

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: P517759

Luminaire Tested: HVL8-1-LD4-1STD-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: P517759
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-1STD-35-UNV-C-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 769.0 lumens
Efficiency: N/A
Efficacy: 93.8 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

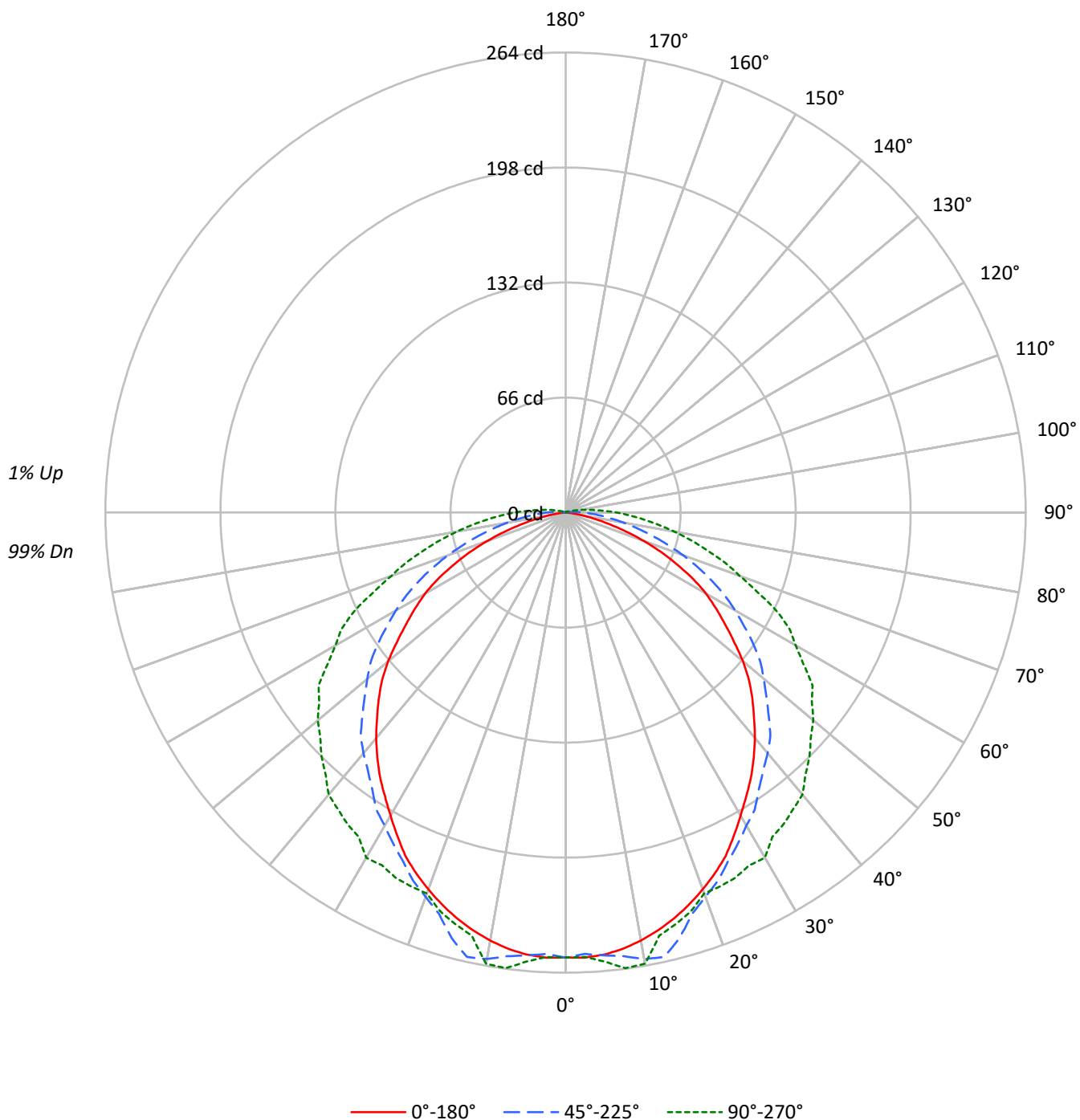
Input Watts (W): 8.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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
RCR																	
0	119	119	119	119	116	116	116	116	110	110	110		105	105	105		101
1	108	103	98	94	105	100	96	92	96	92	89		91	89	86		87
2	98	89	82	76	95	87	80	75	83	78	73		80	75	71		76
3	89	78	69	63	86	76	68	62	73	66	61		70	64	59		67
4	81	69	60	53	79	67	59	52	65	57	51		62	56	51		60
5	75	61	52	45	72	60	51	45	58	50	44		56	49	44		54
6	69	55	46	39	67	54	46	39	52	44	39		50	44	38		49
7	64	50	41	35	62	49	41	35	47	40	34		46	39	34		44
8	59	46	37	31	58	45	37	31	43	36	31		42	35	30		41
9	55	42	33	28	54	41	33	28	40	33	28		39	32	27		38
10	52	39	31	25	51	38	30	25	37	30	25		36	29	25		35

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4122	4122	4122
5°	4067	4029	4102
10°	3971	4054	4127
15°	3856	3915	3830
20°	3727	3640	3663
25°	3594	3457	3686
30°	3415	3306	3726
35°	3274	3162	3660
40°	3125	3047	3683
45°	2967	2906	3617
50°	2783	2761	3590
55°	2537	2605	3588
60°	2333	2403	3434
65°	1990	2168	3325
70°	1544	1876	2980
75°	1027	1533	2720
80°	516	1194	2442
85°	153	852	2151

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 3617 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.5	3.2
10°-20°	69.9	9.1
20°-30°	103.9	13.5
30°-40°	125.0	16.2
40°-50°	131.5	17.1
50°-60°	122.0	15.9
60°-70°	96.5	12.5
70°-80°	58.9	7.7
80°-90°	25.7	3.3
90°-100°	8.0	1.0
100°-110°	1.8	0.2
110°-120°	0.7	0.1
120°-130°	0.4	0.1
130°-140°	0.1	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°	198.3	25.8
0°-40°	323.3	42.0
0°-60°	576.9	75.0
0°-90°	758.0	98.6
90°-120°	10.5	1.4
90°-150°	11.1	1.4
90°-180°	11.0	1.4
0°-180°	769.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	255	255	255	255	255	
5°	255	254	255	258	259	24
15°	241	250	253	244	244	68
25°	217	231	221	227	231	100
35°	186	191	194	211	218	116
45°	152	152	165	191	198	117
55°	112	114	132	160	173	100
65°	71	73	93	123	134	70
75°	27	35	52	79	84	29
85°	2	8	20	39	45	4
90°	0	2	11	25	29	0
95°	0	1	5	14	17	0
105°	0	0	1	3	4	0
115°	0	0	1	1	1	0
125°	0	0	0	1	1	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°	255.3	255.3	255.3	255.3	255.3
2.5°	255.6	254.9	253.5	254.9	255.2
5°	254.6	254.1	255.0	257.9	258.6
7.5°	252.5	254.5	256.8	262.0	263.7
10°	249.3	253.1	260.1	264.5	262.8
12.5°	245.5	251.8	261.2	252.6	248.6
15°	241.0	250.3	252.7	244.3	244.5
17.5°	235.8	249.0	241.4	241.2	239.7
20°	230.1	244.6	234.6	234.2	232.6
22.5°	224.0	238.8	228.6	227.8	232.1
25°	217.4	231.3	220.7	227.3	231.0
27.5°	209.1	221.4	214.2	223.5	228.2
30°	200.8	211.2	207.5	220.5	228.7
32.5°	192.9	200.6	202.0	219.4	220.7
35°	185.5	190.6	193.5	211.1	218.2
37.5°	177.3	178.7	186.3	207.6	214.5
40°	169.0	168.1	180.3	201.9	211.4
42.5°	160.1	159.7	173.9	199.0	203.8
45°	151.6	152.3	164.8	190.9	198.0
47.5°	142.9	143.8	156.2	182.0	190.8
50°	132.8	134.0	148.5	174.1	185.5
52.5°	121.9	124.1	141.0	166.6	178.1
55°	111.6	113.5	131.5	160.2	173.0
57.5°	102.3	103.4	121.6	152.2	161.8
60°	93.1	93.3	112.4	143.2	152.4
62.5°	82.5	83.0	102.9	132.7	145.0
65°	70.7	72.9	92.6	122.6	133.7
67.5°	59.6	63.5	82.2	113.3	119.1
70°	47.7	54.3	71.9	102.4	106.5
72.5°	36.9	44.6	61.4	90.3	96.0
75°	26.7	35.4	51.6	79.4	84.3
77.5°	18.0	26.8	42.5	67.3	73.9
80°	10.8	19.6	34.3	56.1	63.5
82.5°	5.5	13.2	26.6	47.1	53.7
85°	2.4	8.3	20.1	39.1	44.8
87.5°	0.7	4.7	14.8	31.6	36.5
90°	0.1	2.5	10.6	24.8	29.2
92.5°	0.1	1.2	7.4	18.7	22.1
95°	0.1	0.6	4.6	13.6	16.6
97.5°	0.1	0.4	2.8	9.6	12.2
100°	0.1	0.3	1.7	6.4	8.7
102.5°	0.1	0.4	1.1	4.1	5.7
105°	0.1	0.4	0.9	2.7	3.7
107.5°	0.1	0.4	0.8	2.0	2.6
110°	0.1	0.3	0.9	1.5	2.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.3	0.8	1.2	1.5
115°	0.1	0.2	0.7	1.2	1.2
117.5°	0.1	0.2	0.6	1.2	1.2
120°	0.1	0.1	0.5	1.1	1.3
122.5°	0.1	0.1	0.4	1.0	1.2
125°	0.1	0.1	0.3	0.8	1.1
127.5°	0.1	0.1	0.3	0.6	0.8
130°	0.1	0.1	0.2	0.5	0.6
132.5°	0.1	0.1	0.2	0.4	0.5
135°	0.1	0.1	0.1	0.3	0.4
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)