

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: P517803

Luminaire Tested: HVL8-1-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: P517803
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2STD-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: 1441.0 lumens
Efficiency: N/A
Efficacy: 88.4 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

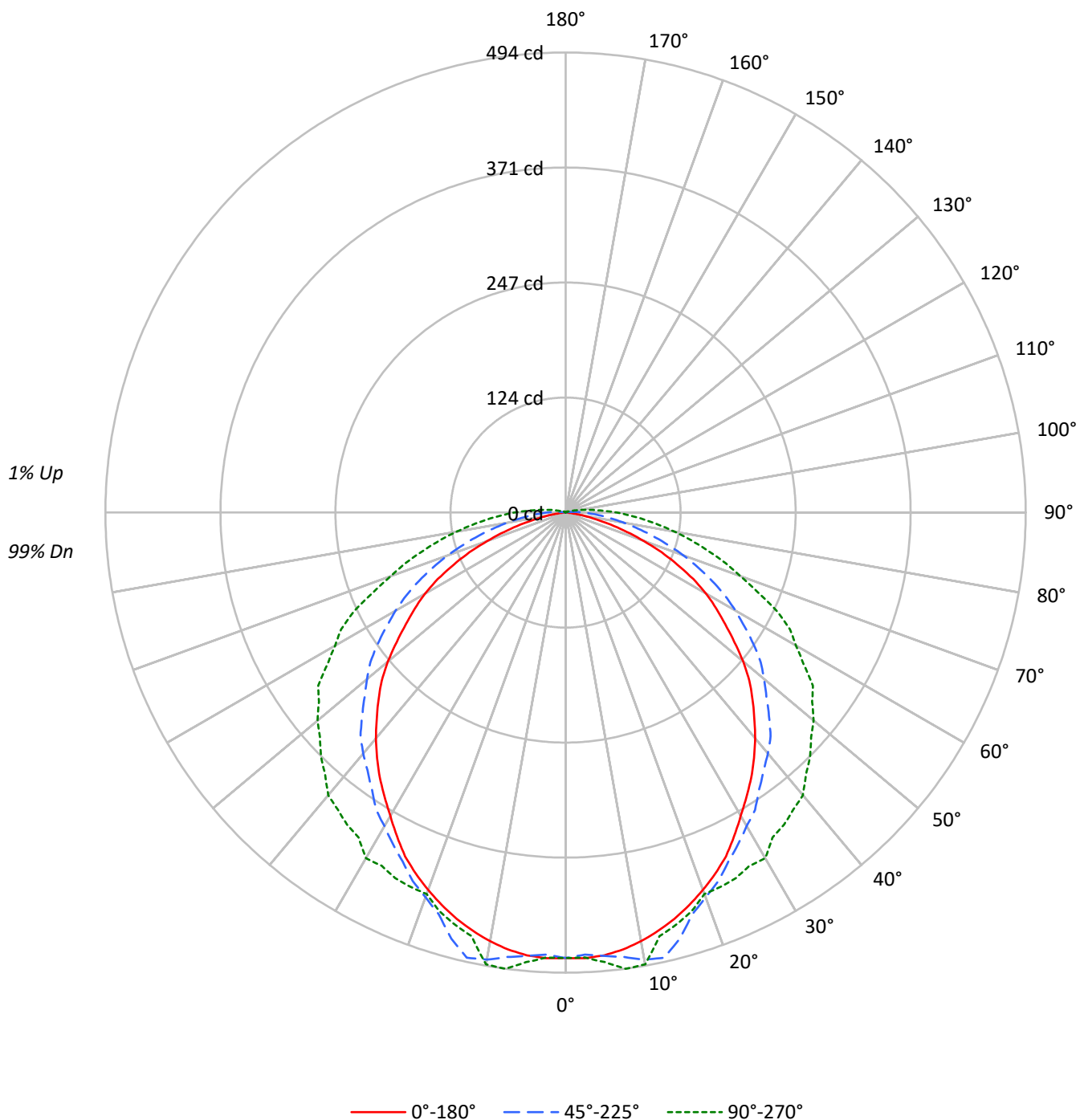
Input Watts (W): 16.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

TEST NUMBER: P517803

CATALOG NUMBER: HVL8-1-LD4-2STD-30-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517803

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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	39	67	54	46	39	52	44	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°	7723	7723	7723
5°	7623	7549	7686
10°	7441	7596	7734
15°	7226	7337	7178
20°	6985	6822	6863
25°	6734	6478	6907
30°	6398	6195	6983
35°	6135	5925	6860
40°	5856	5708	6902
45°	5558	5446	6779
50°	5216	5172	6727
55°	4756	4880	6723
60°	4370	4503	6435
65°	3726	4062	6230
70°	2898	3516	5588
75°	1927	2876	5099
80°	965	2238	4580
85°	287	1599	4033

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 6779 cd/sqm

TEST NUMBER: P517803

CATALOG NUMBER: HVL8-1-LD4-2STD-30-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	46.0	3.2
10°-20°	130.9	9.1
20°-30°	194.8	13.5
30°-40°	234.1	16.2
40°-50°	246.4	17.1
50°-60°	228.7	15.9
60°-70°	180.8	12.5
70°-80°	110.5	7.7
80°-90°	48.1	3.3
90°-100°	15.0	1.0
100°-110°	3.4	0.2
110°-120°	1.4	0.1
120°-130°	0.8	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°	371.7	25.8
0°-40°	605.8	42.0
0°-60°	1081.0	75.0
0°-90°	1420.4	98.6
90°-120°	19.7	1.4
90°-150°	20.7	1.4
90°-180°	21.0	1.5
0°-180°	1441.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	478	478	478	478	478	
5°	477	476	478	483	485	45
15°	452	469	474	458	458	127
25°	407	433	414	426	433	187
35°	348	357	363	396	409	217
45°	284	285	309	358	371	219
55°	209	213	246	300	324	188
65°	132	137	174	230	250	131
75°	50	66	97	149	158	55
85°	4	16	38	73	84	7
90°	0	5	20	46	55	0
95°	0	1	9	25	31	0
105°	0	1	2	5	7	0
115°	0	0	1	2	2	0
125°	0	0	1	2	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

TEST NUMBER: P517803

CATALOG NUMBER: HVL8-1-LD4-2STD-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	478.3	478.3	478.3	478.3	478.3
2.5°	478.9	477.7	475.0	477.6	478.2
5°	477.2	476.2	477.8	483.2	484.6
7.5°	473.2	476.9	481.3	491.0	494.1
10°	467.2	474.2	487.4	495.7	492.5
12.5°	460.0	471.9	489.5	473.4	465.9
15°	451.6	469.0	473.6	457.9	458.2
17.5°	441.8	466.5	452.4	452.0	449.2
20°	431.2	458.4	439.6	438.9	435.8
22.5°	419.8	447.5	428.3	426.8	435.0
25°	407.4	433.4	413.6	426.0	432.9
27.5°	391.9	414.9	401.4	418.9	427.6
30°	376.2	395.8	388.8	413.2	428.6
32.5°	361.5	375.8	378.5	411.1	413.6
35°	347.6	357.2	362.6	395.5	409.0
37.5°	332.3	334.9	349.1	389.0	401.9
40°	316.7	315.0	337.8	378.3	396.2
42.5°	299.9	299.3	325.8	372.9	381.9
45°	284.0	285.3	308.8	357.7	371.1
47.5°	267.8	269.4	292.6	341.0	357.6
50°	248.9	251.0	278.2	326.2	347.6
52.5°	228.4	232.5	264.2	312.2	333.7
55°	209.2	212.6	246.3	300.2	324.1
57.5°	191.7	193.7	227.9	285.1	303.1
60°	174.4	174.9	210.6	268.4	285.6
62.5°	154.6	155.5	192.7	248.6	271.7
65°	132.4	136.6	173.5	229.7	250.5
67.5°	111.7	119.0	154.0	212.3	223.2
70°	89.5	101.8	134.8	192.0	199.7
72.5°	69.1	83.6	115.1	169.2	180.0
75°	50.1	66.4	96.8	148.7	158.0
77.5°	33.7	50.3	79.6	126.1	138.5
80°	20.2	36.7	64.3	105.1	119.1
82.5°	10.3	24.7	49.9	88.2	100.7
85°	4.5	15.6	37.7	73.2	84.0
87.5°	1.3	8.9	27.8	59.1	68.3
90°	0.1	4.7	19.8	46.4	54.7
92.5°	0.1	2.2	13.9	35.1	41.4
95°	0.1	1.2	8.7	25.4	31.1
97.5°	0.1	0.7	5.3	18.0	22.8
100°	0.1	0.6	3.1	12.0	16.3
102.5°	0.1	0.7	2.1	7.6	10.6
105°	0.1	0.7	1.8	5.0	7.0
107.5°	0.2	0.7	1.6	3.7	4.9
110°	0.1	0.6	1.7	2.8	3.8

TEST NUMBER: P517803

CATALOG NUMBER: HVL8-1-LD4-2STD-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.5	1.6	2.3	2.8
115°	0.1	0.4	1.4	2.2	2.3
117.5°	0.2	0.3	1.1	2.2	2.3
120°	0.2	0.2	0.9	2.1	2.4
122.5°	0.2	0.2	0.7	1.9	2.3
125°	0.1	0.2	0.6	1.5	2.0
127.5°	0.2	0.2	0.5	1.2	1.6
130°	0.2	0.2	0.4	0.9	1.2
132.5°	0.2	0.2	0.3	0.7	0.9
135°	0.2	0.2	0.2	0.5	0.7
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)