

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: P517947

Luminaire Tested: HVL8-2-LD4-2STD-30-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: P517947
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-2STD-30-UNV-C-EDD-90
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2882.0 lumens
Efficiency: N/A
Efficacy: 88.1 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

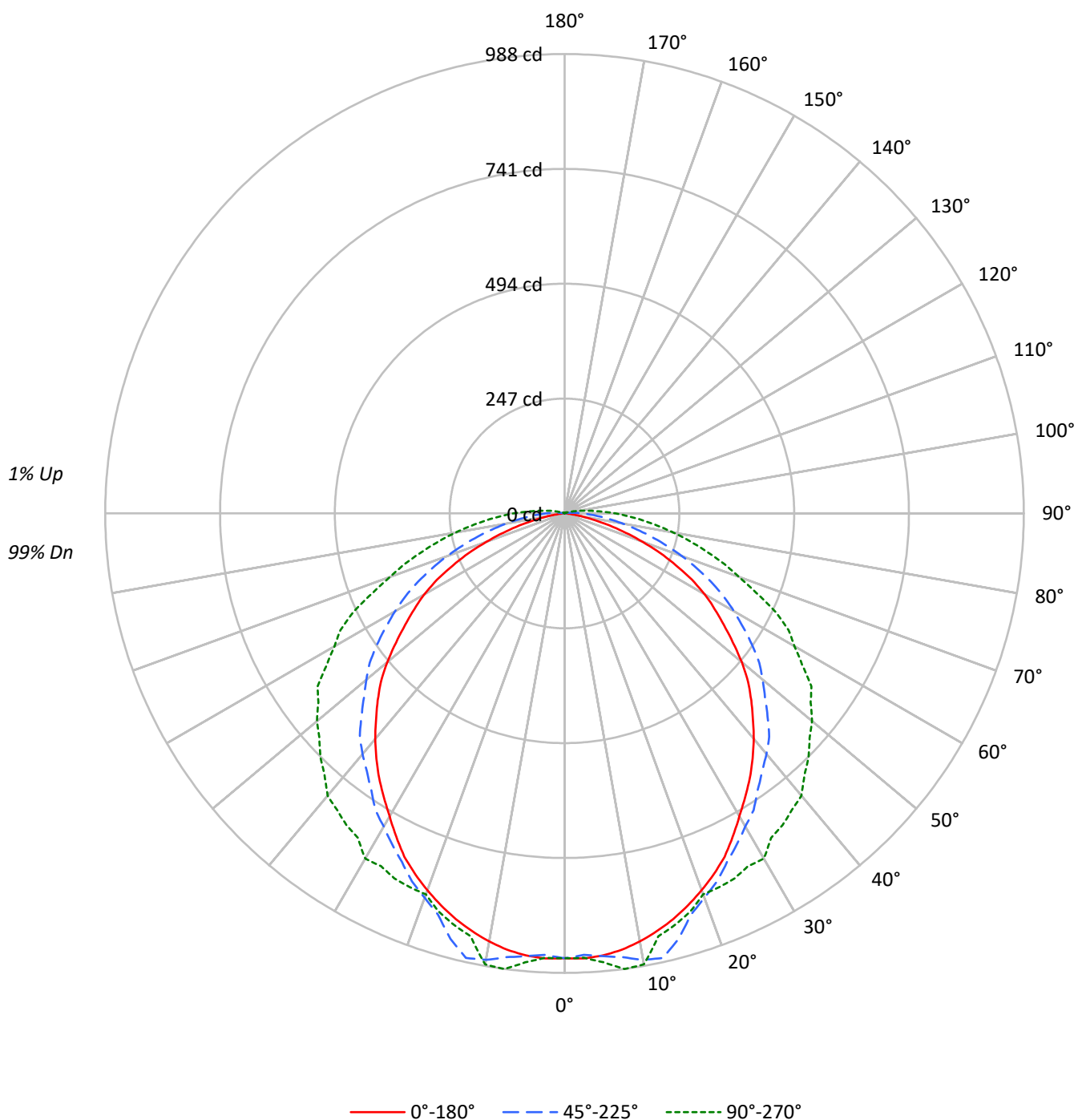
Input Watts (W): 32.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	7723	7723	7723
5°	7677	7588	7685
10°	7550	7672	7733
15°	7385	7445	7177
20°	7190	6957	6864
25°	6986	6639	6908
30°	6692	6380	6983
35°	6473	6134	6860
40°	6239	5944	6902
45°	5987	5706	6778
50°	5686	5455	6726
55°	5262	5188	6723
60°	4921	4828	6435
65°	4291	4404	6230
70°	3436	3861	5587
75°	2384	3211	5100
80°	1272	2558	4578
85°	427	1890	4033

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 6778 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	91.9	3.2
10°-20°	261.8	9.1
20°-30°	389.6	13.5
30°-40°	468.3	16.2
40°-50°	492.9	17.1
50°-60°	457.4	15.9
60°-70°	361.6	12.5
70°-80°	220.9	7.7
80°-90°	96.2	3.3
90°-100°	30.0	1.0
100°-110°	6.7	0.2
110°-120°	2.7	0.1
120°-130°	1.5	0.1
130°-140°	0.4	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°	743.4	25.8
0°-40°	1211.7	42.0
0°-60°	2161.9	75.0
0°-90°	2840.6	98.6
90°-120°	39.4	1.4
90°-150°	41.4	1.4
90°-180°	41.0	1.4
0°-180°	2882.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	957	957	957	957	957	
5°	954	952	956	966	969	90
15°	903	938	947	916	916	254
25°	815	867	827	852	866	374
35°	695	714	725	791	818	434
45°	568	571	618	715	742	438
55°	418	425	493	600	648	376
65°	265	273	347	459	501	262
75°	100	133	194	297	316	109
85°	9	31	75	146	168	14
90°	0	9	40	93	109	0
95°	0	2	17	51	62	0
105°	0	1	4	10	14	0
115°	0	1	3	4	5	0
125°	0	0	1	3	4	0
135°	0	0	0	1	1	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°	956.7	956.7	956.7	956.7	956.7
2.5°	957.8	955.3	950.0	955.1	956.5
5°	954.3	952.4	955.7	966.4	969.1
7.5°	946.3	953.7	962.5	982.0	988.2
10°	934.5	948.5	974.8	991.4	984.9
12.5°	920.0	943.8	979.1	946.7	931.7
15°	903.3	938.0	947.1	915.7	916.3
17.5°	883.6	933.1	904.8	904.0	898.4
20°	862.3	916.7	879.3	877.7	871.7
22.5°	839.5	895.1	856.7	853.6	869.9
25°	814.8	866.8	827.3	852.0	865.9
27.5°	783.8	829.8	802.7	837.8	855.1
30°	752.4	791.6	777.6	826.5	857.3
32.5°	723.0	751.7	756.9	822.2	827.3
35°	695.1	714.4	725.1	791.0	817.9
37.5°	664.5	669.8	698.3	778.0	803.9
40°	633.4	630.0	675.6	756.5	792.4
42.5°	599.8	598.7	651.7	745.8	763.7
45°	568.1	570.6	617.6	715.4	742.1
47.5°	535.5	538.8	585.2	682.1	715.2
50°	497.7	502.0	556.4	652.5	695.1
52.5°	456.8	465.0	528.3	624.4	667.5
55°	418.4	425.2	492.7	600.4	648.2
57.5°	383.3	387.4	455.8	570.2	606.3
60°	348.8	349.8	421.1	536.7	571.2
62.5°	309.3	311.0	385.5	497.1	543.3
65°	264.8	273.2	347.1	459.3	501.0
67.5°	223.3	237.9	307.9	424.6	446.5
70°	178.9	203.6	269.5	383.9	399.3
72.5°	138.2	167.2	230.2	338.3	359.9
75°	100.2	132.7	193.5	297.4	316.1
77.5°	67.4	100.6	159.2	252.2	276.9
80°	40.3	73.5	128.6	210.3	238.1
82.5°	20.7	49.3	99.8	176.4	201.3
85°	9.0	31.2	75.4	146.4	168.0
87.5°	2.5	17.7	55.5	118.3	136.6
90°	0.2	9.4	39.6	92.8	109.3
92.5°	0.2	4.5	27.9	70.2	82.8
95°	0.2	2.3	17.3	50.9	62.2
97.5°	0.2	1.4	10.5	36.1	45.6
100°	0.2	1.2	6.2	24.0	32.5
102.5°	0.2	1.4	4.3	15.2	21.2
105°	0.2	1.4	3.5	9.9	14.0
107.5°	0.4	1.4	3.1	7.4	9.7
110°	0.2	1.2	3.3	5.7	7.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	1.0	3.1	4.7	5.7
115°	0.2	0.8	2.7	4.5	4.7
117.5°	0.4	0.6	2.1	4.5	4.7
120°	0.4	0.4	1.8	4.3	4.9
122.5°	0.4	0.4	1.4	3.9	4.7
125°	0.2	0.4	1.2	2.9	4.1
127.5°	0.4	0.4	1.0	2.3	3.1
130°	0.4	0.4	0.8	1.8	2.3
132.5°	0.4	0.4	0.6	1.4	1.8
135°	0.4	0.4	0.4	1.0	1.4
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)