

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: P517707

Luminaire Tested: HVL12-8-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: P517707
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-3STD-30-UNV-C-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 21899.0 lumens
Efficiency: N/A
Efficacy: 111.6 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 8' x H: 0.17')
CIE Type: Direct

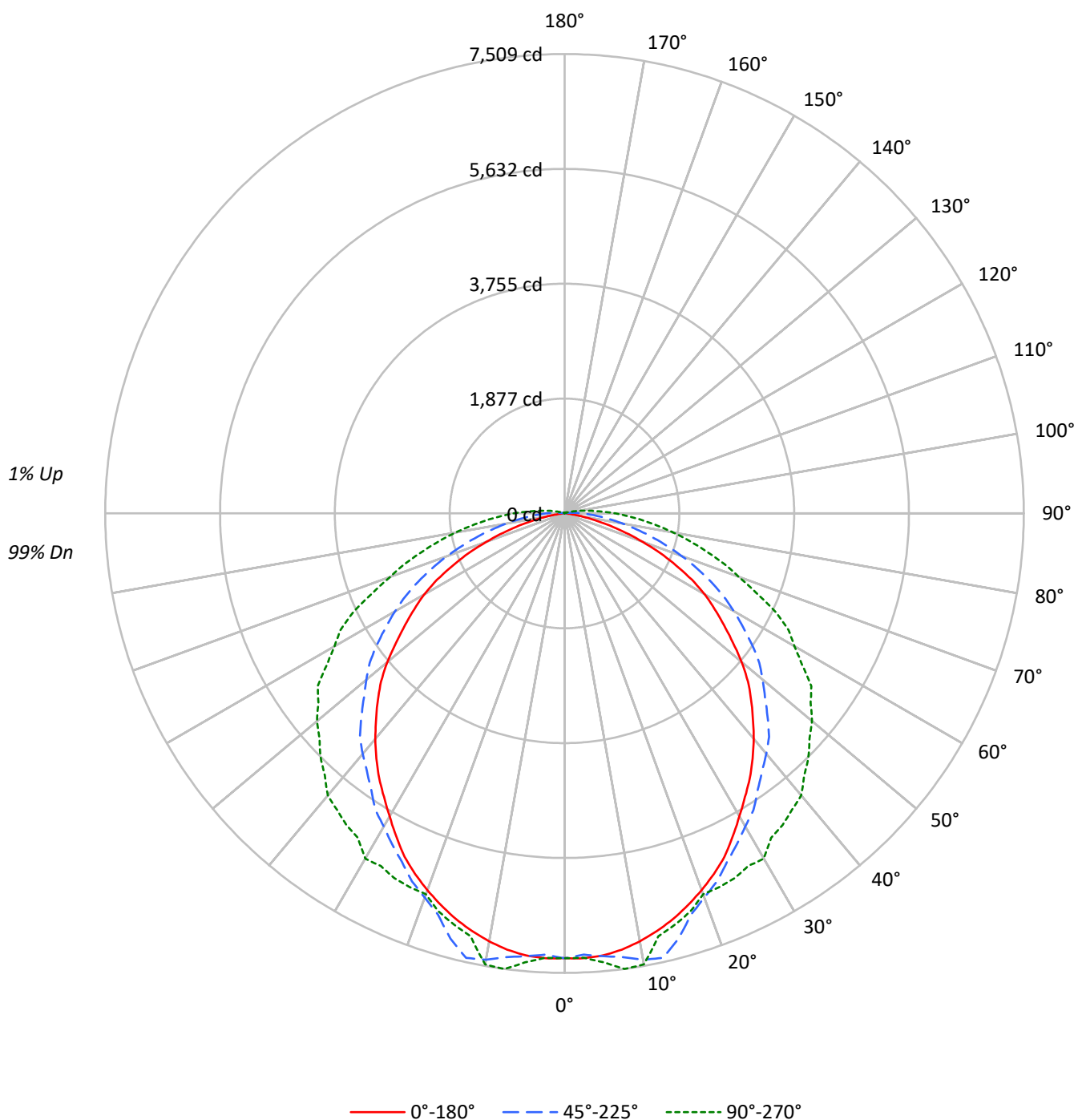
Input Watts (W): 196.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517707

CATALOG NUMBER: HVL12-8-LD4-3STD-30-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517707

CATALOG NUMBER: HVL12-8-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°	9781	9781	9781
5°	9776	9696	9803
10°	9666	9889	9933
15°	9507	9681	9284
20°	9312	9126	8941
25°	9103	8789	9063
30°	8777	8527	9232
35°	8551	8282	9141
40°	8308	8114	9278
45°	8046	7884	9197
50°	7725	7642	9224
55°	7242	7383	9332
60°	6884	7003	9063
65°	6133	6537	8929
70°	5058	5905	8187
75°	3671	5113	7698
80°	2124	4322	7207
85°	849	3517	6783

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 9332 cd/sqm

TEST NUMBER: P517707

CATALOG NUMBER: HVL12-8-LD4-3STD-30-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	698.7	3.2
10°-20°	1989.6	9.1
20°-30°	2960.3	13.5
30°-40°	3558.3	16.2
40°-50°	3745.3	17.1
50°-60°	3475.2	15.9
60°-70°	2747.8	12.5
70°-80°	1678.4	7.7
80°-90°	731.3	3.3
90°-100°	227.7	1.0
100°-110°	51.2	0.2
110°-120°	20.6	0.1
120°-130°	11.6	0.1
130°-140°	3.1	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°	5648.6	25.8
0°-40°	9206.9	42.0
0°-60°	16427.4	75.0
0°-90°	21584.9	98.6
90°-120°	299.4	1.4
90°-150°	314.1	1.4
90°-180°	314.0	1.4
0°-180°	21899.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	7269	7269	7269	7269	7269	
5°	7252	7237	7262	7343	7364	687
15°	6864	7127	7197	6958	6963	1933
25°	6191	6587	6286	6474	6579	2842
35°	5282	5429	5510	6011	6215	3301
45°	4316	4336	4693	5436	5639	3327
55°	3179	3231	3744	4562	4925	2857
65°	2012	2076	2637	3490	3807	1993
75°	761	1008	1470	2260	2402	831
85°	68	237	573	1112	1276	105
90°	2	71	301	705	831	3
95°	2	18	132	386	472	1
105°	2	10	27	76	107	2
115°	2	6	21	34	36	2
125°	2	3	9	22	31	2
135°	3	3	3	7	10	1
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: P517707

CATALOG NUMBER: HVL12-8-LD4-3STD-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	7269.3	7269.3	7269.3	7269.3	7269.3
2.5°	7278.2	7258.9	7218.9	7257.4	7267.8
5°	7251.5	7236.7	7261.9	7343.3	7364.0
7.5°	7190.8	7247.1	7313.7	7461.8	7509.2
10°	7100.5	7207.1	7407.0	7532.9	7484.0
12.5°	6990.9	7171.5	7439.6	7193.8	7079.7
15°	6863.5	7127.1	7196.7	6958.3	6962.8
17.5°	6714.0	7090.1	6875.4	6869.5	6826.5
20°	6552.6	6965.7	6681.4	6669.6	6623.6
22.5°	6379.3	6801.3	6509.6	6485.9	6610.3
25°	6191.3	6586.6	6286.0	6474.1	6579.2
27.5°	5955.8	6305.3	6099.4	6366.0	6497.8
30°	5717.4	6015.0	5908.4	6280.1	6514.1
32.5°	5493.8	5711.5	5751.5	6247.5	6286.0
35°	5282.0	5428.6	5510.1	6010.6	6214.9
37.5°	5049.5	5089.5	5305.7	5911.4	6108.3
40°	4812.6	4787.4	5134.0	5748.5	6021.0
42.5°	4557.9	4549.0	4951.8	5667.0	5803.3
45°	4316.5	4335.8	4692.7	5436.0	5638.9
47.5°	4069.3	4094.4	4446.9	5182.8	5434.6
50°	3782.0	3814.6	4227.7	4957.7	5282.0
52.5°	3471.0	3533.2	4014.5	4744.5	5071.8
55°	3179.3	3231.1	3743.5	4562.4	4925.2
57.5°	2912.7	2943.8	3463.6	4332.8	4606.8
60°	2650.6	2658.0	3200.0	4078.1	4340.2
62.5°	2350.0	2363.4	2929.0	3777.5	4128.5
65°	2012.4	2076.1	2637.3	3490.3	3807.2
67.5°	1697.0	1808.1	2339.7	3226.7	3392.5
70°	1359.4	1547.4	2048.0	2917.2	3034.2
72.5°	1049.9	1270.5	1748.8	2570.7	2735.0
75°	761.1	1008.4	1470.4	2259.7	2401.9
77.5°	512.4	764.1	1209.8	1916.2	2104.2
80°	306.5	558.3	977.3	1597.8	1809.5
82.5°	157.0	374.6	758.2	1340.1	1529.7
85°	68.1	236.9	573.1	1112.1	1276.5
87.5°	19.3	134.8	422.0	898.8	1038.0
90°	1.5	71.1	300.6	704.9	830.7
92.5°	1.5	34.1	211.8	533.1	629.3
95°	1.5	17.8	131.8	386.5	472.4
97.5°	1.5	10.4	80.0	273.9	346.5
100°	1.5	8.9	47.4	182.1	247.3
102.5°	1.5	10.4	32.6	115.5	161.4
105°	1.5	10.4	26.7	75.5	106.6
107.5°	3.0	10.4	23.7	56.3	74.0
110°	1.5	8.9	25.2	42.9	57.8

TEST NUMBER: P517707

CATALOG NUMBER: HVL12-8-LD4-3STD-30-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.0	7.4	23.7	35.5	42.9
115°	1.5	5.9	20.7	34.1	35.5
117.5°	3.0	4.4	16.3	34.1	35.5
120°	3.0	3.0	13.3	32.6	37.0
122.5°	3.0	3.0	10.4	29.6	35.5
125°	1.5	3.0	8.9	22.2	31.1
127.5°	3.0	3.0	7.4	17.8	23.7
130°	3.0	3.0	5.9	13.3	17.8
132.5°	3.0	3.0	4.4	10.4	13.3
135°	3.0	3.0	3.0	7.4	10.4
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)