

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: P517755

Luminaire Tested: HVL8-1-LD4-1STD-30-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: P517755
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-1STD-30-UNV-C-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 759.0 lumens
Efficiency: N/A
Efficacy: 92.6 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

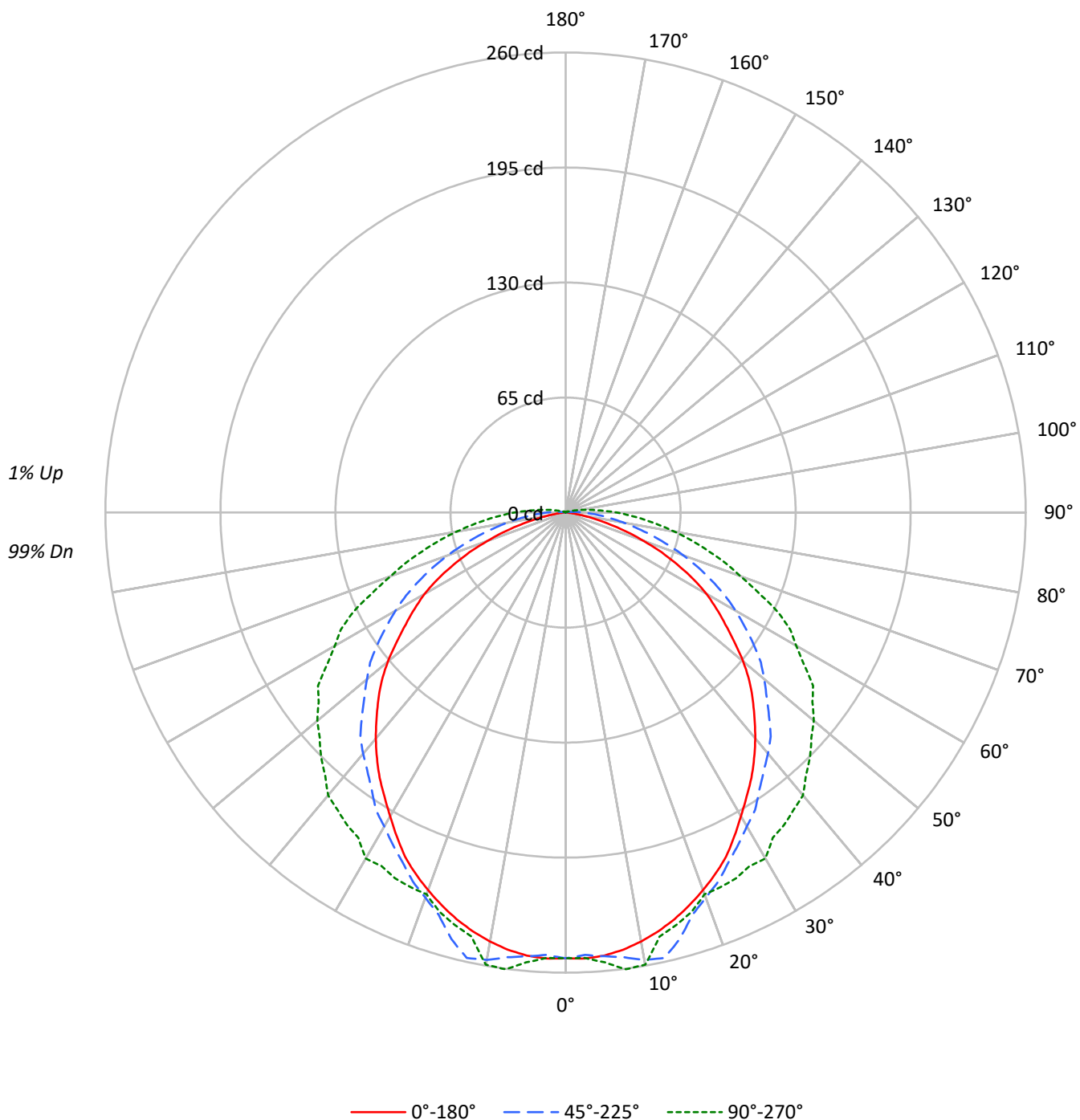
Input Watts (W): 8.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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	44	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°	4067	4067	4067
5°	4014	3977	4048
10°	3920	4001	4073
15°	3807	3864	3780
20°	3679	3594	3616
25°	3547	3413	3638
30°	3371	3263	3679
35°	3232	3121	3613
40°	3084	3006	3636
45°	2928	2868	3569
50°	2747	2723	3543
55°	2506	2570	3541
60°	2303	2371	3389
65°	1962	2140	3283
70°	1525	1852	2944
75°	1015	1515	2685
80°	507	1180	2411
85°	153	844	2122

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 3569 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.2	3.2
10°-20°	69.0	9.1
20°-30°	102.6	13.5
30°-40°	123.3	16.2
40°-50°	129.8	17.1
50°-60°	120.4	15.9
60°-70°	95.2	12.5
70°-80°	58.2	7.7
80°-90°	25.3	3.3
90°-100°	7.9	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°	195.8	25.8
0°-40°	319.1	42.0
0°-60°	569.3	75.0
0°-90°	748.1	98.6
90°-120°	10.4	1.4
90°-150°	10.9	1.4
90°-180°	11.0	1.4
0°-180°	759.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	252	252	252	252	252	
5°	251	251	252	254	255	24
15°	238	247	249	241	241	67
25°	215	228	218	224	228	99
35°	183	188	191	208	215	114
45°	150	150	163	188	195	115
55°	110	112	130	158	171	99
65°	70	72	91	121	132	69
75°	26	35	51	78	83	29
85°	2	8	20	38	44	4
90°	0	2	10	24	29	0
95°	0	1	5	13	16	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°	251.9	251.9	251.9	251.9	251.9
2.5°	252.3	251.6	250.2	251.5	251.9
5°	251.3	250.8	251.7	254.5	255.2
7.5°	249.2	251.2	253.5	258.6	260.3
10°	246.1	249.8	256.7	261.1	259.4
12.5°	242.3	248.6	257.8	249.3	245.4
15°	237.9	247.0	249.4	241.2	241.3
17.5°	232.7	245.7	238.3	238.1	236.6
20°	227.1	241.4	231.6	231.2	229.6
22.5°	221.1	235.7	225.6	224.8	229.1
25°	214.6	228.3	217.9	224.4	228.0
27.5°	206.4	218.5	211.4	220.6	225.2
30°	198.2	208.5	204.8	217.7	225.8
32.5°	190.4	198.0	199.3	216.5	217.9
35°	183.1	188.2	191.0	208.3	215.4
37.5°	175.0	176.4	183.9	204.9	211.7
40°	166.8	165.9	177.9	199.2	208.7
42.5°	158.0	157.7	171.6	196.4	201.1
45°	149.6	150.3	162.6	188.4	195.4
47.5°	141.0	141.9	154.1	179.6	188.4
50°	131.1	132.2	146.5	171.8	183.1
52.5°	120.3	122.5	139.1	164.4	175.8
55°	110.2	112.0	129.7	158.1	170.7
57.5°	101.0	102.0	120.0	150.2	159.7
60°	91.9	92.1	110.9	141.3	150.4
62.5°	81.5	81.9	101.5	130.9	143.1
65°	69.7	72.0	91.4	121.0	132.0
67.5°	58.8	62.7	81.1	111.8	117.6
70°	47.1	53.6	71.0	101.1	105.2
72.5°	36.4	44.0	60.6	89.1	94.8
75°	26.4	35.0	51.0	78.3	83.2
77.5°	17.8	26.5	41.9	66.4	72.9
80°	10.6	19.3	33.9	55.4	62.7
82.5°	5.4	13.0	26.3	46.4	53.0
85°	2.4	8.2	19.9	38.5	44.2
87.5°	0.7	4.7	14.6	31.2	36.0
90°	0.1	2.5	10.4	24.4	28.8
92.5°	0.1	1.2	7.3	18.5	21.8
95°	0.1	0.6	4.6	13.4	16.4
97.5°	0.1	0.4	2.8	9.5	12.0
100°	0.1	0.3	1.6	6.3	8.6
102.5°	0.1	0.4	1.1	4.0	5.6
105°	0.1	0.4	0.9	2.6	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)