

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: P518140

Luminaire Tested: HVL8-4-LD4-3STD-30-UNV-C-EDD

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

Cooper Lighting Solutions laboratories have been accredited by National Voluntary Laboratory Accreditation Program (NVLAP) that it adheres to the requirements of ISO/IEC 17025:2005 and appropriate IESNA test methods. This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. Results contained in this report are valid for luminaire sample tested, as supplied by requestor. Information related to the luminaire tested has been supplied by requestor and can affect the validity of the test results. Report shall not be reproduced except in full without approval of Cooper Lighting Solutions Lighting Laboratory. Test performed at address noted above.

Test Information

Test Method: LM-79-2019
Report Number: P518140
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3STD-30-UNV-C-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10487.0 lumens
Efficiency: N/A
Efficacy: 109.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

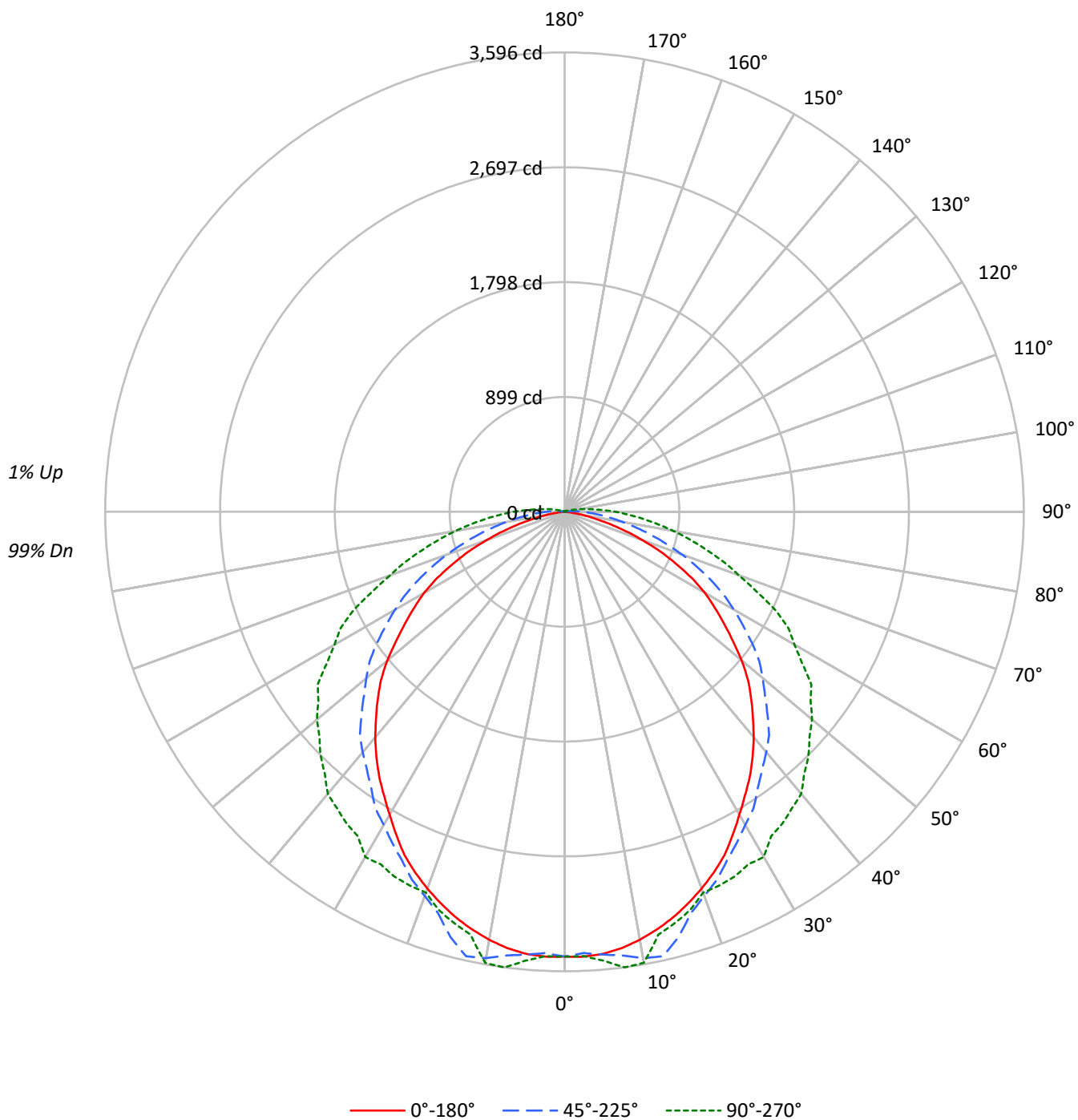
Input Watts (W): 95.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P518140

CATALOG NUMBER: HVL8-4-LD4-3STD-30-UNV-C-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P518140

CATALOG NUMBER: HVL8-4-LD4-3STD-30-UNV-C-EDD

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°	14051	14051	14051
5°	14019	13841	13983
10°	13835	14028	14069
15°	13583	13648	13059
20°	13278	12784	12488
25°	12953	12231	12567
30°	12461	11784	12705
35°	12111	11361	12480
40°	11734	11043	12558
45°	11328	10634	12332
50°	10835	10205	12238
55°	10113	9745	12231
60°	9557	9114	11709
65°	8449	8363	11335
70°	6894	7387	10165
75°	4919	6205	9279
80°	2760	5014	8331
85°	1023	3785	7338

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 12332 cd/sqm

TEST NUMBER: P518140

CATALOG NUMBER: HVL8-4-LD4-3STD-30-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	334.6	3.2
10°-20°	952.8	9.1
20°-30°	1417.6	13.5
30°-40°	1704.0	16.2
40°-50°	1793.6	17.1
50°-60°	1664.2	15.9
60°-70°	1315.9	12.5
70°-80°	803.8	7.7
80°-90°	350.2	3.3
90°-100°	109.0	1.0
100°-110°	24.5	0.2
110°-120°	9.8	0.1
120°-130°	5.5	0.1
130°-140°	1.5	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°	2705.0	25.8
0°-40°	4409.0	42.0
0°-60°	7866.8	75.0
0°-90°	10336.6	98.6
90°-120°	143.4	1.4
90°-150°	150.4	1.4
90°-180°	150.0	1.4
0°-180°	10487.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3481	3481	3481	3481	3481	
5°	3473	3466	3478	3517	3526	329
15°	3287	3413	3446	3332	3334	926
25°	2965	3154	3010	3100	3151	1361
35°	2530	2600	2639	2878	2976	1581
45°	2067	2076	2247	2603	2700	1593
55°	1522	1547	1793	2185	2359	1368
65°	964	994	1263	1671	1823	954
75°	364	483	704	1082	1150	398
85°	33	114	274	533	611	50
90°	1	34	144	338	398	2
95°	1	8	63	185	226	1
105°	1	5	13	36	51	1
115°	1	3	10	16	17	1
125°	1	1	4	11	15	1
135°	1	1	1	4	5	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: P518140

CATALOG NUMBER: HVL8-4-LD4-3STD-30-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3481.1	3481.1	3481.1	3481.1	3481.1
2.5°	3485.4	3476.1	3457.0	3475.4	3480.4
5°	3472.6	3465.5	3477.6	3516.6	3526.5
7.5°	3443.5	3470.5	3502.4	3573.3	3596.0
10°	3400.3	3451.3	3547.1	3607.3	3583.9
12.5°	3347.8	3434.3	3562.7	3444.9	3390.3
15°	3286.8	3413.0	3446.4	3332.2	3334.3
17.5°	3215.2	3395.3	3292.5	3289.6	3269.1
20°	3137.9	3335.7	3199.6	3193.9	3171.9
22.5°	3054.9	3257.0	3117.3	3106.0	3165.6
25°	2964.9	3154.2	3010.3	3100.3	3150.7
27.5°	2852.1	3019.5	2920.9	3048.5	3111.7
30°	2737.9	2880.5	2829.4	3007.4	3119.5
32.5°	2630.9	2735.1	2754.3	2991.8	3010.3
35°	2529.5	2599.7	2638.7	2878.4	2976.2
37.5°	2418.1	2437.3	2540.8	2830.8	2925.2
40°	2304.7	2292.6	2458.5	2752.8	2883.3
42.5°	2182.7	2178.4	2371.3	2713.8	2779.1
45°	2067.1	2076.3	2247.2	2603.2	2700.4
47.5°	1948.7	1960.7	2129.5	2482.0	2602.5
50°	1811.1	1826.7	2024.6	2374.2	2529.5
52.5°	1662.2	1692.0	1922.4	2272.0	2428.8
55°	1522.5	1547.3	1792.7	2184.8	2358.6
57.5°	1394.9	1409.7	1658.7	2074.9	2206.1
60°	1269.3	1272.9	1532.4	1952.9	2078.5
62.5°	1125.4	1131.8	1402.7	1809.0	1977.1
65°	963.7	994.2	1263.0	1671.4	1823.2
67.5°	812.7	865.8	1120.4	1545.2	1624.6
70°	651.0	741.0	980.7	1397.0	1453.0
72.5°	502.8	608.4	837.5	1231.0	1309.8
75°	364.5	482.9	704.2	1082.1	1150.2
77.5°	245.4	365.9	579.4	917.6	1007.7
80°	146.8	267.3	468.0	765.2	866.6
82.5°	75.2	179.4	363.1	641.8	732.5
85°	32.6	113.5	274.4	532.6	611.3
87.5°	9.2	64.5	202.1	430.4	497.1
90°	0.7	34.0	144.0	337.5	397.8
92.5°	0.7	16.3	101.4	255.3	301.4
95°	0.7	8.5	63.1	185.1	226.2
97.5°	0.7	5.0	38.3	131.2	165.9
100°	0.7	4.3	22.7	87.2	118.4
102.5°	0.7	5.0	15.6	55.3	77.3
105°	0.7	5.0	12.8	36.2	51.1
107.5°	1.4	5.0	11.3	26.9	35.5
110°	0.7	4.3	12.1	20.6	27.7

TEST NUMBER: P518140

CATALOG NUMBER: HVL8-4-LD4-3STD-30-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.4	3.5	11.3	17.0	20.6
115°	0.7	2.8	9.9	16.3	17.0
117.5°	1.4	2.1	7.8	16.3	17.0
120°	1.4	1.4	6.4	15.6	17.7
122.5°	1.4	1.4	5.0	14.2	17.0
125°	0.7	1.4	4.3	10.6	14.9
127.5°	1.4	1.4	3.5	8.5	11.3
130°	1.4	1.4	2.8	6.4	8.5
132.5°	1.4	1.4	2.1	5.0	6.4
135°	1.4	1.4	1.4	3.5	5.0
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)