

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: P517635

Luminaire Tested: HVL12-8-LD4-2HI-40-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: P517635
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-2HI-40-UNV-C-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18943.1 lumens
Efficiency: N/A
Efficacy: 107.1 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

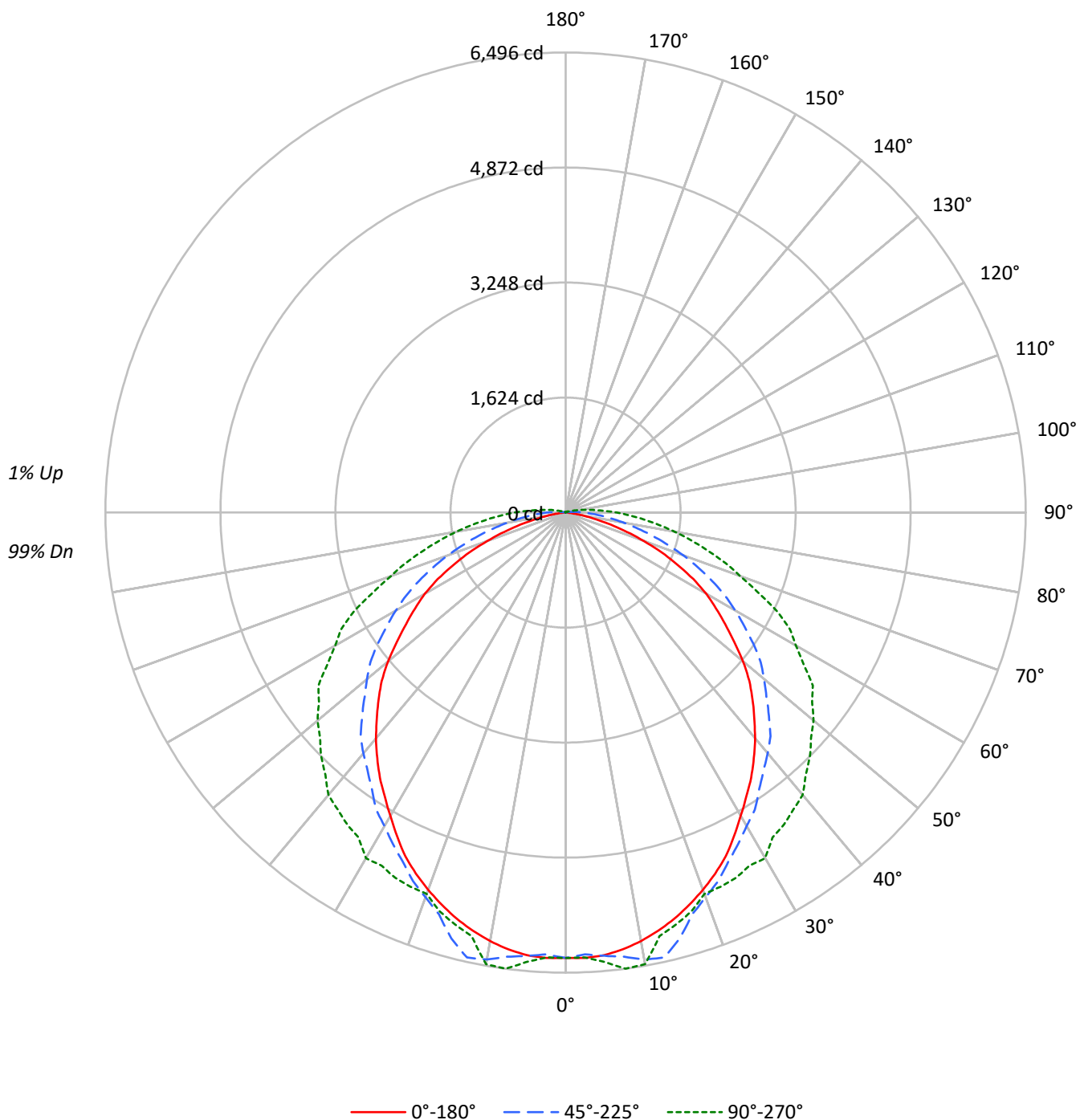
Input Watts (W): 176.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517635

CATALOG NUMBER: HVL12-8-LD4-2HI-40-UNV-C-EDD-90

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	45	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°	8460	8460	8460
5°	8457	8387	8480
10°	8361	8554	8592
15°	8224	8374	8031
20°	8055	7894	7735
25°	7874	7602	7840
30°	7592	7376	7986
35°	7397	7164	7907
40°	7186	7019	8025
45°	6960	6820	7955
50°	6682	6610	7979
55°	6265	6387	8072
60°	5955	6058	7839
65°	5305	5655	7724
70°	4375	5108	7082
75°	3176	4423	6659
80°	1838	3739	6234
85°	734	3042	5867

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 8072 cd/sqm

TEST NUMBER: P517635

CATALOG NUMBER: HVL12-8-LD4-2HI-40-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	604.3	3.2
10°-20°	1721.1	9.1
20°-30°	2560.7	13.5
30°-40°	3078.0	16.2
40°-50°	3239.8	17.1
50°-60°	3006.2	15.9
60°-70°	2376.9	12.5
70°-80°	1451.9	7.7
80°-90°	632.6	3.3
90°-100°	196.9	1.0
100°-110°	44.3	0.2
110°-120°	17.8	0.1
120°-130°	10.0	0.1
130°-140°	2.7	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°	4886.1	25.8
0°-40°	7964.1	42.0
0°-60°	14210.0	75.0
0°-90°	18671.4	98.6
90°-120°	259.0	1.4
90°-150°	271.7	1.4
90°-180°	272.0	1.4
0°-180°	18943.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	6288	6288	6288	6288	6288	
5°	6273	6260	6282	6352	6370	594
15°	5937	6165	6225	6019	6023	1672
25°	5356	5698	5438	5600	5691	2459
35°	4569	4696	4766	5199	5376	2856
45°	3734	3750	4059	4702	4878	2878
55°	2750	2795	3238	3946	4260	2471
65°	1741	1796	2281	3019	3293	1724
75°	658	872	1272	1955	2078	719
85°	59	205	496	962	1104	91
90°	1	62	260	610	719	3
95°	1	15	114	334	409	1
105°	1	9	23	65	92	2
115°	1	5	18	30	31	2
125°	1	3	8	19	27	2
135°	3	3	3	6	9	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: P517635

CATALOG NUMBER: HVL12-8-LD4-2HI-40-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	6288.0	6288.0	6288.0	6288.0	6288.0
2.5°	6295.7	6279.1	6244.5	6277.8	6286.8
5°	6272.7	6259.9	6281.6	6352.1	6370.0
7.5°	6220.2	6268.8	6326.5	6454.6	6495.6
10°	6142.0	6234.2	6407.2	6516.0	6473.8
12.5°	6047.2	6203.5	6435.4	6222.7	6124.1
15°	5937.1	6165.1	6225.3	6019.1	6022.9
17.5°	5807.7	6133.1	5947.3	5942.2	5905.0
20°	5668.1	6025.5	5779.5	5769.3	5729.6
22.5°	5518.2	5883.3	5630.9	5610.4	5718.0
25°	5355.5	5697.5	5437.5	5600.2	5691.1
27.5°	5151.9	5454.2	5276.1	5506.7	5620.7
30°	4945.6	5203.1	5110.9	5432.4	5634.8
32.5°	4752.2	4940.5	4975.1	5404.2	5437.5
35°	4569.0	4695.9	4766.3	5199.3	5376.0
37.5°	4367.9	4402.5	4589.5	5113.4	5283.8
40°	4163.0	4141.2	4441.0	4972.5	5208.2
42.5°	3942.7	3935.0	4283.4	4902.1	5019.9
45°	3733.9	3750.5	4059.2	4702.3	4877.8
47.5°	3520.0	3541.7	3846.6	4483.2	4701.0
50°	3271.5	3299.7	3657.0	4288.5	4569.0
52.5°	3002.5	3056.3	3472.6	4104.1	4387.2
55°	2750.1	2795.0	3238.2	3946.5	4260.3
57.5°	2519.6	2546.5	2996.1	3748.0	3984.9
60°	2292.9	2299.3	2768.1	3527.7	3754.4
62.5°	2032.8	2044.4	2533.7	3267.6	3571.2
65°	1740.8	1795.9	2281.3	3019.1	3293.3
67.5°	1467.9	1564.0	2023.9	2791.1	2934.6
70°	1175.9	1338.6	1771.5	2523.4	2624.6
72.5°	908.2	1099.0	1512.8	2223.7	2365.9
75°	658.4	872.3	1272.0	1954.7	2077.7
77.5°	443.2	661.0	1046.5	1657.5	1820.2
80°	265.2	482.9	845.4	1382.1	1565.3
82.5°	135.8	324.1	655.8	1159.2	1323.2
85°	58.9	204.9	495.7	962.0	1104.2
87.5°	16.7	116.6	365.1	777.5	897.9
90°	1.3	61.5	260.0	609.7	718.6
92.5°	1.3	29.5	183.2	461.1	544.4
95°	1.3	15.4	114.0	334.3	408.6
97.5°	1.3	9.0	69.2	237.0	299.7
100°	1.3	7.7	41.0	157.6	213.9
102.5°	1.3	9.0	28.2	99.9	139.6
105°	1.3	9.0	23.1	65.3	92.2
107.5°	2.6	9.0	20.5	48.7	64.0
110°	1.3	7.7	21.8	37.1	50.0

TEST NUMBER: P517635

CATALOG NUMBER: HVL12-8-LD4-2HI-40-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.6	6.4	20.5	30.7	37.1
115°	1.3	5.1	17.9	29.5	30.7
117.5°	2.6	3.8	14.1	29.5	30.7
120°	2.6	2.6	11.5	28.2	32.0
122.5°	2.6	2.6	9.0	25.6	30.7
125°	1.3	2.6	7.7	19.2	26.9
127.5°	2.6	2.6	6.4	15.4	20.5
130°	2.6	2.6	5.1	11.5	15.4
132.5°	2.6	2.6	3.8	9.0	11.5
135°	2.6	2.6	2.6	6.4	9.0
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)