

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: P517817

Luminaire Tested: HVL8-1-LD4-2STD-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: P517817
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2STD-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: 1412.0 lumens
Efficiency: N/A
Efficacy: 86.6 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

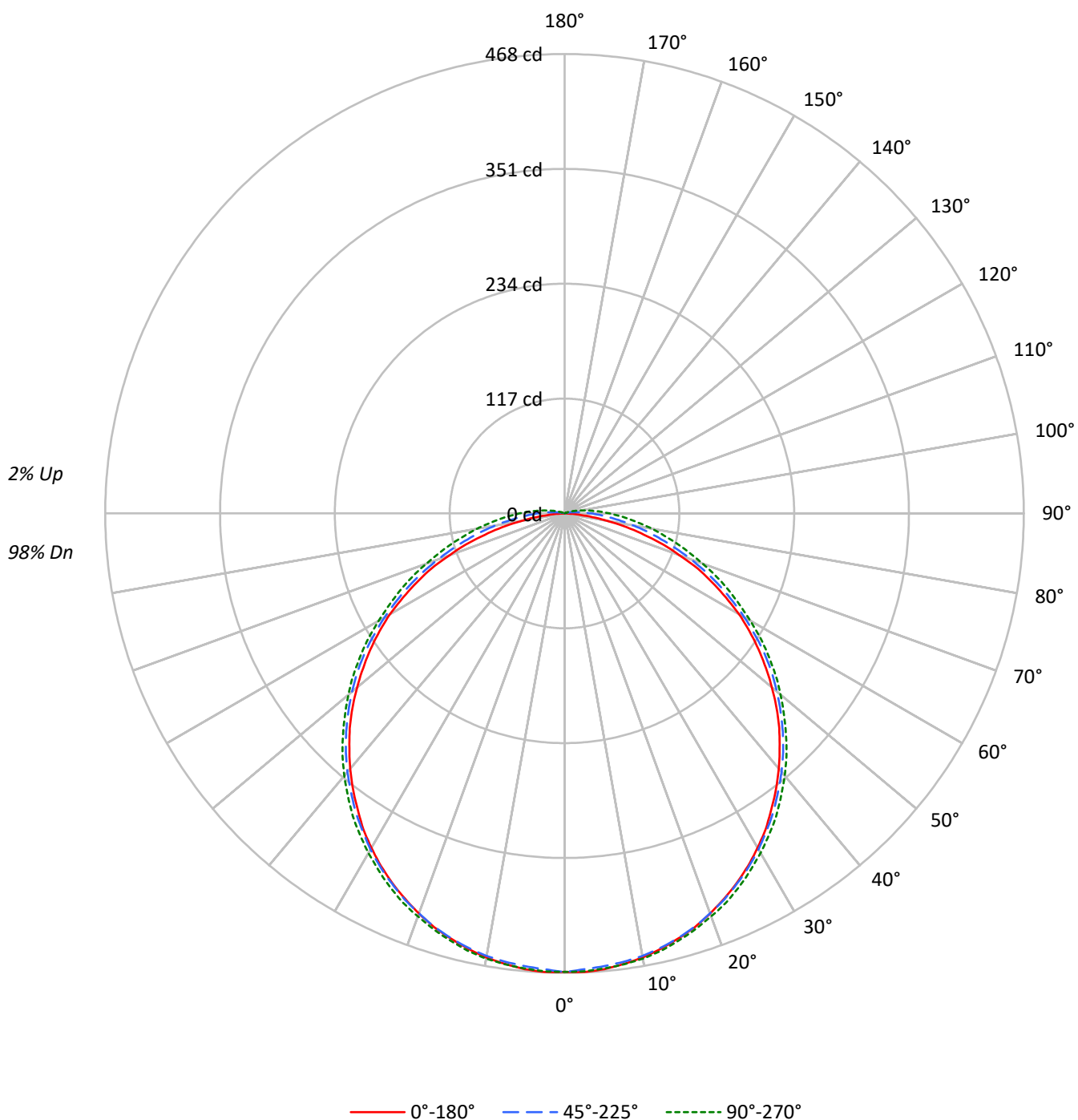
Input Watts (W): 16.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			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°	7540	7540	7540
5°	7444	7315	7378
10°	7315	7132	7231
15°	7173	6937	7054
20°	7027	6728	6881
25°	6867	6517	6706
30°	6692	6297	6507
35°	6490	6060	6310
40°	6279	5813	6080
45°	6055	5548	5832
50°	5784	5252	5566
55°	5489	4929	5271
60°	5147	4528	4926
65°	4669	4087	4586
70°	4041	3582	4189
75°	3230	3036	3830
80°	2170	2499	3499
85°	925	1955	3188

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 6055 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	44.2	3.1
10°-20°	126.8	9.0
20°-30°	192.3	13.6
30°-40°	232.6	16.5
40°-50°	242.7	17.2
50°-60°	221.9	15.7
60°-70°	173.0	12.2
70°-80°	108.2	7.7
80°-90°	49.1	3.5
90°-100°	16.5	1.2
100°-110°	4.1	0.3
110°-120°	0.6	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°	363.3	25.7
0°-40°	595.9	42.2
0°-60°	1060.4	75.1
0°-90°	1390.8	98.5
90°-120°	21.2	1.5
90°-150°	21.2	1.5
90°-180°	21.0	1.5
0°-180°	1412.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	467	467	467	467	467	
5°	466	465	463	465	465	44
15°	448	449	448	450	450	127
25°	415	416	416	420	420	191
35°	368	369	371	375	376	230
45°	309	312	315	318	319	238
55°	241	244	249	252	254	216
65°	166	169	175	182	184	164
75°	84	89	102	114	119	90
85°	14	27	46	61	66	18
90°	0	10	27	41	46	1
95°	0	3	14	26	30	0
105°	0	0	2	7	9	0
115°	0	0	0	1	2	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°	467.0	467.0	467.0	467.0	467.0
2.5°	467.6	466.9	464.8	466.9	466.8
5°	466.0	465.1	463.0	465.2	465.2
7.5°	462.9	462.6	460.7	463.3	463.3
10°	459.3	459.2	457.6	460.4	460.5
12.5°	454.2	454.7	453.2	455.9	456.2
15°	448.3	449.1	447.8	450.4	450.3
17.5°	441.8	442.2	441.4	444.2	444.1
20°	433.8	434.3	433.6	436.6	436.9
22.5°	424.8	425.6	425.5	428.6	429.5
25°	415.4	415.7	416.1	419.7	420.3
27.5°	404.9	405.5	406.2	409.4	410.1
30°	393.5	394.3	395.2	398.5	399.4
32.5°	381.4	382.2	383.3	387.6	388.1
35°	367.7	369.4	370.9	374.6	376.2
37.5°	354.1	356.1	357.6	361.5	362.7
40°	339.6	341.7	344.0	348.2	349.0
42.5°	324.5	327.0	329.7	333.5	334.8
45°	309.4	312.1	314.6	317.7	319.3
47.5°	293.0	295.7	298.8	302.3	303.3
50°	276.0	279.2	282.5	285.8	287.6
52.5°	258.6	262.5	266.2	269.7	271.4
55°	241.4	244.3	248.8	252.4	254.1
57.5°	223.6	226.0	230.1	236.0	236.9
60°	205.4	207.6	211.8	216.7	218.6
62.5°	185.4	188.4	192.8	198.9	200.7
65°	165.9	168.8	174.6	181.5	184.4
67.5°	147.1	148.1	155.6	162.8	167.4
70°	124.8	128.6	137.3	146.2	149.7
72.5°	105.7	109.4	119.0	129.5	133.9
75°	84.0	89.2	102.2	114.4	118.7
77.5°	65.0	70.7	86.8	99.1	104.0
80°	45.4	54.3	71.8	85.7	91.0
82.5°	28.5	39.5	58.2	72.8	77.5
85°	14.5	26.9	46.1	61.0	66.4
87.5°	3.9	17.4	35.9	50.1	55.6
90°	0.1	10.0	27.2	40.8	45.8
92.5°	0.1	5.6	20.3	32.5	37.5
95°	0.1	2.6	14.1	25.5	29.5
97.5°	0.1	1.1	9.7	19.3	23.2
100°	0.1	0.6	6.2	14.0	17.4
102.5°	0.2	0.3	3.9	10.0	12.8
105°	0.2	0.3	2.3	6.8	9.1
107.5°	0.2	0.3	1.3	4.6	6.3
110°	0.3	0.3	0.8	2.9	4.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.3	0.4	1.9	2.8
115°	0.3	0.3	0.4	1.2	1.8
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)