

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: P518243

Luminaire Tested: HVL8-8-LD4-2STD-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: P518243
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-2STD-40-UNV-C-EDD-90
Description: 8 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14099.0 lumens
Efficiency: N/A
Efficacy: 107.9 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 8' x H: 0.17')
CIE Type: Direct

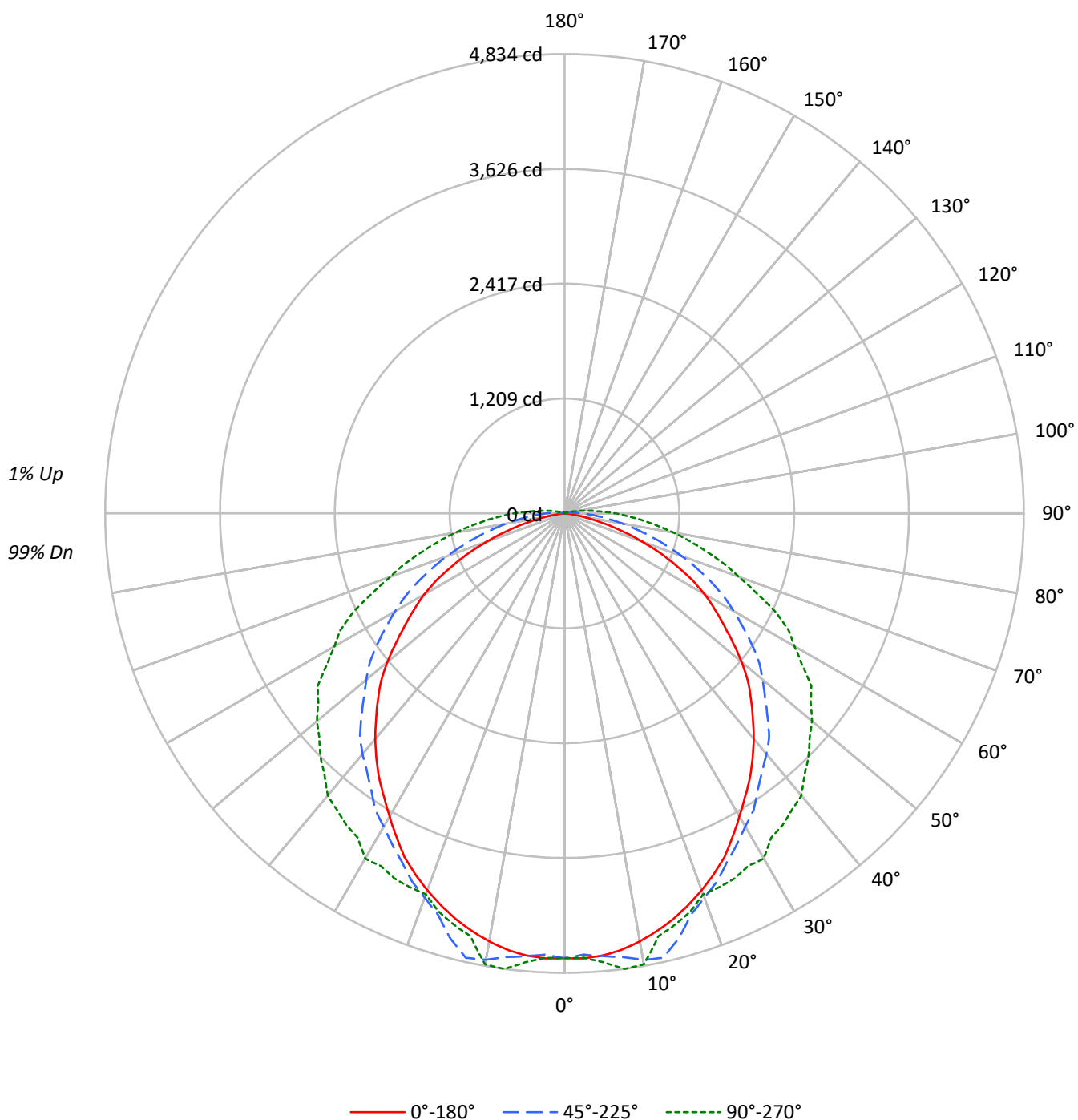
Input Watts (W): 130.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P518243

CATALOG NUMBER: HVL8-8-LD4-2STD-40-UNV-C-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P518243

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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		99
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		81
2	98	89	82	76	95	87	80	75	83	78	73		80	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	51		62	56	51		47
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		41
6	69	55	46	39	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°	9446	9446	9446
5°	9441	9316	9400
10°	9334	9454	9457
15°	9182	9209	8778
20°	8993	8637	8395
25°	8791	8273	8448
30°	8476	7982	8541
35°	8258	7707	8390
40°	8023	7502	8442
45°	7770	7237	8289
50°	7460	6958	8226
55°	6994	6659	8221
60°	6648	6244	7870
65°	5923	5748	7620
70°	4885	5098	6833
75°	3545	4305	6238
80°	2051	3505	5600
85°	821	2679	4933

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 8289 cd/sqm

TEST NUMBER: P518243

CATALOG NUMBER: HVL8-8-LD4-2STD-40-UNV-C-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	449.8	3.2
10°-20°	1281.0	9.1
20°-30°	1905.9	13.5
30°-40°	2290.9	16.2
40°-50°	2411.3	17.1
50°-60°	2237.4	15.9
60°-70°	1769.1	12.5
70°-80°	1080.6	7.7
80°-90°	470.8	3.3
90°-100°	146.6	1.0
100°-110°	32.9	0.2
110°-120°	13.2	0.1
120°-130°	7.4	0.1
130°-140°	2.0	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°	3636.7	25.8
0°-40°	5927.6	42.0
0°-60°	10576.3	75.0
0°-90°	13896.8	98.6
90°-120°	192.8	1.4
90°-150°	202.2	1.4
90°-180°	202.0	1.4
0°-180°	14099.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4680	4680	4680	4680	4680	
5°	4669	4659	4675	4728	4741	442
15°	4419	4589	4633	4480	4483	1245
25°	3986	4241	4047	4168	4236	1830
35°	3401	3495	3548	3870	4001	2125
45°	2779	2792	3021	3500	3630	2142
55°	2047	2080	2410	2937	3171	1839
65°	1296	1337	1698	2247	2451	1283
75°	490	649	947	1455	1546	535
85°	44	152	369	716	822	68
90°	1	46	194	454	535	2
95°	1	11	85	249	304	1
105°	1	7	17	49	69	1
115°	1	4	13	22	23	2
125°	1	2	6	14	20	2
135°	2	2	2	5	7	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: P518243

CATALOG NUMBER: HVL8-8-LD4-2STD-40-UNV-C-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4680.1	4680.1	4680.1	4680.1	4680.1
2.5°	4685.8	4673.4	4647.7	4672.5	4679.1
5°	4668.7	4659.1	4675.3	4727.8	4741.1
7.5°	4629.6	4665.8	4708.7	4804.0	4834.5
10°	4571.4	4640.1	4768.8	4849.8	4818.3
12.5°	4500.9	4617.2	4789.7	4631.5	4558.1
15°	4418.9	4588.6	4633.4	4479.9	4482.8
17.5°	4322.6	4564.7	4426.5	4422.7	4395.0
20°	4218.7	4484.7	4301.6	4294.0	4264.4
22.5°	4107.1	4378.8	4191.0	4175.8	4255.9
25°	3986.0	4240.6	4047.1	4168.1	4235.8
27.5°	3834.5	4059.5	3926.9	4098.5	4183.4
30°	3681.0	3872.6	3804.0	4043.2	4193.9
32.5°	3537.0	3677.2	3702.9	4022.3	4047.1
35°	3400.7	3495.1	3547.5	3869.7	4001.3
37.5°	3251.0	3276.7	3415.9	3805.9	3932.7
40°	3098.5	3082.3	3305.3	3701.0	3876.4
42.5°	2934.5	2928.8	3188.1	3648.6	3736.3
45°	2779.1	2791.5	3021.2	3499.8	3630.4
47.5°	2619.9	2636.1	2863.0	3336.8	3498.9
50°	2434.9	2455.9	2721.9	3191.9	3400.7
52.5°	2234.7	2274.7	2584.6	3054.6	3265.3
55°	2046.9	2080.3	2410.1	2937.3	3170.9
57.5°	1875.3	1895.3	2229.9	2789.6	2965.9
60°	1706.5	1711.3	2060.2	2625.6	2794.3
62.5°	1513.0	1521.6	1885.8	2432.1	2658.0
65°	1295.6	1336.6	1698.0	2247.1	2451.1
67.5°	1092.6	1164.1	1506.3	2077.4	2184.2
70°	875.2	996.3	1318.5	1878.1	1953.5
72.5°	675.9	818.0	1125.9	1655.1	1760.9
75°	490.0	649.2	946.7	1454.8	1546.4
77.5°	329.9	491.9	778.9	1233.7	1354.7
80°	197.3	359.4	629.2	1028.7	1165.0
82.5°	101.1	241.2	488.1	862.8	984.8
85°	43.9	152.5	369.0	716.0	821.8
87.5°	12.4	86.8	271.7	578.7	668.3
90°	1.0	45.8	193.5	453.8	534.8
92.5°	1.0	21.9	136.3	343.2	405.2
95°	1.0	11.4	84.9	248.8	304.1
97.5°	1.0	6.7	51.5	176.4	223.1
100°	1.0	5.7	30.5	117.3	159.2
102.5°	1.0	6.7	21.0	74.4	103.9
105°	1.0	6.7	17.2	48.6	68.6
107.5°	1.9	6.7	15.3	36.2	47.7
110°	1.0	5.7	16.2	27.6	37.2

TEST NUMBER: P518243

CATALOG NUMBER: HVL8-8-LD4-2STD-40-UNV-C-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.9	4.8	15.3	22.9	27.6
115°	1.0	3.8	13.3	21.9	22.9
117.5°	1.9	2.9	10.5	21.9	22.9
120°	1.9	1.9	8.6	21.0	23.8
122.5°	1.9	1.9	6.7	19.1	22.9
125°	1.0	1.9	5.7	14.3	20.0
127.5°	1.9	1.9	4.8	11.4	15.3
130°	1.9	1.9	3.8	8.6	11.4
132.5°	1.9	1.9	2.9	6.7	8.6
135°	1.9	1.9	1.9	4.8	6.7
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)