

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: P517761

Luminaire Tested: HVL8-1-LD4-1STD-35-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: P517761
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-O-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: 832.0 lumens
Efficiency: N/A
Efficacy: 101.5 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

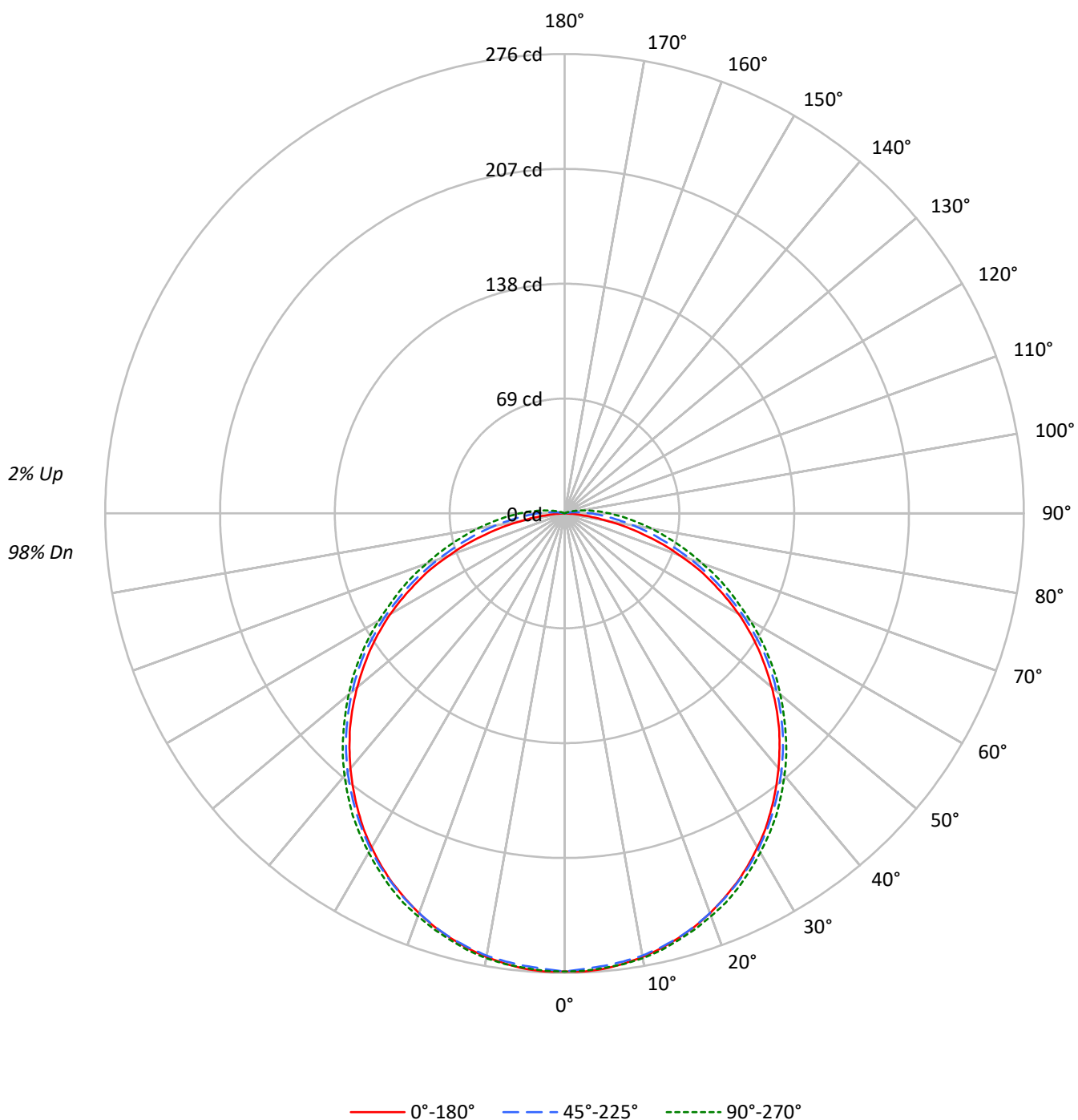
Input Watts (W): 8.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	4443	4443	4443
5°	4387	4310	4347
10°	4310	4203	4260
15°	4226	4088	4156
20°	4141	3965	4055
25°	4047	3840	3952
30°	3942	3711	3833
35°	3825	3570	3719
40°	3700	3425	3582
45°	3568	3270	3436
50°	3407	3095	3278
55°	3235	2904	3105
60°	3032	2668	2902
65°	2752	2409	2703
70°	2383	2110	2468
75°	1904	1788	2256
80°	1276	1472	2061
85°	548	1154	1877

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3568 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	26.0	3.1
10°-20°	74.7	9.0
20°-30°	113.3	13.6
30°-40°	137.0	16.5
40°-50°	143.0	17.2
50°-60°	130.7	15.7
60°-70°	101.9	12.2
70°-80°	63.8	7.7
80°-90°	29.0	3.5
90°-100°	9.7	1.2
100°-110°	2.4	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°	214.1	25.7
0°-40°	351.1	42.2
0°-60°	624.8	75.1
0°-90°	819.5	98.5
90°-120°	12.5	1.5
90°-150°	12.5	1.5
90°-180°	13.0	1.6
0°-180°	832.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	275	275	275	275	275	
5°	275	274	273	274	274	26
15°	264	265	264	265	265	75
25°	245	245	245	247	248	113
35°	217	218	218	221	222	136
45°	182	184	185	187	188	140
55°	142	144	147	149	150	127
65°	98	99	103	107	109	97
75°	50	52	60	67	70	53
85°	9	16	27	36	39	11
90°	0	6	16	24	27	0
95°	0	2	8	15	17	0
105°	0	0	1	4	5	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°	275.2	275.2	275.2	275.2	275.2
2.5°	275.5	275.1	273.9	275.1	275.0
5°	274.6	274.1	272.8	274.1	274.1
7.5°	272.8	272.6	271.5	273.0	273.0
10°	270.6	270.6	269.7	271.3	271.3
12.5°	267.7	267.9	267.1	268.6	268.8
15°	264.1	264.6	263.9	265.4	265.3
17.5°	260.3	260.6	260.1	261.7	261.7
20°	255.6	255.9	255.5	257.3	257.5
22.5°	250.3	250.8	250.7	252.5	253.1
25°	244.8	244.9	245.2	247.3	247.7
27.5°	238.6	238.9	239.4	241.2	241.6
30°	231.8	232.4	232.9	234.8	235.3
32.5°	224.7	225.2	225.9	228.4	228.7
35°	216.7	217.6	218.5	220.8	221.7
37.5°	208.6	209.9	210.7	213.0	213.7
40°	200.1	201.4	202.7	205.2	205.6
42.5°	191.2	192.7	194.3	196.5	197.3
45°	182.3	183.9	185.4	187.2	188.1
47.5°	172.6	174.2	176.1	178.1	178.7
50°	162.6	164.5	166.5	168.4	169.4
52.5°	152.4	154.6	156.9	158.9	159.9
55°	142.3	143.9	146.6	148.7	149.7
57.5°	131.7	133.2	135.6	139.1	139.6
60°	121.0	122.3	124.8	127.7	128.8
62.5°	109.2	111.0	113.6	117.2	118.3
65°	97.8	99.4	102.9	107.0	108.7
67.5°	86.7	87.2	91.7	95.9	98.7
70°	73.6	75.8	80.9	86.1	88.2
72.5°	62.3	64.5	70.1	76.3	78.9
75°	49.5	52.5	60.2	67.4	69.9
77.5°	38.3	41.6	51.1	58.4	61.3
80°	26.7	32.0	42.3	50.5	53.6
82.5°	16.8	23.3	34.3	42.9	45.7
85°	8.6	15.8	27.2	35.9	39.1
87.5°	2.3	10.2	21.1	29.5	32.8
90°	0.1	5.9	16.0	24.1	27.0
92.5°	0.1	3.3	11.9	19.1	22.1
95°	0.1	1.6	8.3	15.0	17.4
97.5°	0.1	0.6	5.7	11.4	13.7
100°	0.1	0.3	3.6	8.2	10.2
102.5°	0.1	0.2	2.3	5.9	7.5
105°	0.1	0.2	1.4	4.0	5.4
107.5°	0.1	0.2	0.8	2.7	3.7
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	1.6
115°	0.2	0.2	0.3	0.7	1.0
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)