

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: P517275

Luminaire Tested: HVL12-1-LD4-3STD-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: P517275
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-3STD-30-UNV-C-EDD-90
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2372.0 lumens
Efficiency: N/A
Efficacy: 96.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.17')
CIE Type: Direct

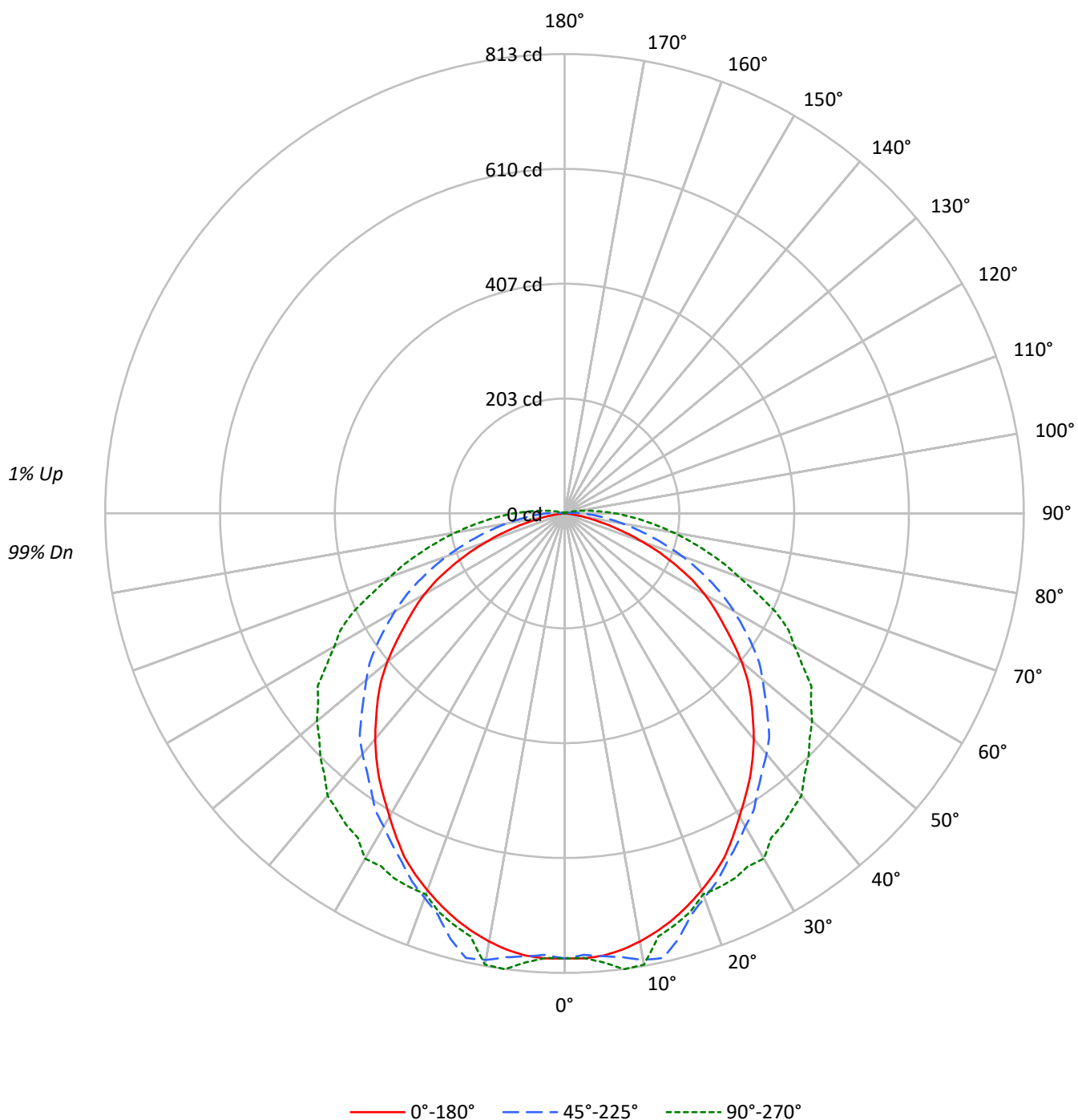
Input Watts (W): 24.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

TEST NUMBER: P517275

CATALOG NUMBER: HVL12-1-LD4-3STD-30-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517275

CATALOG NUMBER: HVL12-1-LD4-3STD-30-UNV-C-EDD-90

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°	8476	8476	8476
5°	8365	8327	8494
10°	8166	8419	8607
15°	7930	8170	8045
20°	7664	7635	7748
25°	7390	7286	7853
30°	7022	7002	8000
35°	6732	6731	7921
40°	6426	6523	8040
45°	6100	6261	7969
50°	5722	5986	7992
55°	5220	5693	8087
60°	4796	5298	7853
65°	4090	4833	7738
70°	3177	4236	7093
75°	2113	3524	6671
80°	1058	2809	6245
85°	315	2076	5879

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 8087 cd/sqm

TEST NUMBER: P517275

CATALOG NUMBER: HVL12-1-LD4-3STD-30-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	75.7	3.2
10°-20°	215.5	9.1
20°-30°	320.6	13.5
30°-40°	385.4	16.2
40°-50°	405.7	17.1
50°-60°	376.4	15.9
60°-70°	297.6	12.5
70°-80°	181.8	7.7
80°-90°	79.2	3.3
90°-100°	24.7	1.0
100°-110°	5.5	0.2
110°-120°	2.2	0.1
120°-130°	1.2	0.1
130°-140°	0.3	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°	611.8	25.8
0°-40°	997.2	42.0
0°-60°	1779.4	75.0
0°-90°	2338.0	98.6
90°-120°	32.4	1.4
90°-150°	34.0	1.4
90°-180°	34.0	1.4
0°-180°	2372.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	787	787	787	787	787	
5°	786	784	787	795	798	74
15°	743	772	780	754	754	209
25°	671	713	681	701	713	308
35°	572	588	597	651	673	358
45°	468	470	508	589	611	360
55°	344	350	406	494	534	309
65°	218	225	286	378	412	216
75°	82	109	159	245	260	90
85°	7	26	62	120	138	11
90°	0	8	33	76	90	0
95°	0	2	14	42	51	0
105°	0	1	3	8	12	0
115°	0	1	2	4	4	0
125°	0	0	1	2	3	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

TEST NUMBER: P517275

CATALOG NUMBER: HVL12-1-LD4-3STD-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	787.4	787.4	787.4	787.4	787.4
2.5°	788.3	786.3	781.9	786.1	787.2
5°	785.5	783.8	786.6	795.4	797.6
7.5°	778.9	785.0	792.2	808.2	813.4
10°	769.1	780.6	802.3	815.9	810.6
12.5°	757.2	776.8	805.8	779.2	766.8
15°	743.4	772.0	779.5	753.7	754.2
17.5°	727.2	768.0	744.7	744.1	739.4
20°	709.7	754.5	723.7	722.4	717.4
22.5°	691.0	736.7	705.1	702.5	716.0
25°	670.6	713.4	680.9	701.2	712.6
27.5°	645.1	683.0	660.7	689.5	703.8
30°	619.3	651.5	640.0	680.2	705.6
32.5°	595.1	618.6	623.0	676.7	680.9
35°	572.1	588.0	596.8	651.0	673.2
37.5°	546.9	551.3	574.7	640.3	661.6
40°	521.3	518.6	556.1	622.7	652.2
42.5°	493.7	492.7	536.4	613.8	628.6
45°	467.5	469.6	508.3	588.8	610.8
47.5°	440.8	443.5	481.7	561.4	588.6
50°	409.6	413.2	457.9	537.0	572.1
52.5°	376.0	382.7	434.8	513.9	549.4
55°	344.4	350.0	405.5	494.2	533.5
57.5°	315.5	318.9	375.2	469.3	499.0
60°	287.1	287.9	346.6	441.7	470.1
62.5°	254.5	256.0	317.3	409.2	447.2
65°	218.0	224.9	285.7	378.0	412.4
67.5°	183.8	195.8	253.4	349.5	367.5
70°	147.2	167.6	221.8	316.0	328.6
72.5°	113.7	137.6	189.4	278.4	296.2
75°	82.4	109.2	159.3	244.8	260.2
77.5°	55.5	82.8	131.0	207.6	227.9
80°	33.2	60.5	105.9	173.1	196.0
82.5°	17.0	40.6	82.1	145.2	165.7
85°	7.4	25.7	62.1	120.5	138.3
87.5°	2.1	14.6	45.7	97.4	112.4
90°	0.2	7.7	32.6	76.3	90.0
92.5°	0.2	3.7	22.9	57.7	68.2
95°	0.2	1.9	14.3	41.9	51.2
97.5°	0.2	1.1	8.7	29.7	37.5
100°	0.2	1.0	5.1	19.7	26.8
102.5°	0.2	1.1	3.5	12.5	17.5
105°	0.2	1.1	2.9	8.2	11.5
107.5°	0.3	1.1	2.6	6.1	8.0
110°	0.2	1.0	2.7	4.7	6.3

TEST NUMBER: P517275

CATALOG NUMBER: HVL12-1-LD4-3STD-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.8	2.6	3.8	4.7
115°	0.2	0.6	2.2	3.7	3.8
117.5°	0.3	0.5	1.8	3.7	3.8
120°	0.3	0.3	1.4	3.5	4.0
122.5°	0.3	0.3	1.1	3.2	3.8
125°	0.2	0.3	1.0	2.4	3.4
127.5°	0.3	0.3	0.8	1.9	2.6
130°	0.3	0.3	0.6	1.4	1.9
132.5°	0.3	0.3	0.5	1.1	1.4
135°	0.3	0.3	0.3	0.8	1.1
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)