

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: P517883

Luminaire Tested: HVL8-2-LD4-1LO-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: P517883
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-1LO-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: 1178.0 lumens
Efficiency: N/A
Efficacy: 102.4 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

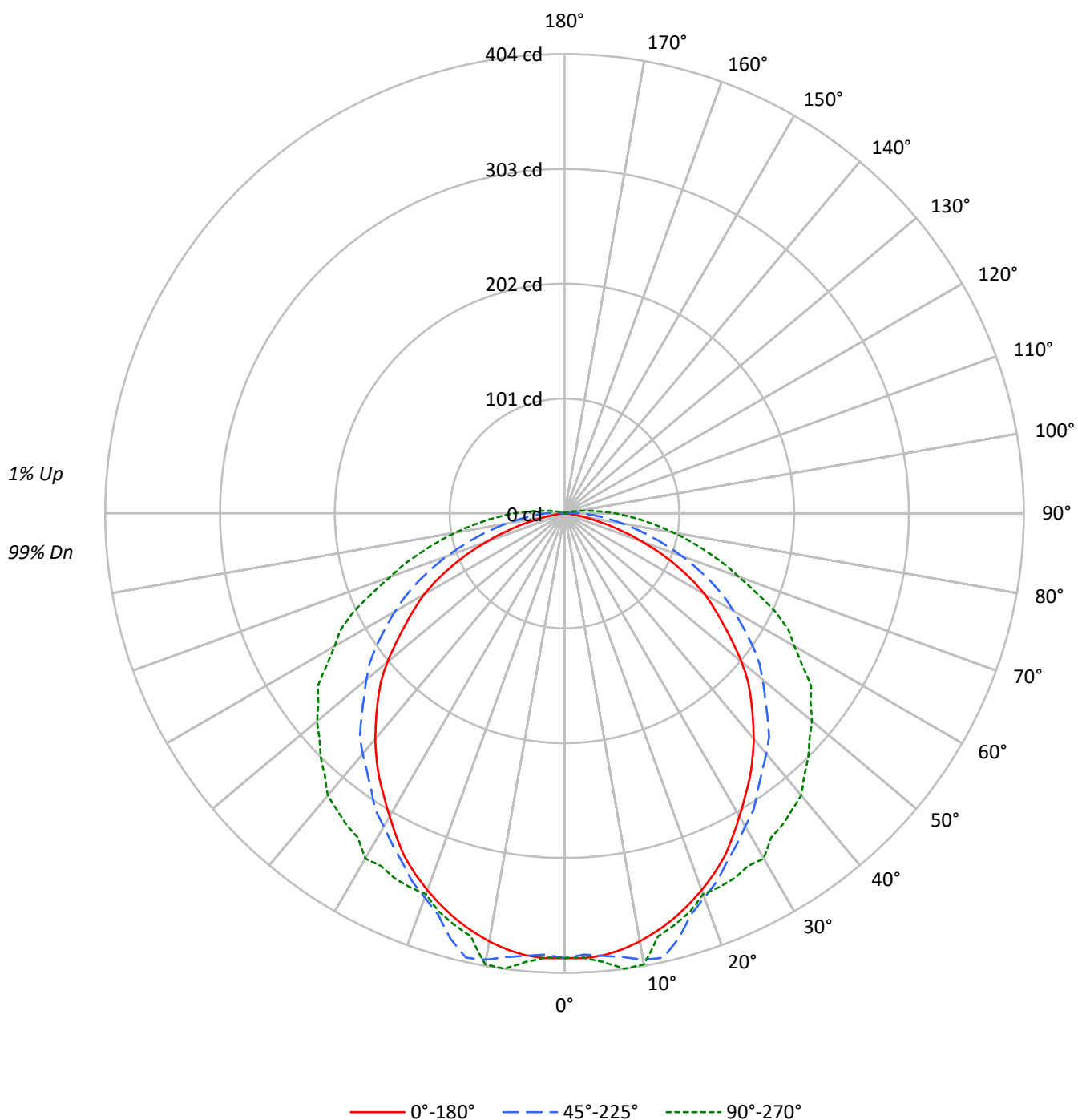
Input Watts (W): 11.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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				10
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		87
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		60
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		54
6	69	55	46	39	67	54	46	39	52	44	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	34	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3157	3157	3157
5°	3138	3101	3141
10°	3086	3136	3161
15°	3018	3043	2933
20°	2939	2844	2806
25°	2855	2713	2823
30°	2736	2608	2854
35°	2645	2507	2804
40°	2550	2430	2821
45°	2447	2332	2770
50°	2324	2230	2749
55°	2151	2121	2747
60°	2012	1973	2631
65°	1755	1800	2547
70°	1404	1579	2283
75°	973	1312	2085
80°	521	1046	1871
85°	176	772	1649

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 2770 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.6	3.2
10°-20°	107.0	9.1
20°-30°	159.2	13.5
30°-40°	191.4	16.2
40°-50°	201.5	17.1
50°-60°	186.9	15.9
60°-70°	147.8	12.5
70°-80°	90.3	7.7
80°-90°	39.3	3.3
90°-100°	12.3	1.0
100°-110°	2.8	0.2
110°-120°	1.1	0.1
120°-130°	0.6	0.1
130°-140°	0.2	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°	303.9	25.8
0°-40°	495.3	42.0
0°-60°	883.7	75.0
0°-90°	1161.1	98.6
90°-120°	16.1	1.4
90°-150°	16.9	1.4
90°-180°	17.0	1.4
0°-180°	1178.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	391	391	391	391	391	
5°	390	389	391	395	396	37
15°	369	383	387	374	374	104
25°	333	354	338	348	354	153
35°	284	292	296	323	334	178
45°	232	233	252	292	303	179
55°	171	174	201	245	265	154
65°	108	112	142	188	205	107
75°	41	54	79	122	129	45
85°	4	13	31	60	69	6
90°	0	4	16	38	45	0
95°	0	1	7	21	25	0
105°	0	1	1	4	6	0
115°	0	0	1	2	2	0
125°	0	0	0	1	2	0
135°	0	0	0	0	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°	391.0	391.0	391.0	391.0	391.0
2.5°	391.5	390.5	388.3	390.4	391.0
5°	390.1	389.3	390.6	395.0	396.1
7.5°	386.8	389.8	393.4	401.4	403.9
10°	382.0	387.7	398.4	405.2	402.6
12.5°	376.1	385.8	400.2	387.0	380.8
15°	369.2	383.4	387.1	374.3	374.5
17.5°	361.2	381.4	369.8	369.5	367.2
20°	352.5	374.7	359.4	358.8	356.3
22.5°	343.2	365.9	350.2	348.9	355.6
25°	333.0	354.3	338.1	348.3	353.9
27.5°	320.4	339.2	328.1	342.4	349.5
30°	307.6	323.6	317.8	337.8	350.4
32.5°	295.5	307.2	309.4	336.1	338.1
35°	284.1	292.0	296.4	323.3	334.3
37.5°	271.6	273.8	285.4	318.0	328.6
40°	258.9	257.5	276.2	309.2	323.9
42.5°	245.2	244.7	266.4	304.8	312.2
45°	232.2	233.2	252.4	292.4	303.3
47.5°	218.9	220.2	239.2	278.8	292.3
50°	203.4	205.2	227.4	266.7	284.1
52.5°	186.7	190.1	215.9	255.2	272.8
55°	171.0	173.8	201.4	245.4	264.9
57.5°	156.7	158.4	186.3	233.1	247.8
60°	142.6	143.0	172.1	219.4	233.5
62.5°	126.4	127.1	157.6	203.2	222.1
65°	108.3	111.7	141.9	187.7	204.8
67.5°	91.3	97.3	125.9	173.6	182.5
70°	73.1	83.2	110.2	156.9	163.2
72.5°	56.5	68.3	94.1	138.3	147.1
75°	40.9	54.2	79.1	121.6	129.2
77.5°	27.6	41.1	65.1	103.1	113.2
80°	16.5	30.0	52.6	85.9	97.3
82.5°	8.4	20.2	40.8	72.1	82.3
85°	3.7	12.7	30.8	59.8	68.7
87.5°	1.0	7.2	22.7	48.4	55.8
90°	0.1	3.8	16.2	37.9	44.7
92.5°	0.1	1.8	11.4	28.7	33.9
95°	0.1	1.0	7.1	20.8	25.4
97.5°	0.1	0.6	4.3	14.7	18.6
100°	0.1	0.5	2.5	9.8	13.3
102.5°	0.1	0.6	1.8	6.2	8.7
105°	0.1	0.6	1.4	4.1	5.7
107.5°	0.2	0.6	1.3	3.0	4.0
110°	0.1	0.5	1.4	2.3	3.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.4	1.3	1.9	2.3
115°	0.1	0.3	1.1	1.8	1.9
117.5°	0.2	0.2	0.9	1.8	1.9
120°	0.2	0.2	0.7	1.8	2.0
122.5°	0.2	0.2	0.6	1.6	1.9
125°	0.1	0.2	0.5	1.2	1.7
127.5°	0.2	0.2	0.4	1.0	1.3
130°	0.2	0.2	0.3	0.7	1.0
132.5°	0.2	0.2	0.2	0.6	0.7
135°	0.2	0.2	0.2	0.4	0.6
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)