

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: P517769

Luminaire Tested: HVL8-1-LD4-1STD-50-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: P517769
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-1STD-50-UNV-O-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 855.1 lumens
Efficiency: N/A
Efficacy: 104.3 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

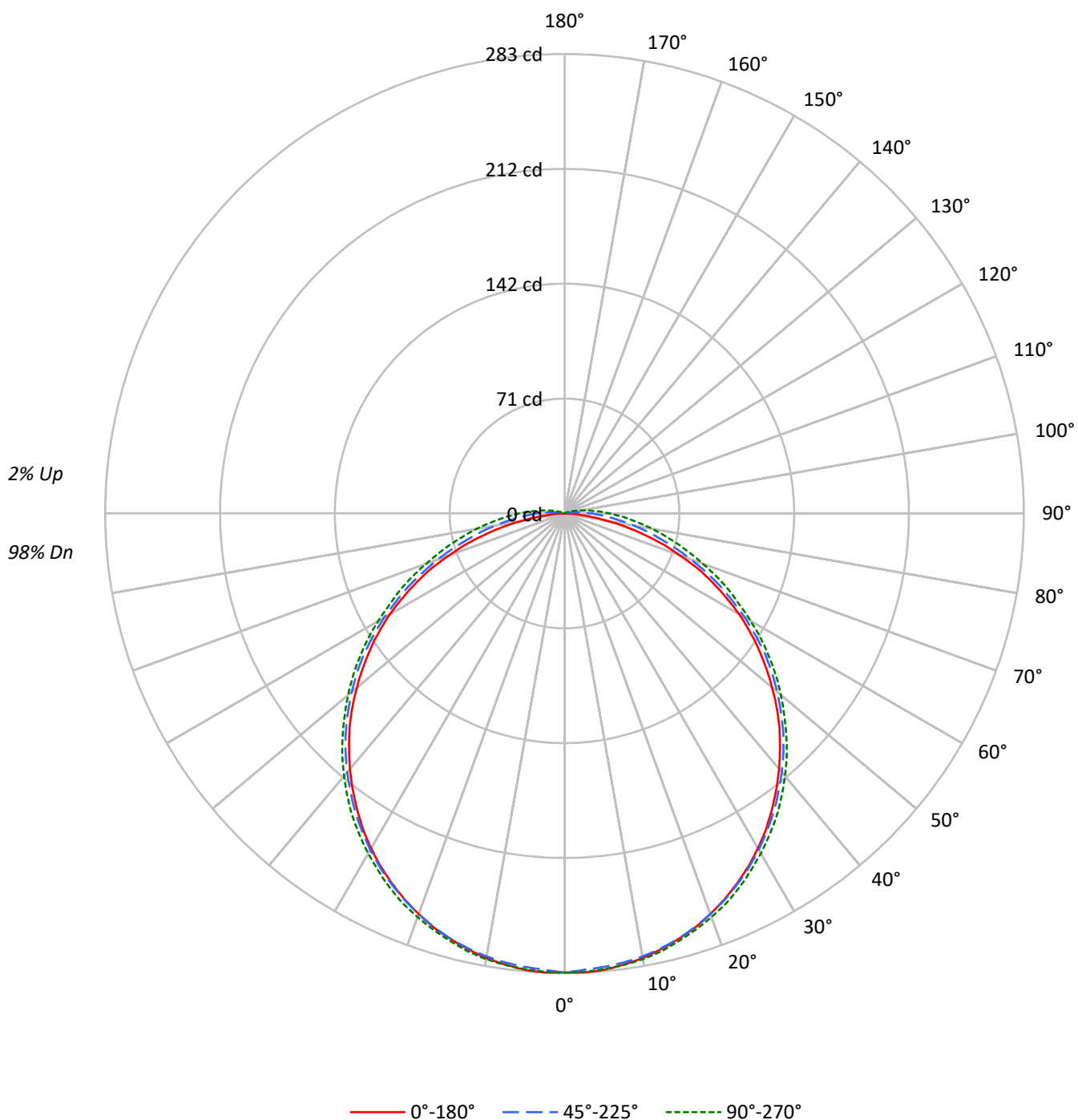
Input Watts (W): 8.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	4566	4566	4566
5°	4508	4430	4468
10°	4429	4319	4378
15°	4343	4201	4271
20°	4256	4075	4167
25°	4157	3947	4060
30°	4053	3813	3941
35°	3931	3670	3821
40°	3804	3520	3681
45°	3666	3360	3531
50°	3502	3181	3369
55°	3324	2986	3192
60°	3117	2743	2983
65°	2828	2474	2778
70°	2448	2168	2538
75°	1957	1839	2320
80°	1314	1514	2119
85°	561	1183	1930

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3666 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	26.8	3.1
10°-20°	76.8	9.0
20°-30°	116.5	13.6
30°-40°	140.8	16.5
40°-50°	147.0	17.2
50°-60°	134.4	15.7
60°-70°	104.7	12.3
70°-80°	65.5	7.7
80°-90°	29.8	3.5
90°-100°	10.0	1.2
100°-110°	2.5	0.3
110°-120°	0.4	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°	220.0	25.7
0°-40°	360.8	42.2
0°-60°	642.1	75.1
0°-90°	842.2	98.5
90°-120°	12.9	1.5
90°-150°	12.9	1.5
90°-180°	13.0	1.5
0°-180°	855.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	283	283	283	283	283	
5°	282	282	280	282	282	27
15°	271	272	271	273	273	77
25°	252	252	252	254	254	116
35°	223	224	225	227	228	139
45°	187	189	190	192	193	144
55°	146	148	151	153	154	131
65°	100	102	106	110	112	99
75°	51	54	62	69	72	54
85°	9	16	28	37	40	11
90°	0	6	16	25	28	0
95°	0	2	8	16	18	0
105°	0	0	1	4	6	0
115°	0	0	0	1	1	0
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°	282.8	282.8	282.8	282.8	282.8
2.5°	283.1	282.7	281.4	282.7	282.6
5°	282.2	281.6	280.4	281.7	281.7
7.5°	280.3	280.1	279.0	280.5	280.5
10°	278.1	278.0	277.1	278.8	278.8
12.5°	275.0	275.3	274.4	276.0	276.2
15°	271.4	271.9	271.2	272.7	272.6
17.5°	267.5	267.8	267.2	269.0	268.9
20°	262.7	263.0	262.6	264.4	264.6
22.5°	257.3	257.7	257.7	259.5	260.1
25°	251.5	251.7	252.0	254.1	254.5
27.5°	245.2	245.5	246.0	247.9	248.3
30°	238.3	238.8	239.3	241.3	241.9
32.5°	230.9	231.5	232.1	234.7	235.0
35°	222.7	223.7	224.6	226.9	227.8
37.5°	214.4	215.7	216.5	218.9	219.7
40°	205.7	206.9	208.3	210.9	211.3
42.5°	196.5	198.0	199.7	201.9	202.7
45°	187.3	189.0	190.5	192.4	193.3
47.5°	177.4	179.1	180.9	183.1	183.7
50°	167.1	169.1	171.1	173.1	174.1
52.5°	156.6	158.9	161.2	163.3	164.3
55°	146.2	147.9	150.7	152.9	153.9
57.5°	135.4	136.9	139.3	142.9	143.5
60°	124.4	125.7	128.3	131.2	132.4
62.5°	112.3	114.1	116.7	120.5	121.5
65°	100.5	102.2	105.7	109.9	111.7
67.5°	89.1	89.7	94.2	98.6	101.4
70°	75.6	77.9	83.1	88.5	90.7
72.5°	64.0	66.3	72.1	78.4	81.1
75°	50.9	54.0	61.9	69.3	71.9
77.5°	39.3	42.8	52.5	60.0	63.0
80°	27.5	32.9	43.5	51.9	55.1
82.5°	17.3	23.9	35.3	44.1	46.9
85°	8.8	16.3	27.9	36.9	40.2
87.5°	2.3	10.5	21.7	30.3	33.7
90°	0.1	6.1	16.5	24.7	27.7
92.5°	0.1	3.4	12.3	19.7	22.7
95°	0.1	1.6	8.5	15.5	17.9
97.5°	0.1	0.7	5.9	11.7	14.1
100°	0.1	0.3	3.7	8.5	10.5
102.5°	0.1	0.2	2.3	6.1	7.7
105°	0.1	0.2	1.4	4.1	5.5
107.5°	0.1	0.2	0.8	2.8	3.8
110°	0.2	0.2	0.5	1.7	2.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.2	0.3	1.1	1.7
115°	0.2	0.2	0.3	0.7	1.1
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)