	27.4
115°	0.9	3.8	13.2	21.7	22.7
117.5°	1.9	2.8	10.4	21.7	22.7
120°	1.9	1.9	8.5	20.8	23.6
122.5°	1.9	1.9	6.6	18.9	22.7
125°	0.9	1.9	5.7	14.2	19.8
127.5°	1.9	1.9	4.7	11.3	15.1
130°	1.9	1.9	3.8	8.5	11.3
132.5°	1.9	1.9	2.8	6.6	8.5
135°	1.9	1.9	1.9	4.7	6.6
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)