

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: P517583

Luminaire Tested: HVL12-8-LD4-1HI-35-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: P517583
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-1HI-35-UNV-C-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9876.0 lumens
Efficiency: N/A
Efficacy: 111.8 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

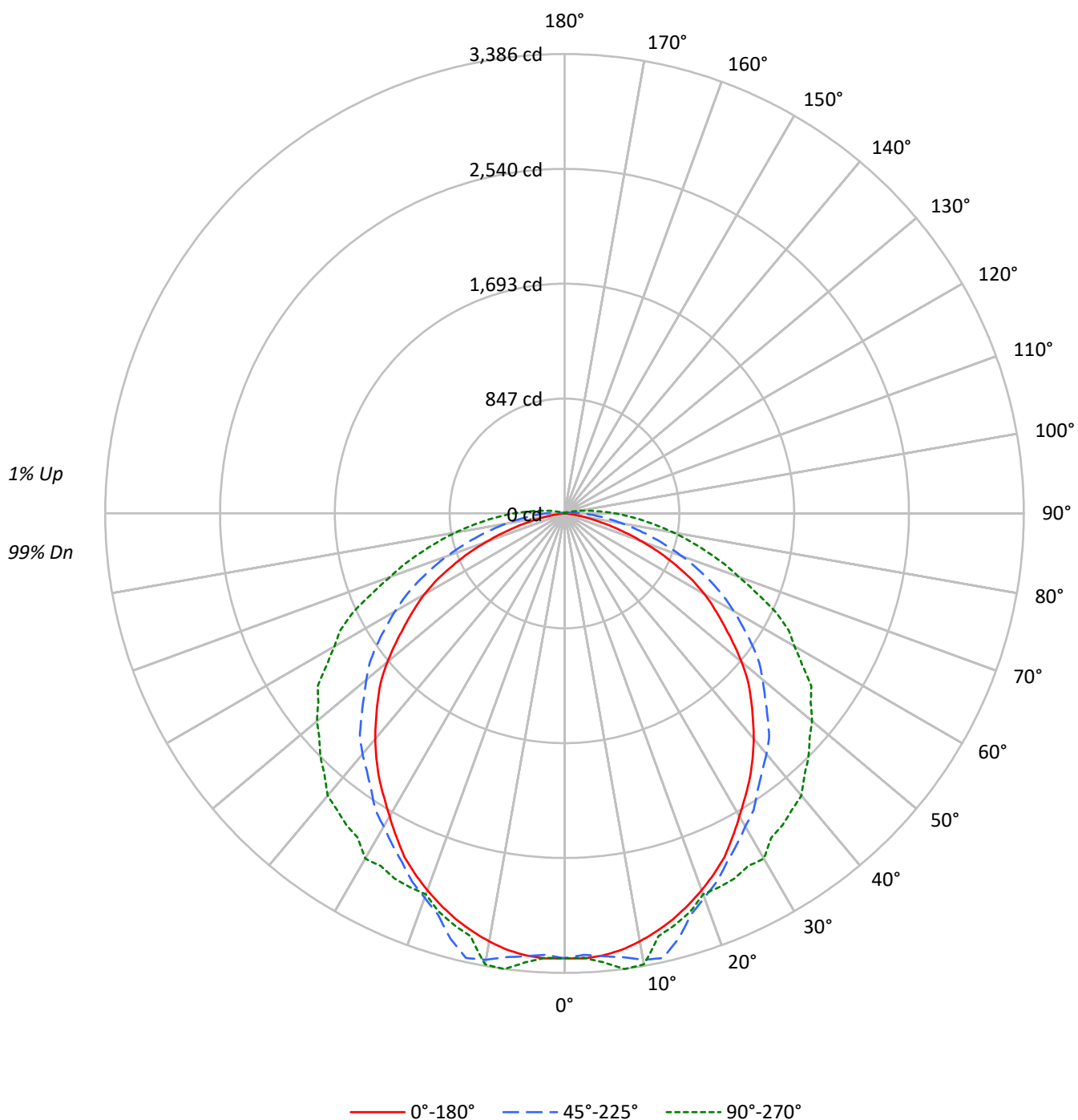
Input Watts (W): 88.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

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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			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°	4411	4411	4411
5°	4409	4373	4421
10°	4359	4460	4480
15°	4288	4366	4187
20°	4199	4116	4032
25°	4105	3964	4087
30°	3958	3845	4163
35°	3856	3735	4123
40°	3747	3659	4184
45°	3629	3555	4147
50°	3484	3446	4160
55°	3266	3330	4208
60°	3105	3158	4087
65°	2766	2948	4027
70°	2281	2663	3692
75°	1656	2306	3471
80°	958	1949	3250
85°	383	1586	3059

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 4208 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	315.1	3.2
10°-20°	897.3	9.1
20°-30°	1335.0	13.5
30°-40°	1604.7	16.2
40°-50°	1689.1	17.1
50°-60°	1567.3	15.9
60°-70°	1239.2	12.5
70°-80°	757.0	7.7
80°-90°	329.8	3.3
90°-100°	102.7	1.0
100°-110°	23.1	0.2
110°-120°	9.3	0.1
120°-130°	5.2	0.1
130°-140°	1.4	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°	2547.4	25.8
0°-40°	4152.1	42.0
0°-60°	7408.4	75.0
0°-90°	9734.4	98.6
90°-120°	135.0	1.4
90°-150°	141.6	1.4
90°-180°	142.0	1.4
0°-180°	9876.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3278	3278	3278	3278	3278	
5°	3270	3264	3275	3312	3321	310
15°	3095	3214	3246	3138	3140	872
25°	2792	2970	2835	2920	2967	1282
35°	2382	2448	2485	2711	2803	1489
45°	1947	1955	2116	2452	2543	1501
55°	1434	1457	1688	2058	2221	1288
65°	908	936	1189	1574	1717	899
75°	343	455	663	1019	1083	375
85°	31	107	258	502	576	48
90°	1	32	136	318	375	1
95°	1	8	59	174	213	1
105°	1	5	12	34	48	1
115°	1	3	9	15	16	1
125°	1	1	4	10	14	1
135°	1	1	1	3	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

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	3278.3	3278.3	3278.3	3278.3	3278.3
2.5°	3282.3	3273.6	3255.6	3273.0	3277.6
5°	3270.3	3263.6	3275.0	3311.7	3321.0
7.5°	3242.9	3268.3	3298.3	3365.1	3386.5
10°	3202.2	3250.2	3340.4	3397.2	3375.1
12.5°	3152.7	3234.2	3355.1	3244.2	3192.8
15°	3095.3	3214.2	3245.6	3138.1	3140.1
17.5°	3027.9	3197.5	3100.7	3098.0	3078.6
20°	2955.1	3141.4	3013.2	3007.8	2987.1
22.5°	2876.9	3067.3	2935.7	2925.0	2981.1
25°	2792.1	2970.4	2834.9	2919.7	2967.1
27.5°	2685.9	2843.5	2750.7	2870.9	2930.4
30°	2578.4	2712.7	2664.6	2832.2	2937.7
32.5°	2477.6	2575.8	2593.8	2817.5	2834.9
35°	2382.1	2448.2	2484.9	2710.7	2802.8
37.5°	2277.2	2295.3	2392.8	2665.9	2754.7
40°	2170.4	2159.0	2315.3	2592.5	2715.3
42.5°	2055.5	2051.5	2233.2	2555.7	2617.2
45°	1946.7	1955.4	2116.3	2451.5	2543.0
47.5°	1835.2	1846.5	2005.4	2337.3	2450.9
50°	1705.6	1720.3	1906.6	2235.8	2382.1
52.5°	1565.4	1593.4	1810.4	2139.7	2287.3
55°	1433.8	1457.2	1688.2	2057.5	2221.1
57.5°	1313.6	1327.6	1562.0	1954.0	2077.6
60°	1195.4	1198.7	1443.1	1839.2	1957.4
62.5°	1059.8	1065.8	1320.9	1703.6	1861.9
65°	907.6	936.3	1189.4	1574.0	1716.9
67.5°	765.3	815.4	1055.1	1455.2	1530.0
70°	613.1	697.9	923.6	1315.6	1368.3
72.5°	473.5	573.0	788.7	1159.3	1233.5
75°	343.3	454.8	663.1	1019.1	1083.2
77.5°	231.1	344.6	545.6	864.2	949.0
80°	138.2	251.8	440.8	720.6	816.1
82.5°	70.8	169.0	341.9	604.4	689.9
85°	30.7	106.9	258.4	501.5	575.7
87.5°	8.7	60.8	190.3	405.4	468.1
90°	0.7	32.1	135.6	317.9	374.6
92.5°	0.7	15.4	95.5	240.4	283.8
95°	0.7	8.0	59.4	174.3	213.0
97.5°	0.7	4.7	36.1	123.5	156.3
100°	0.7	4.0	21.4	82.1	111.5
102.5°	0.7	4.7	14.7	52.1	72.8
105°	0.7	4.7	12.0	34.1	48.1
107.5°	1.3	4.7	10.7	25.4	33.4
110°	0.7	4.0	11.4	19.4	26.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.3	3.3	10.7	16.0	19.4
115°	0.7	2.7	9.3	15.4	16.0
117.5°	1.3	2.0	7.3	15.4	16.0
120°	1.3	1.3	6.0	14.7	16.7
122.5°	1.3	1.3	4.7	13.4	16.0
125°	0.7	1.3	4.0	10.0	14.0
127.5°	1.3	1.3	3.3	8.0	10.7
130°	1.3	1.3	2.7	6.0	8.0
132.5°	1.3	1.3	2.0	4.7	6.0
135°	1.3	1.3	1.3	3.3	4.7
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)