

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: P517667

Luminaire Tested: HVL12-8-LD4-2STD-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: P517667
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-2STD-40-UNV-C-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14720.0 lumens
Efficiency: N/A
Efficacy: 109.6 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 8' x H: 0.17')
CIE Type: Direct

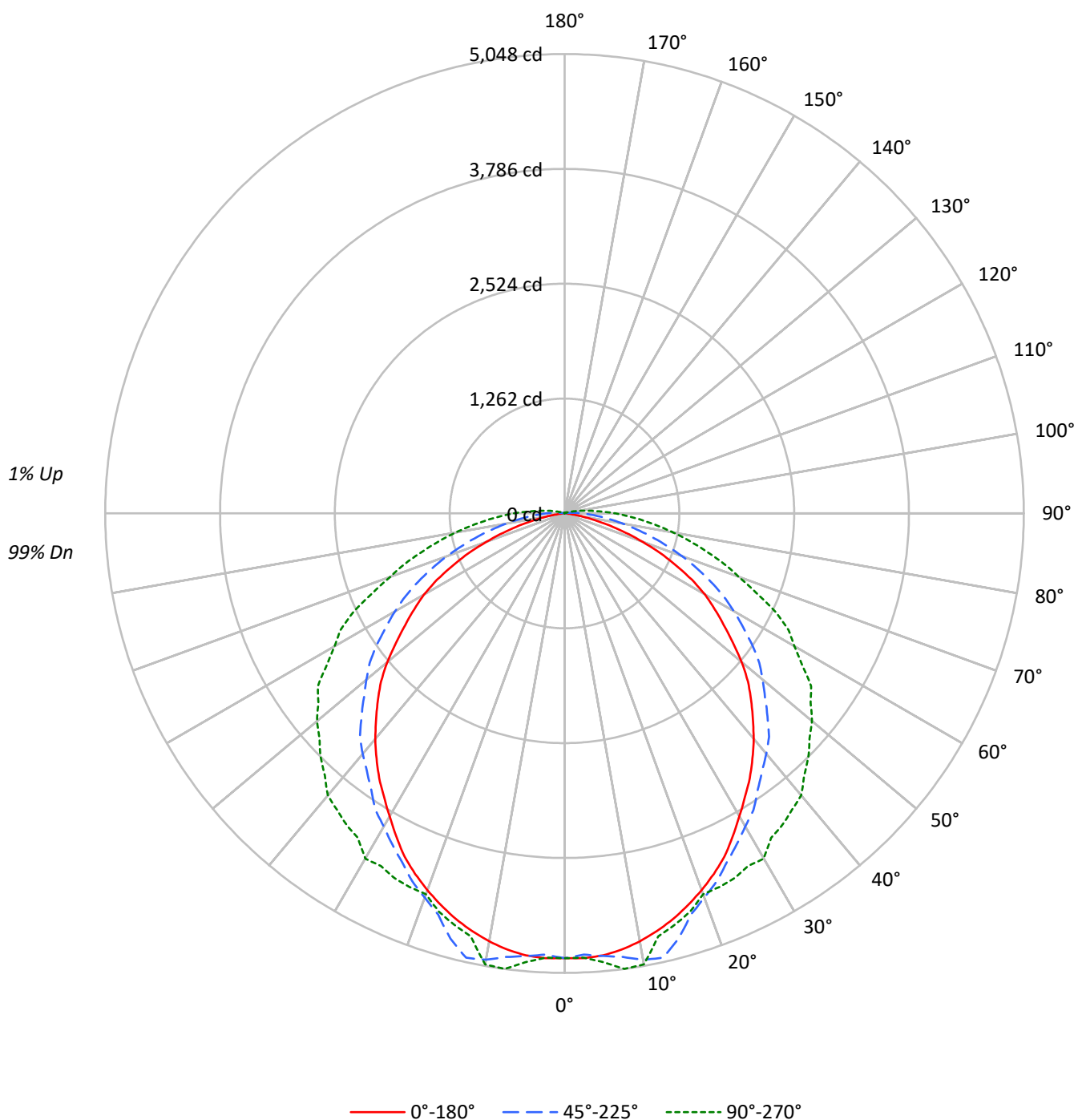
Input Watts (W): 134.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	6574	6574	6574
5°	6571	6517	6589
10°	6497	6647	6677
15°	6391	6507	6241
20°	6259	6134	6010
25°	6119	5908	6092
30°	5900	5731	6206
35°	5748	5567	6144
40°	5584	5454	6236
45°	5408	5299	6182
50°	5192	5137	6200
55°	4868	4963	6273
60°	4628	4707	6092
65°	4122	4394	6002
70°	3400	3969	5503
75°	2468	3437	5174
80°	1427	2905	4844
85°	571	2364	4559

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 6273 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	469.6	3.2
10°-20°	1337.4	9.1
20°-30°	1989.9	13.5
30°-40°	2391.8	16.2
40°-50°	2517.5	17.1
50°-60°	2336.0	15.9
60°-70°	1847.0	12.5
70°-80°	1128.2	7.7
80°-90°	491.5	3.3
90°-100°	153.0	1.0
100°-110°	34.4	0.2
110°-120°	13.8	0.1
120°-130°	7.8	0.1
130°-140°	2.1	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°	3796.9	25.8
0°-40°	6188.7	42.0
0°-60°	11042.2	75.0
0°-90°	14508.9	98.6
90°-120°	201.2	1.4
90°-150°	211.1	1.4
90°-180°	211.0	1.4
0°-180°	14720.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4886	4886	4886	4886	4886	
5°	4874	4864	4881	4936	4950	462
15°	4614	4791	4838	4677	4680	1300
25°	4162	4427	4225	4352	4422	1911
35°	3550	3649	3704	4040	4178	2219
45°	2902	2914	3154	3654	3790	2237
55°	2137	2172	2516	3067	3311	1920
65°	1353	1396	1773	2346	2559	1340
75°	512	678	988	1519	1614	558
85°	46	159	385	748	858	71
90°	1	48	202	474	558	2
95°	1	12	89	260	318	1
105°	1	7	18	51	72	1
115°	1	4	14	23	24	2
125°	1	2	6	15	21	2
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°	4886.2	4886.2	4886.2	4886.2	4886.2
2.5°	4892.2	4879.3	4852.4	4878.3	4885.2
5°	4874.3	4864.3	4881.3	4936.0	4949.9
7.5°	4833.5	4871.3	4916.1	5015.6	5047.5
10°	4772.8	4844.4	4978.8	5063.4	5030.6
12.5°	4699.1	4820.5	5000.7	4835.5	4758.8
15°	4613.5	4790.7	4837.5	4677.2	4680.2
17.5°	4513.0	4765.8	4621.5	4617.5	4588.6
20°	4404.5	4682.2	4491.1	4483.1	4452.3
22.5°	4288.0	4571.7	4375.6	4359.7	4443.3
25°	4161.6	4427.4	4225.3	4351.7	4422.4
27.5°	4003.4	4238.3	4099.9	4279.1	4367.7
30°	3843.1	4043.2	3971.5	4221.3	4378.6
32.5°	3692.8	3839.1	3866.0	4199.4	4225.3
35°	3550.5	3649.0	3703.7	4040.2	4177.5
37.5°	3394.2	3421.1	3566.4	3973.5	4105.9
40°	3234.9	3218.0	3450.9	3864.0	4047.1
42.5°	3063.7	3057.8	3328.5	3809.3	3900.8
45°	2901.5	2914.4	3154.3	3654.0	3790.3
47.5°	2735.3	2752.2	2989.1	3483.8	3653.0
50°	2542.2	2564.1	2841.8	3332.5	3550.5
52.5°	2333.1	2374.9	2698.4	3189.1	3409.1
55°	2137.0	2171.9	2516.3	3066.7	3310.6
57.5°	1957.9	1978.8	2328.2	2912.4	3096.6
60°	1781.7	1786.7	2151.0	2741.2	2917.4
62.5°	1579.6	1588.6	1968.8	2539.2	2775.1
65°	1352.7	1395.5	1772.7	2346.1	2559.1
67.5°	1140.7	1215.3	1572.7	2168.9	2280.4
70°	913.7	1040.2	1376.6	1960.9	2039.5
72.5°	705.7	854.0	1175.5	1728.0	1838.4
75°	511.6	677.8	988.4	1518.9	1614.5
77.5°	344.4	513.6	813.2	1288.0	1414.4
80°	206.0	375.3	656.9	1074.0	1216.3
82.5°	105.5	251.8	509.6	900.8	1028.2
85°	45.8	159.3	385.2	747.5	858.0
87.5°	12.9	90.6	283.7	604.2	697.7
90°	1.0	47.8	202.1	473.8	558.4
92.5°	1.0	22.9	142.3	358.3	423.0
95°	1.0	11.9	88.6	259.8	317.5
97.5°	1.0	7.0	53.7	184.1	232.9
100°	1.0	6.0	31.9	122.4	166.2
102.5°	1.0	7.0	21.9	77.6	108.5
105°	1.0	7.0	17.9	50.8	71.7
107.5°	2.0	7.0	15.9	37.8	49.8
110°	1.0	6.0	16.9	28.9	38.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.0	5.0	15.9	23.9	28.9
115°	1.0	4.0	13.9	22.9	23.9
117.5°	2.0	3.0	10.9	22.9	23.9
120°	2.0	2.0	9.0	21.9	24.9
122.5°	2.0	2.0	7.0	19.9	23.9
125°	1.0	2.0	6.0	14.9	20.9
127.5°	2.0	2.0	5.0	11.9	15.9
130°	2.0	2.0	4.0	9.0	11.9
132.5°	2.0	2.0	3.0	7.0	9.0
135°	2.0	2.0	2.0	5.0	7.0
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)