

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: P517749

Luminaire Tested: HVL8-1-LD4-1LO-40-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: P517749
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-1LO-40-UNV-O-EDD-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 652.0 lumens
Efficiency: N/A
Efficacy: 112.4 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

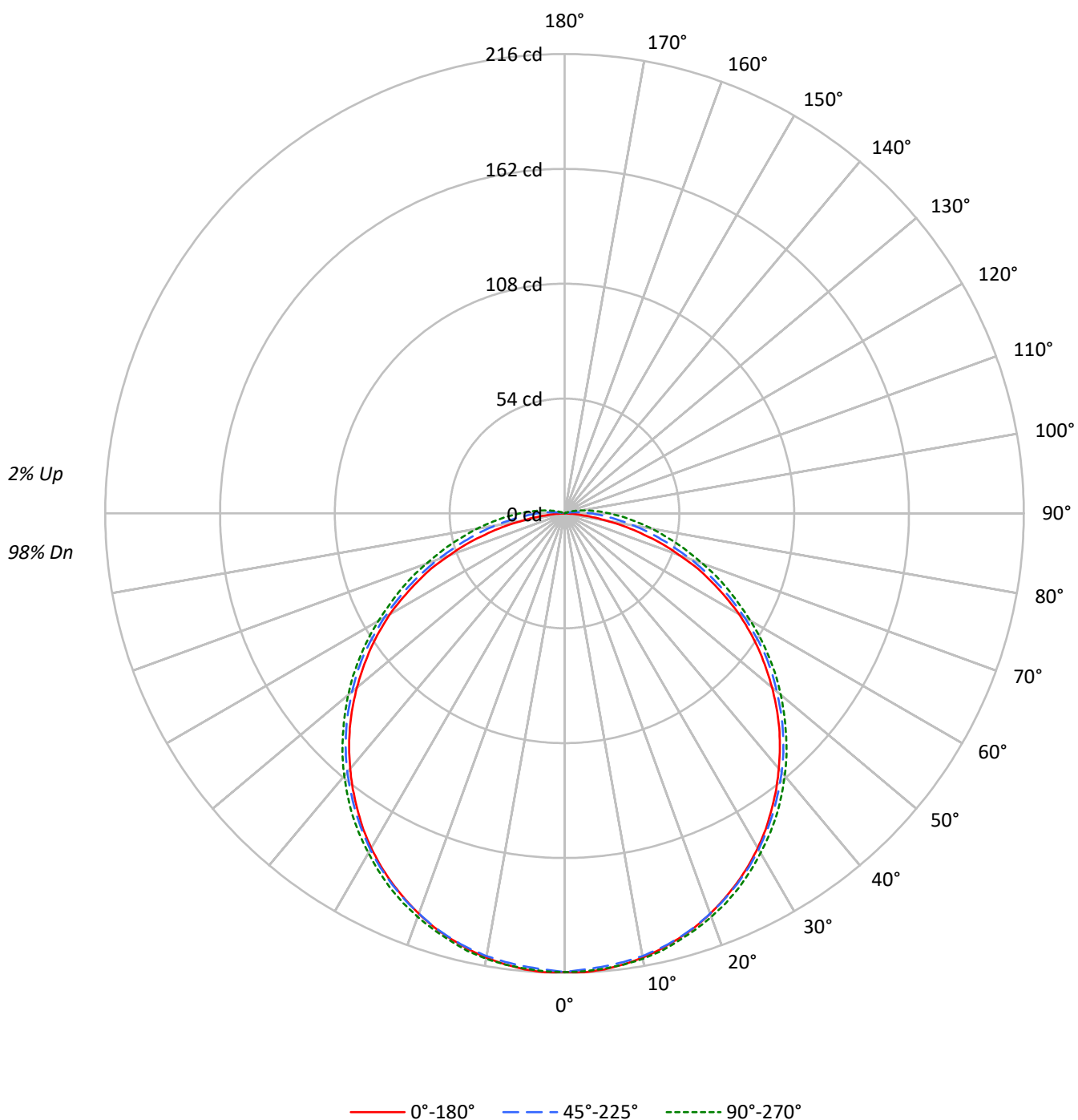
Input Watts (W): 5.8
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	102	98	94	105	100	96	92	95	92	89		91	88	86		87
2	98	89	82	76	95	87	80	75	83	77	73		79	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	52		62	56	51		60
5	75	61	52	45	72	60	52	45	58	50	44		56	49	44		54
6	69	55	46	40	67	54	46	39	52	45	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	34	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°	3481	3481	3481
5°	3438	3378	3407
10°	3378	3293	3338
15°	3312	3204	3257
20°	3245	3107	3178
25°	3170	3010	3097
30°	3090	2908	3004
35°	2997	2799	2914
40°	2899	2685	2807
45°	2795	2563	2692
50°	2670	2424	2570
55°	2535	2276	2433
60°	2378	2091	2276
65°	2156	1887	2116
70°	1865	1654	1934
75°	1492	1402	1768
80°	999	1152	1615
85°	427	903	1474

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2795 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	20.4	3.1
10°-20°	58.5	9.0
20°-30°	88.8	13.6
30°-40°	107.4	16.5
40°-50°	112.1	17.2
50°-60°	102.5	15.7
60°-70°	79.9	12.2
70°-80°	50.0	7.7
80°-90°	22.7	3.5
90°-100°	7.6	1.2
100°-110°	1.9	0.3
110°-120°	0.3	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°	167.8	25.7
0°-40°	275.2	42.2
0°-60°	489.7	75.1
0°-90°	642.2	98.5
90°-120°	9.9	1.5
90°-150°	9.9	1.5
90°-180°	10.0	1.5
0°-180°	652.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	216	216	216	216	216	
5°	215	215	214	215	215	20
15°	207	207	207	208	208	58
25°	192	192	192	194	194	88
35°	170	171	171	173	174	106
45°	143	144	145	147	147	110
55°	112	113	115	117	117	100
65°	77	78	81	84	85	76
75°	39	41	47	53	55	41
85°	7	12	21	28	31	8
90°	0	5	13	19	21	0
95°	0	1	6	12	14	0
105°	0	0	1	3	4	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°	215.6	215.6	215.6	215.6	215.6
2.5°	215.9	215.6	214.6	215.6	215.5
5°	215.2	214.8	213.8	214.8	214.8
7.5°	213.8	213.6	212.7	213.9	213.9
10°	212.1	212.0	211.3	212.6	212.6
12.5°	209.7	209.9	209.3	210.5	210.7
15°	207.0	207.4	206.8	208.0	207.9
17.5°	204.0	204.2	203.8	205.1	205.1
20°	200.3	200.5	200.2	201.6	201.8
22.5°	196.2	196.5	196.5	197.9	198.3
25°	191.8	192.0	192.2	193.8	194.1
27.5°	187.0	187.2	187.6	189.1	189.4
30°	181.7	182.1	182.5	184.0	184.4
32.5°	176.1	176.5	177.0	179.0	179.2
35°	169.8	170.6	171.3	173.0	173.7
37.5°	163.5	164.5	165.1	166.9	167.5
40°	156.8	157.8	158.9	160.8	161.1
42.5°	149.9	151.0	152.3	154.0	154.6
45°	142.8	144.1	145.3	146.7	147.4
47.5°	135.3	136.5	138.0	139.6	140.1
50°	127.4	128.9	130.4	132.0	132.8
52.5°	119.4	121.2	122.9	124.5	125.3
55°	111.5	112.8	114.9	116.6	117.3
57.5°	103.2	104.4	106.2	109.0	109.4
60°	94.9	95.9	97.8	100.0	101.0
62.5°	85.6	87.0	89.0	91.9	92.7
65°	76.6	77.9	80.6	83.8	85.1
67.5°	67.9	68.4	71.8	75.2	77.3
70°	57.6	59.4	63.4	67.5	69.1
72.5°	48.8	50.5	55.0	59.8	61.8
75°	38.8	41.2	47.2	52.8	54.8
77.5°	30.0	32.6	40.1	45.8	48.0
80°	20.9	25.1	33.1	39.5	42.0
82.5°	13.2	18.2	26.9	33.6	35.8
85°	6.7	12.4	21.3	28.2	30.7
87.5°	1.8	8.0	16.6	23.1	25.7
90°	0.1	4.6	12.6	18.9	21.1
92.5°	0.1	2.6	9.4	15.0	17.3
95°	0.1	1.2	6.5	11.8	13.6
97.5°	0.1	0.5	4.5	8.9	10.7
100°	0.1	0.3	2.8	6.5	8.0
102.5°	0.1	0.2	1.8	4.6	5.9
105°	0.1	0.2	1.1	3.2	4.2
107.5°	0.1	0.2	0.6	2.1	2.9
110°	0.2	0.2	0.4	1.3	1.9

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.2	0.2	0.9	1.3
115°	0.2	0.2	0.2	0.6	0.8
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)