

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: P517865

Luminaire Tested: HVL8-1-LD4-3STD-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: P517865
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3STD-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: 2559.0 lumens
Efficiency: N/A
Efficacy: 107.1 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

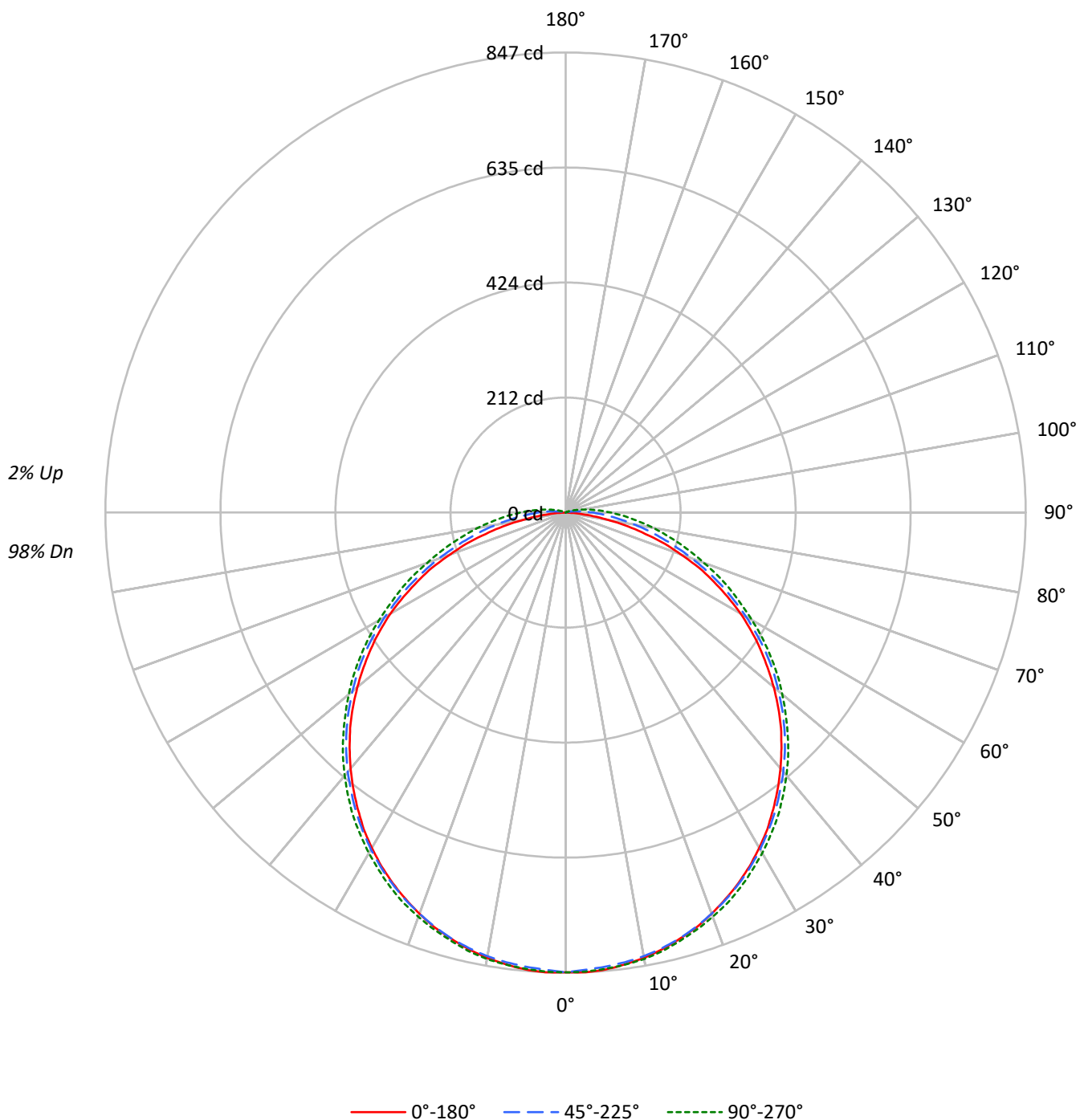
Input Watts (W): 23.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	13666	13666	13666
5°	13492	13260	13374
10°	13257	12926	13105
15°	12999	12573	12783
20°	12734	12195	12471
25°	12444	11813	12154
30°	12128	11413	11794
35°	11762	10983	11436
40°	11381	10536	11019
45°	10974	10056	10569
50°	10482	9518	10084
55°	9947	8933	9552
60°	9329	8208	8927
65°	8463	7407	8311
70°	7327	6490	7592
75°	5853	5502	6941
80°	3929	4528	6345
85°	1677	3545	5776

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 10974 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	80.1	3.1
10°-20°	229.7	9.0
20°-30°	348.6	13.6
30°-40°	421.5	16.5
40°-50°	439.8	17.2
50°-60°	402.1	15.7
60°-70°	313.5	12.2
70°-80°	196.1	7.7
80°-90°	89.1	3.5
90°-100°	29.9	1.2
100°-110°	7.5	0.3
110°-120°	1.2	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°	658.4	25.7
0°-40°	1079.9	42.2
0°-60°	1921.8	75.1
0°-90°	2520.5	98.5
90°-120°	38.5	1.5
90°-150°	38.5	1.5
90°-180°	39.0	1.5
0°-180°	2559.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	846	846	846	846	846	
5°	845	843	839	843	843	80
15°	812	814	812	816	816	229
25°	753	753	754	761	762	347
35°	666	669	672	679	682	417
45°	561	566	570	576	579	432
55°	438	443	451	458	460	391
65°	301	306	316	329	334	298
75°	152	162	185	207	215	162
85°	26	49	84	110	120	33
90°	0	18	49	74	83	1
95°	0	5	26	46	54	0
105°	0	1	4	12	17	0
115°	1	1	1	2	3	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°	846.4	846.4	846.4	846.4	846.4
2.5°	847.4	846.2	842.4	846.2	846.0
5°	844.6	843.0	839.2	843.2	843.2
7.5°	839.0	838.4	835.0	839.6	839.6
10°	832.4	832.2	829.4	834.4	834.6
12.5°	823.2	824.0	821.4	826.2	826.8
15°	812.4	813.8	811.6	816.2	816.0
17.5°	800.7	801.5	799.9	805.1	804.9
20°	786.1	787.1	785.9	791.3	791.9
22.5°	769.9	771.3	771.1	776.7	778.3
25°	752.8	753.4	754.2	760.6	761.8
27.5°	733.8	734.8	736.2	742.0	743.2
30°	713.1	714.7	716.3	722.3	723.9
32.5°	691.1	692.7	694.7	702.5	703.3
35°	666.4	669.4	672.2	679.0	681.8
37.5°	641.7	645.4	648.0	655.2	657.4
40°	615.5	619.3	623.5	631.1	632.5
42.5°	588.2	592.6	597.6	604.3	606.7
45°	560.7	565.6	570.2	575.8	578.6
47.5°	530.9	535.9	541.5	547.9	549.7
50°	500.2	506.0	512.0	518.0	521.1
52.5°	468.7	475.7	482.4	488.8	491.8
55°	437.5	442.7	450.9	457.5	460.5
57.5°	405.2	409.6	417.0	427.8	429.4
60°	372.3	376.3	383.9	392.7	396.2
62.5°	336.0	341.4	349.4	360.5	363.7
65°	300.7	305.9	316.4	329.0	334.2
67.5°	266.6	268.4	281.9	295.1	303.5
70°	226.3	233.0	248.8	265.0	271.3
72.5°	191.5	198.3	215.7	234.6	242.6
75°	152.2	161.6	185.2	207.3	215.1
77.5°	117.7	128.1	157.2	179.6	188.5
80°	82.2	98.4	130.1	155.2	165.0
82.5°	51.7	71.6	105.5	131.9	140.5
85°	26.3	48.7	83.6	110.5	120.3
87.5°	7.0	31.5	65.0	90.8	100.8
90°	0.2	18.2	49.3	74.0	83.0
92.5°	0.2	10.2	36.7	58.9	68.0
95°	0.2	4.8	25.5	46.3	53.5
97.5°	0.2	2.0	17.6	34.9	42.1
100°	0.2	1.0	11.2	25.3	31.5
102.5°	0.4	0.6	7.0	18.2	23.1
105°	0.4	0.6	4.2	12.4	16.6
107.5°	0.4	0.6	2.4	8.4	11.4
110°	0.6	0.6	1.4	5.2	7.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	0.6	0.8	3.4	5.0
115°	0.6	0.6	0.8	2.2	3.2
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)