

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: P517838

Luminaire Tested: HVL8-1-LD4-3LO-30-UNV-O-EDD

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: P517838
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3LO-30-UNV-O-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1843.0 lumens
Efficiency: N/A
Efficacy: 109.7 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

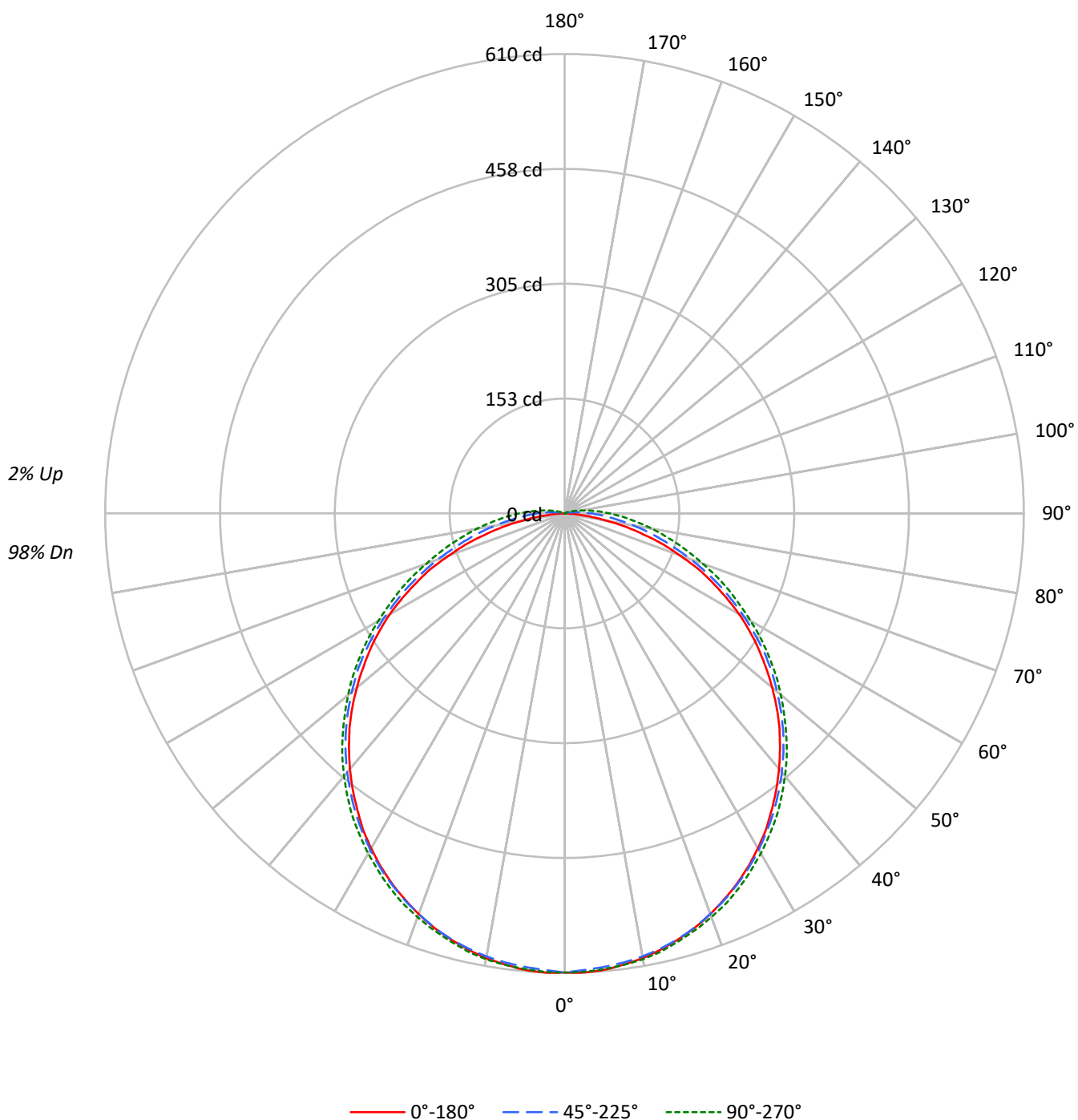
Input Watts (W): 16.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517838

CATALOG NUMBER: HVL8-1-LD4-3LO-30-UNV-O-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517838

CATALOG NUMBER: HVL8-1-LD4-3LO-30-UNV-O-EDD

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			98
1	108	102	98	94	105	100	96	92	95	92	89	91	88	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	77	73	79	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	52	62	56	51	60	54	50			47
5	75	61	52	45	72	60	52	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	40	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°	9843	9843	9843
5°	9717	9550	9632
10°	9548	9309	9439
15°	9362	9057	9207
20°	9172	8783	8982
25°	8963	8508	8753
30°	8735	8220	8493
35°	8470	7910	8236
40°	8197	7587	7936
45°	7903	7243	7612
50°	7548	6854	7263
55°	7164	6435	6878
60°	6718	5911	6431
65°	6093	5335	5986
70°	5274	4675	5468
75°	4215	3960	4999
80°	2829	3261	4568
85°	1211	2553	4158

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 7903 cd/sqm

TEST NUMBER: P517838

CATALOG NUMBER: HVL8-1-LD4-3LO-30-UNV-O-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	57.7	3.1
10°-20°	165.5	9.0
20°-30°	251.1	13.6
30°-40°	303.6	16.5
40°-50°	316.8	17.2
50°-60°	289.6	15.7
60°-70°	225.8	12.3
70°-80°	141.2	7.7
80°-90°	64.1	3.5
90°-100°	21.5	1.2
100°-110°	5.4	0.3
110°-120°	0.8	0.0
120°-130°	0.0	0.0
130°-140°	0.0	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°	474.2	25.7
0°-40°	777.8	42.2
0°-60°	1384.1	75.1
0°-90°	1815.3	98.5
90°-120°	27.7	1.5
90°-150°	27.7	1.5
90°-180°	28.0	1.5
0°-180°	1843.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	610	610	610	610	610	
5°	608	607	604	607	607	58
15°	585	586	585	588	588	165
25°	542	543	543	548	549	250
35°	480	482	484	489	491	300
45°	404	407	411	415	417	311
55°	315	319	325	330	332	281
65°	216	220	228	237	241	214
75°	110	116	133	149	155	117
85°	19	35	60	80	87	24
90°	0	13	36	53	60	1
95°	0	3	18	33	38	0
105°	0	0	3	9	12	0
115°	0	0	1	2	2	0
125°	0	0	0	0	0	0
135°	0	0	0	0	0	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: P517838

CATALOG NUMBER: HVL8-1-LD4-3LO-30-UNV-O-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	609.6	609.6	609.6	609.6	609.6
2.5°	610.3	609.4	606.7	609.4	609.3
5°	608.3	607.1	604.4	607.3	607.3
7.5°	604.2	603.8	601.4	604.7	604.7
10°	599.5	599.4	597.3	600.9	601.1
12.5°	592.9	593.5	591.6	595.0	595.5
15°	585.1	586.1	584.6	587.9	587.7
17.5°	576.6	577.2	576.1	579.8	579.7
20°	566.2	566.9	566.0	569.9	570.3
22.5°	554.5	555.5	555.4	559.4	560.6
25°	542.2	542.6	543.2	547.8	548.6
27.5°	528.5	529.2	530.2	534.4	535.3
30°	513.6	514.7	515.9	520.2	521.3
32.5°	497.8	498.9	500.3	505.9	506.5
35°	479.9	482.1	484.1	489.0	491.0
37.5°	462.1	464.9	466.7	471.9	473.5
40°	443.3	446.0	449.0	454.5	455.5
42.5°	423.6	426.8	430.4	435.3	437.0
45°	403.8	407.4	410.7	414.7	416.7
47.5°	382.4	386.0	390.0	394.6	395.9
50°	360.2	364.4	368.7	373.0	375.3
52.5°	337.5	342.6	347.5	352.1	354.2
55°	315.1	318.9	324.8	329.5	331.6
57.5°	291.8	295.0	300.3	308.1	309.2
60°	268.1	271.0	276.5	282.8	285.4
62.5°	242.0	245.9	251.6	259.7	262.0
65°	216.5	220.3	227.9	237.0	240.7
67.5°	192.0	193.3	203.0	212.5	218.6
70°	162.9	167.8	179.2	190.8	195.4
72.5°	137.9	142.8	155.3	169.0	174.7
75°	109.6	116.4	133.3	149.3	154.9
77.5°	84.8	92.3	113.2	129.3	135.8
80°	59.2	70.8	93.7	111.8	118.8
82.5°	37.2	51.6	76.0	95.0	101.2
85°	19.0	35.1	60.2	79.6	86.6
87.5°	5.0	22.7	46.8	65.4	72.6
90°	0.1	13.1	35.5	53.3	59.8
92.5°	0.1	7.3	26.4	42.4	49.0
95°	0.1	3.4	18.4	33.3	38.5
97.5°	0.1	1.4	12.6	25.1	30.3
100°	0.1	0.7	8.0	18.2	22.7
102.5°	0.3	0.4	5.0	13.1	16.7
105°	0.3	0.4	3.0	8.9	11.9
107.5°	0.3	0.4	1.7	6.0	8.2
110°	0.4	0.4	1.0	3.7	5.5

TEST NUMBER: P517838

CATALOG NUMBER: HVL8-1-LD4-3LO-30-UNV-O-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	0.4	0.6	2.4	3.6
115°	0.4	0.4	0.6	1.6	2.3
117.5°	0.0	0.0	0.0	0.0	0.0
120°	0.0	0.0	0.0	0.0	0.0
122.5°	0.0	0.0	0.0	0.0	0.0
125°	0.0	0.0	0.0	0.0	0.0
127.5°	0.0	0.0	0.0	0.0	0.0
130°	0.0	0.0	0.0	0.0	0.0
132.5°	0.0	0.0	0.0	0.0	0.0
135°	0.0	0.0	0.0	0.0	0.0
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)