

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: P517669

Luminaire Tested: HVL12-8-LD4-2STD-40-UNV-O-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: P517669
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-2STD-40-UNV-O-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: 13329.0 lumens
Efficiency: N/A
Efficacy: 99.2 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 8' x H: 0.17')
CIE Type: Direct

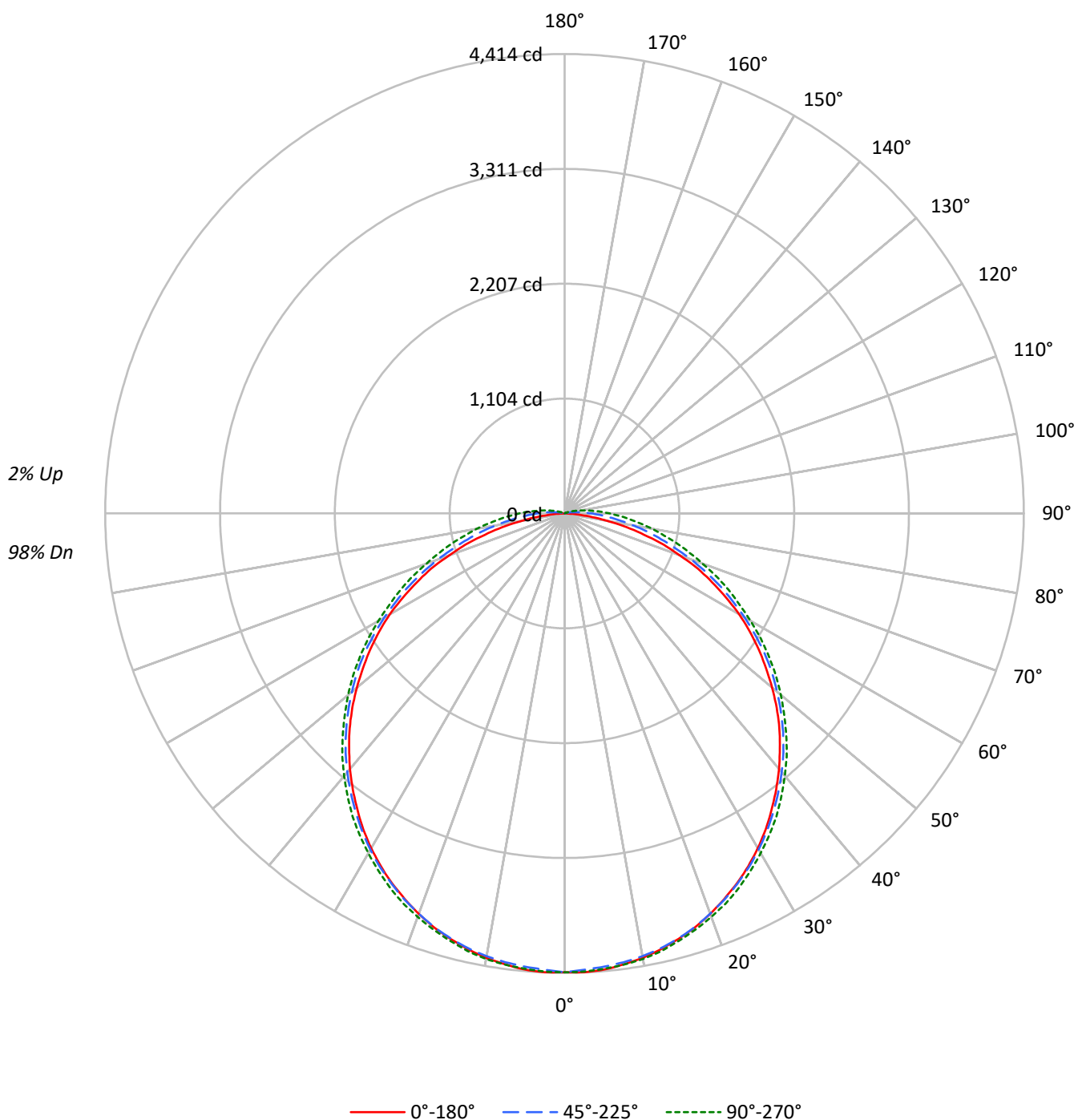
Input Watts (W): 134.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517669

CATALOG NUMBER: HVL12-8-LD4-2STD-40-UNV-O-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				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		98
1	108	102	98	94	105	100	96	92	95	92	89		91	88	86		81
2	98	89	82	76	95	87	80	75	83	77	73		79	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	52		62	56	51		47
5	75	61	52	45	72	60	52	45	58	50	44		56	49	44		41
6	69	55	46	40	67	54	46	39	52	45	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°	5931	5931	5931
5°	5931	5836	5846
10°	5902	5767	5770
15°	5862	5687	5668
20°	5819	5591	5568
25°	5765	5492	5466
30°	5702	5384	5343
35°	5619	5262	5223
40°	5534	5133	5076
45°	5443	4990	4915
50°	5321	4820	4740
55°	5192	4632	4545
60°	5037	4376	4310
65°	4773	4086	4082
70°	4385	3737	3814
75°	3825	3354	3590
80°	2967	2997	3423
85°	1711	2672	3330

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 5443 cd/sqm

TEST NUMBER: P517669

CATALOG NUMBER: HVL12-8-LD4-2STD-40-UNV-O-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	417.2	3.1
10°-20°	1196.6	9.0
20°-30°	1815.7	13.6
30°-40°	2195.5	16.5
40°-50°	2290.8	17.2
50°-60°	2094.5	15.7
60°-70°	1632.8	12.2
70°-80°	1021.4	7.7
80°-90°	463.9	3.5
90°-100°	155.5	1.2
100°-110°	39.0	0.3
110°-120°	6.2	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°	3429.5	25.7
0°-40°	5625.0	42.2
0°-60°	10010.3	75.1
0°-90°	13128.3	98.5
90°-120°	200.7	1.5
90°-150°	200.7	1.5
90°-180°	201.0	1.5
0°-180°	13329.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4408	4408	4408	4408	4408	
5°	4399	4391	4371	4392	4392	418
15°	4232	4239	4228	4252	4250	1195
25°	3921	3924	3928	3962	3968	1807
35°	3471	3487	3501	3536	3551	2173
45°	2920	2946	2970	2999	3014	2250
55°	2279	2306	2349	2383	2399	2036
65°	1566	1593	1648	1714	1741	1550
75°	793	842	964	1080	1120	845
85°	137	254	435	576	627	174
90°	1	95	257	386	432	5
95°	1	25	133	241	278	1
105°	2	3	22	64	86	2
115°	3	3	4	11	17	2
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: P517669

CATALOG NUMBER: HVL12-8-LD4-2STD-40-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4408.4	4408.4	4408.4	4408.4	4408.4
2.5°	4413.6	4407.4	4387.6	4407.4	4406.3
5°	4399.1	4390.8	4371.0	4391.8	4391.8
7.5°	4370.0	4366.9	4349.2	4373.1	4373.1
10°	4335.7	4334.6	4320.1	4346.1	4347.1
12.5°	4287.9	4292.0	4278.5	4303.5	4306.6
15°	4231.8	4239.0	4227.6	4251.5	4250.5
17.5°	4170.4	4174.6	4166.3	4193.3	4192.3
20°	4094.6	4099.8	4093.5	4121.6	4124.7
22.5°	4010.4	4017.7	4016.6	4045.7	4054.0
25°	3921.0	3924.1	3928.3	3961.6	3967.8
27.5°	3822.3	3827.5	3834.8	3864.9	3871.1
30°	3714.2	3722.5	3730.8	3762.0	3770.3
32.5°	3599.9	3608.2	3618.6	3659.1	3663.3
35°	3471.0	3486.6	3501.2	3536.5	3551.1
37.5°	3342.2	3361.9	3375.4	3412.8	3424.3
40°	3206.0	3225.8	3247.6	3287.1	3294.4
42.5°	3063.7	3086.5	3112.5	3147.8	3160.3
45°	2920.2	2946.2	2970.1	2999.2	3013.8
47.5°	2765.4	2791.4	2820.5	2853.7	2863.1
50°	2605.4	2635.5	2666.7	2697.8	2714.5
52.5°	2441.2	2477.5	2512.9	2546.1	2561.7
55°	2279.0	2306.1	2348.7	2383.0	2398.6
57.5°	2110.7	2133.5	2172.0	2228.1	2236.4
60°	1939.2	1960.0	1999.5	2045.2	2063.9
62.5°	1750.1	1778.1	1819.7	1877.9	1894.5
65°	1566.1	1593.1	1648.2	1713.7	1740.7
67.5°	1388.4	1397.8	1468.4	1537.0	1580.7
70°	1178.5	1213.8	1295.9	1380.1	1413.4
72.5°	997.7	1033.0	1123.4	1222.1	1263.7
75°	792.9	841.8	964.4	1079.8	1120.3
77.5°	613.1	667.2	818.9	935.3	982.1
80°	428.2	512.3	677.6	808.5	859.4
82.5°	269.2	373.1	549.8	686.9	731.6
85°	137.2	253.6	435.4	575.7	626.7
87.5°	36.4	164.2	338.8	472.9	524.8
90°	1.0	94.6	256.7	385.6	432.3
92.5°	1.0	53.0	191.2	306.6	354.4
95°	1.0	24.9	133.0	241.1	278.5
97.5°	1.0	10.4	91.5	181.9	219.3
100°	1.0	5.2	58.2	132.0	164.2
102.5°	2.1	3.1	36.4	94.6	120.6
105°	2.1	3.1	21.8	64.4	86.3
107.5°	2.1	3.1	12.5	43.6	59.2
110°	3.1	3.1	7.3	27.0	39.5

TEST NUMBER: P517669

CATALOG NUMBER: HVL12-8-LD4-2STD-40-UNV-O-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.1	3.1	4.2	17.7	26.0
115°	3.1	3.1	4.2	11.4	16.6
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)