

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: P518141

Luminaire Tested: HVL8-4-LD4-3STD-30-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: P518141
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-O-EDD-90
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9496.0 lumens
Efficiency: N/A
Efficacy: 99.4 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

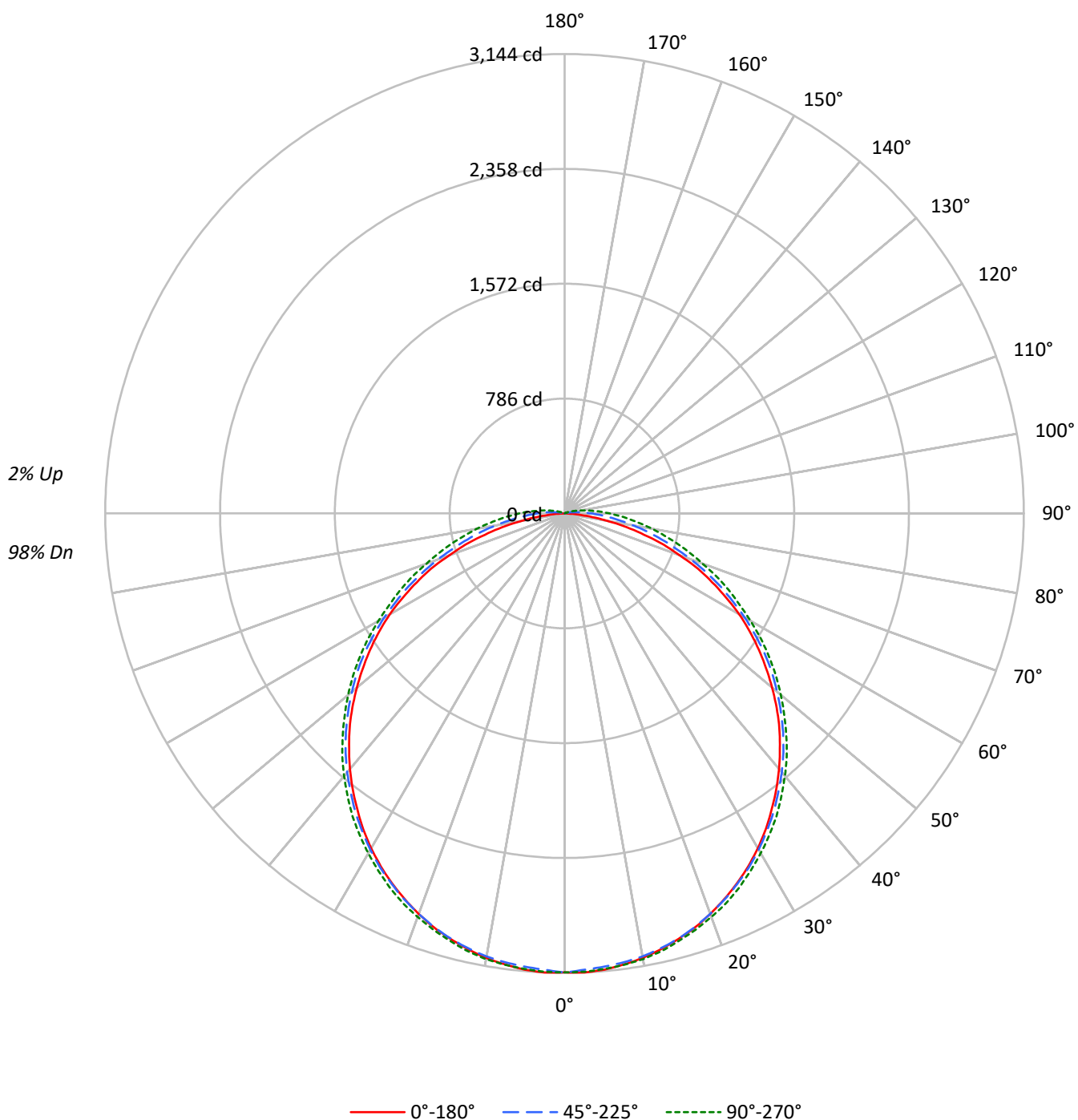
Input Watts (W): 95.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

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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	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101			98
1	108	102	98	94	105	100	96	92	95	92	89	91	88	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	77	73	79	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	52	62	56	51	60	54	50			47
5	75	61	52	45	72	60	52	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	40	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°	12677	12677	12677
5°	12652	12394	12407
10°	12568	12172	12158
15°	12459	11927	11860
20°	12343	11653	11570
25°	12204	11371	11275
30°	12043	11070	10940
35°	11840	10740	10609
40°	11629	10393	10222
45°	11401	10013	9805
50°	11104	9576	9356
55°	10785	9096	8861
60°	10403	8473	8283
65°	9783	7775	7710
70°	8891	6955	7044
75°	7624	6055	6439
80°	5734	5171	5886
85°	3065	4279	5360

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 11401 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	297.2	3.1
10°-20°	852.5	9.0
20°-30°	1293.6	13.6
30°-40°	1564.1	16.5
40°-50°	1632.0	17.2
50°-60°	1492.2	15.7
60°-70°	1163.2	12.2
70°-80°	727.7	7.7
80°-90°	330.5	3.5
90°-100°	110.8	1.2
100°-110°	27.8	0.3
110°-120°	4.4	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°	2443.3	25.7
0°-40°	4007.4	42.2
0°-60°	7131.6	75.1
0°-90°	9353.0	98.5
90°-120°	143.0	1.5
90°-150°	143.0	1.5
90°-180°	143.0	1.5
0°-180°	9496.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3141	3141	3141	3141	3141	
5°	3134	3128	3114	3129	3129	298
15°	3015	3020	3012	3029	3028	851
25°	2794	2796	2799	2822	2827	1287
35°	2473	2484	2494	2520	2530	1548
45°	2080	2099	2116	2137	2147	1603
55°	1624	1643	1673	1698	1709	1451
65°	1116	1135	1174	1221	1240	1104
75°	565	600	687	769	798	602
85°	98	181	310	410	446	124
90°	1	67	183	275	308	4
95°	1	18	95	172	198	1
105°	2	2	16	46	62	2
115°	2	2	3	8	12	1
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

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3140.7	3140.7	3140.7	3140.7	3140.7
2.5°	3144.4	3140.0	3125.9	3140.0	3139.2
5°	3134.0	3128.1	3114.0	3128.9	3128.9
7.5°	3113.3	3111.1	3098.5	3115.5	3115.5
10°	3088.9	3088.1	3077.8	3096.3	3097.0
12.5°	3054.8	3057.8	3048.2	3065.9	3068.1
15°	3014.8	3020.0	3011.9	3028.9	3028.2
17.5°	2971.2	2974.1	2968.2	2987.4	2986.7
20°	2917.1	2920.8	2916.4	2936.4	2938.6
22.5°	2857.1	2862.3	2861.6	2882.3	2888.2
25°	2793.5	2795.7	2798.6	2822.3	2826.8
27.5°	2723.1	2726.8	2732.0	2753.5	2757.9
30°	2646.1	2652.1	2658.0	2680.2	2686.1
32.5°	2564.7	2570.6	2578.0	2606.9	2609.8
35°	2472.9	2484.0	2494.3	2519.5	2529.9
37.5°	2381.1	2395.1	2404.8	2431.4	2439.6
40°	2284.1	2298.1	2313.7	2341.8	2347.0
42.5°	2182.6	2198.9	2217.4	2242.6	2251.5
45°	2080.5	2099.0	2116.0	2136.7	2147.1
47.5°	1970.2	1988.7	2009.4	2033.1	2039.8
50°	1856.1	1877.6	1899.8	1922.0	1933.9
52.5°	1739.2	1765.1	1790.2	1813.9	1825.0
55°	1623.7	1642.9	1673.3	1697.7	1708.8
57.5°	1503.7	1520.0	1547.4	1587.4	1593.3
60°	1381.6	1396.4	1424.5	1457.1	1470.4
62.5°	1246.8	1266.8	1296.4	1337.9	1349.7
65°	1115.8	1135.0	1174.2	1220.9	1240.1
67.5°	989.2	995.8	1046.2	1095.0	1126.1
70°	839.6	864.8	923.3	983.2	1006.9
72.5°	710.8	735.9	800.4	870.7	900.3
75°	564.9	599.7	687.1	769.3	798.1
77.5°	436.8	475.3	583.4	666.3	699.7
80°	305.0	365.0	482.7	576.0	612.3
82.5°	191.8	265.8	391.7	489.4	521.2
85°	97.7	180.7	310.2	410.2	446.5
87.5°	25.9	117.0	241.4	336.9	373.9
90°	0.7	67.4	182.9	274.7	308.0
92.5°	0.7	37.8	136.2	218.4	252.5
95°	0.7	17.8	94.8	171.8	198.4
97.5°	0.7	7.4	65.2	129.6	156.2
100°	0.7	3.7	41.5	94.0	117.0
102.5°	1.5	2.2	25.9	67.4	85.9
105°	1.5	2.2	15.5	45.9	61.5
107.5°	1.5	2.2	8.9	31.1	42.2
110°	2.2	2.2	5.2	19.2	28.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.2	2.2	3.0	12.6	18.5
115°	2.2	2.2	3.0	8.1	11.8
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)