

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: P517819

Luminaire Tested: HVL8-1-LD4-3HI-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: P517819
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3HI-30-UNV-C-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2924.0 lumens
Efficiency: N/A
Efficacy: 92.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

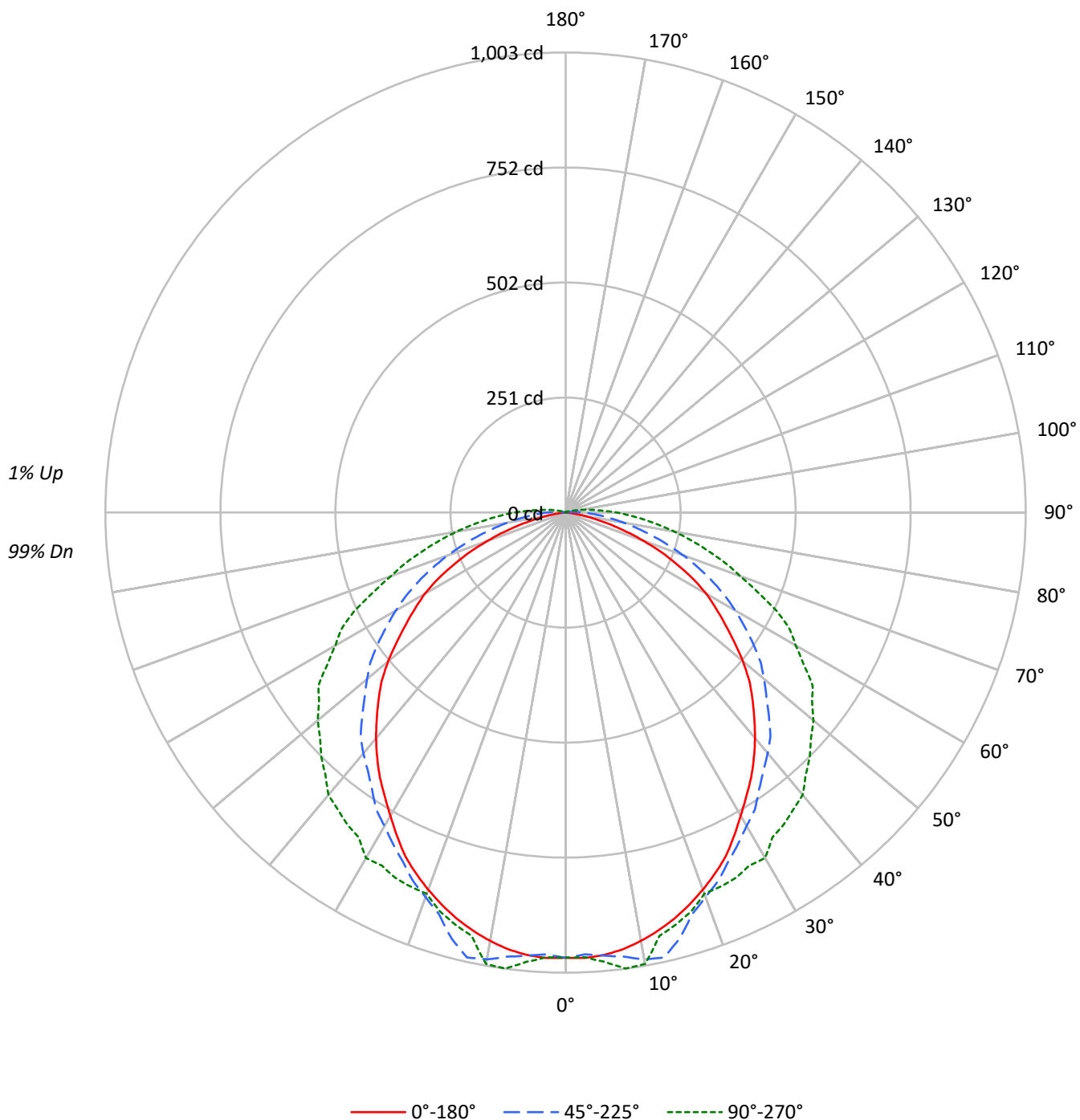
Input Watts (W): 31.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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				0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		0
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		99
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		81
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		67
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		56
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		47
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		41
6	69	55	46	40	67	54	46	39	52	45	39		50	44	38		36
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		32
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		28
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		25
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	15671	15671	15671
5°	15467	15320	15596
10°	15100	15414	15692
15°	14663	14886	14565
20°	14173	13843	13928
25°	13665	13146	14016
30°	12983	12569	14171
35°	12449	12021	13919
40°	11882	11584	14005
45°	11281	11051	13753
50°	10582	10494	13649
55°	9652	9902	13640
60°	8868	9135	13058
65°	7562	8243	12641
70°	5877	7132	11336
75°	3907	5832	10349
80°	1955	4542	9290
85°	580	3244	8182

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 13753 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	93.3	3.2
10°-20°	265.7	9.1
20°-30°	395.3	13.5
30°-40°	475.1	16.2
40°-50°	500.1	17.1
50°-60°	464.0	15.9
60°-70°	366.9	12.5
70°-80°	224.1	7.7
80°-90°	97.6	3.3
90°-100°	30.4	1.0
100°-110°	6.8	0.2
110°-120°	2.7	0.1
120°-130°	1.6	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°	754.2	25.8
0°-40°	1229.3	42.0
0°-60°	2193.4	75.0
0°-90°	2882.0	98.6
90°-120°	40.0	1.4
90°-150°	41.9	1.4
90°-180°	42.0	1.4
0°-180°	2924.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	971	971	971	971	971	
5°	968	966	970	980	983	92
15°	916	952	961	929	930	258
25°	827	880	839	864	878	380
35°	705	725	736	802	830	441
45°	576	579	627	726	753	444
55°	424	431	500	609	658	381
65°	269	277	352	466	508	266
75°	102	135	196	302	321	111
85°	9	32	76	148	170	14
90°	0	10	40	94	111	0
95°	0	2	18	52	63	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°	970.6	970.6	970.6	970.6	970.6
2.5°	971.8	969.2	963.9	969.0	970.4
5°	968.2	966.3	969.6	980.5	983.3
7.5°	960.1	967.6	976.5	996.3	1002.6
10°	948.1	962.3	989.0	1005.8	999.3
12.5°	933.4	957.6	993.3	960.5	945.3
15°	916.4	951.6	960.9	929.1	929.7
17.5°	896.5	946.7	918.0	917.2	911.5
20°	874.9	930.1	892.1	890.5	884.4
22.5°	851.8	908.1	869.2	866.0	882.6
25°	826.7	879.5	839.3	864.4	878.5
27.5°	795.2	841.9	814.4	850.0	867.6
30°	763.4	803.1	788.9	838.5	869.8
32.5°	733.5	762.6	767.9	834.2	839.3
35°	705.3	724.8	735.7	802.5	829.8
37.5°	674.2	679.6	708.4	789.3	815.6
40°	642.6	639.2	685.5	767.6	803.9
42.5°	608.6	607.4	661.2	756.7	774.9
45°	576.4	578.9	626.6	725.8	752.9
47.5°	543.3	546.7	593.8	692.0	725.6
50°	505.0	509.3	564.5	662.0	705.3
52.5°	463.5	471.8	536.0	633.5	677.2
55°	424.5	431.4	499.8	609.2	657.6
57.5°	388.9	393.1	462.5	578.5	615.1
60°	353.9	354.9	427.3	544.5	579.5
62.5°	313.8	315.6	391.1	504.4	551.2
65°	268.7	277.2	352.1	466.0	508.3
67.5°	226.6	241.4	312.4	430.8	453.0
70°	181.5	206.6	273.4	389.5	405.1
72.5°	140.2	169.6	233.5	343.2	365.2
75°	101.6	134.6	196.3	301.7	320.7
77.5°	68.4	102.0	161.5	255.9	281.0
80°	40.9	74.5	130.5	213.3	241.6
82.5°	21.0	50.0	101.2	178.9	204.2
85°	9.1	31.6	76.5	148.5	170.4
87.5°	2.6	18.0	56.4	120.0	138.6
90°	0.2	9.5	40.1	94.1	110.9
92.5°	0.2	4.5	28.3	71.2	84.0
95°	0.2	2.4	17.6	51.6	63.1
97.5°	0.2	1.4	10.7	36.6	46.3
100°	0.2	1.2	6.3	24.3	33.0
102.5°	0.2	1.4	4.3	15.4	21.6
105°	0.2	1.4	3.6	10.1	14.2
107.5°	0.4	1.4	3.2	7.5	9.9
110°	0.2	1.2	3.4	5.7	7.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	1.0	3.2	4.7	5.7
115°	0.2	0.8	2.8	4.5	4.7
117.5°	0.4	0.6	2.2	4.5	4.7
120°	0.4	0.4	1.8	4.3	4.9
122.5°	0.4	0.4	1.4	4.0	4.7
125°	0.2	0.4	1.2	3.0	4.2
127.5°	0.4	0.4	1.0	2.4	3.2
130°	0.4	0.4	0.8	1.8	2.4
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)