

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: P518046

Luminaire Tested: HVL8-4-LD4-1STD-30-UNV-O-EDD

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: P518046
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-1STD-30-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2748.0 lumens
Efficiency: N/A
Efficacy: 84.3 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

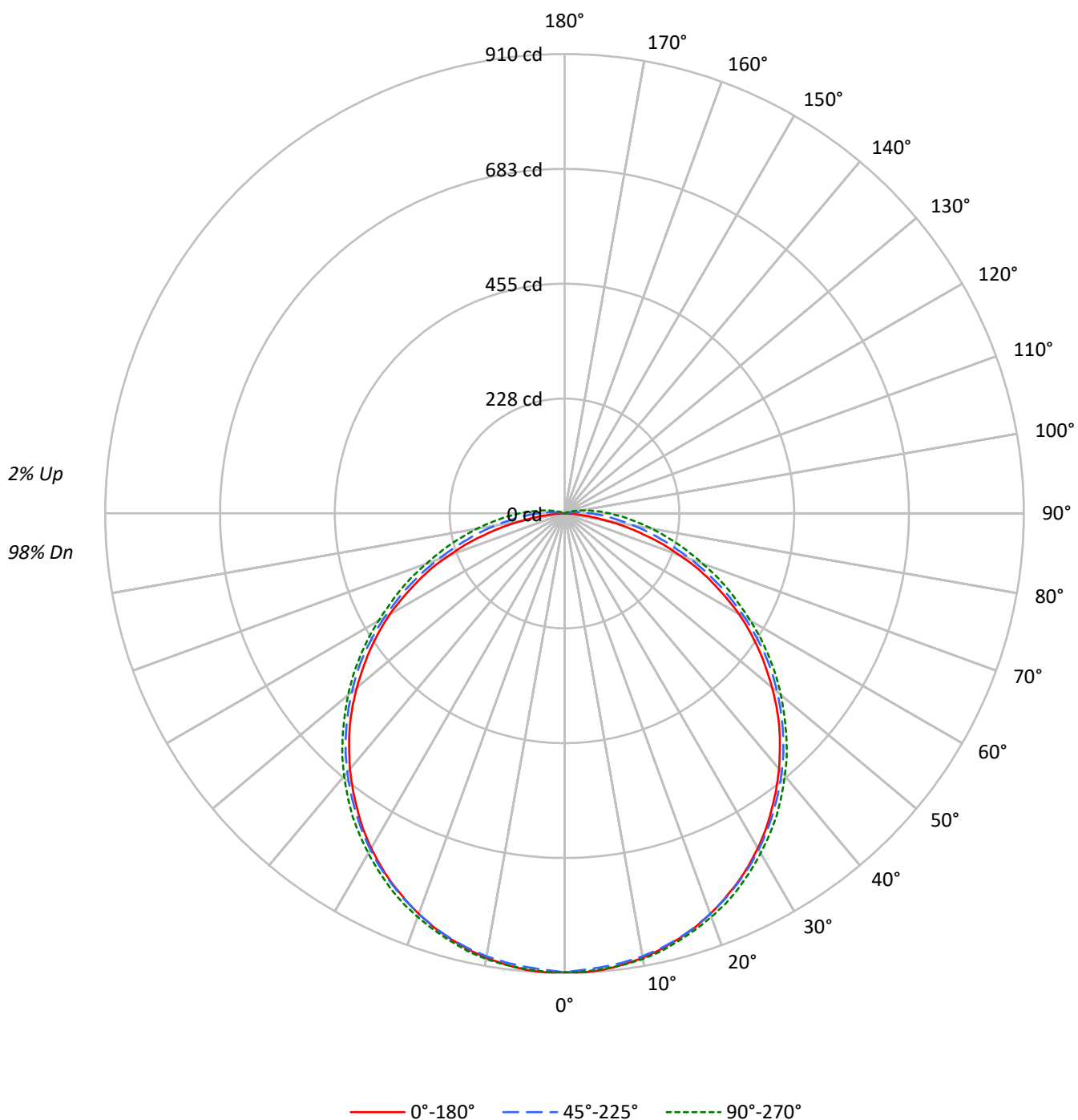
Input Watts (W): 32.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	3669	3669	3669
5°	3661	3587	3590
10°	3637	3523	3518
15°	3605	3452	3432
20°	3572	3372	3348
25°	3532	3291	3263
30°	3485	3204	3166
35°	3426	3108	3070
40°	3365	3007	2958
45°	3300	2898	2837
50°	3213	2771	2707
55°	3121	2632	2564
60°	3010	2452	2397
65°	2831	2250	2231
70°	2573	2013	2039
75°	2207	1752	1864
80°	1660	1497	1703
85°	888	1239	1551

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3300 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	86.0	3.1
10°-20°	246.7	9.0
20°-30°	374.3	13.6
30°-40°	452.6	16.5
40°-50°	472.3	17.2
50°-60°	431.8	15.7
60°-70°	336.6	12.3
70°-80°	210.6	7.7
80°-90°	95.6	3.5
90°-100°	32.0	1.2
100°-110°	8.0	0.3
110°-120°	1.3	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°	707.0	25.7
0°-40°	1159.7	42.2
0°-60°	2063.8	75.1
0°-90°	2706.6	98.5
90°-120°	41.4	1.5
90°-150°	41.4	1.5
90°-180°	41.0	1.5
0°-180°	2748.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	909	909	909	909	909	
5°	907	905	901	905	905	86
15°	872	874	872	876	876	246
25°	808	809	810	817	818	372
35°	716	719	722	729	732	448
45°	602	607	612	618	621	464
55°	470	475	484	491	494	420
65°	323	328	340	353	359	319
75°	164	174	199	223	231	174
85°	28	52	90	119	129	36
90°	0	20	53	80	89	1
95°	0	5	27	50	57	0
105°	0	1	4	13	18	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°	908.9	908.9	908.9	908.9	908.9
2.5°	909.9	908.7	904.6	908.7	908.4
5°	906.9	905.2	901.2	905.4	905.4
7.5°	900.9	900.3	896.7	901.6	901.6
10°	893.9	893.7	890.7	896.0	896.2
12.5°	884.0	884.9	882.1	887.2	887.9
15°	872.4	873.9	871.6	876.5	876.3
17.5°	859.8	860.7	859.0	864.5	864.3
20°	844.2	845.2	844.0	849.7	850.4
22.5°	826.8	828.3	828.1	834.1	835.8
25°	808.4	809.0	809.9	816.7	818.0
27.5°	788.0	789.1	790.6	796.8	798.1
30°	765.7	767.5	769.2	775.6	777.3
32.5°	742.2	743.9	746.0	754.4	755.3
35°	715.6	718.8	721.8	729.1	732.1
37.5°	689.0	693.1	695.9	703.6	706.0
40°	661.0	665.0	669.5	677.7	679.2
42.5°	631.6	636.3	641.7	649.0	651.6
45°	602.1	607.4	612.3	618.3	621.3
47.5°	570.1	575.5	581.5	588.3	590.3
50°	537.1	543.4	549.8	556.2	559.6
52.5°	503.3	510.8	518.1	524.9	528.1
55°	469.9	475.4	484.2	491.3	494.5
57.5°	435.2	439.9	447.8	459.4	461.1
60°	399.8	404.1	412.2	421.7	425.5
62.5°	360.8	366.6	375.2	387.2	390.6
65°	322.9	328.5	339.8	353.3	358.9
67.5°	286.2	288.2	302.7	316.9	325.9
70°	243.0	250.3	267.2	284.5	291.4
72.5°	205.7	213.0	231.6	252.0	260.5
75°	163.5	173.5	198.8	222.6	231.0
77.5°	126.4	137.6	168.8	192.8	202.5
80°	88.3	105.6	139.7	166.7	177.2
82.5°	55.5	76.9	113.3	141.6	150.8
85°	28.3	52.3	89.8	118.7	129.2
87.5°	7.5	33.9	69.8	97.5	108.2
90°	0.2	19.5	52.9	79.5	89.1
92.5°	0.2	10.9	39.4	63.2	73.1
95°	0.2	5.1	27.4	49.7	57.4
97.5°	0.2	2.1	18.9	37.5	45.2
100°	0.2	1.1	12.0	27.2	33.9
102.5°	0.4	0.6	7.5	19.5	24.9
105°	0.4	0.6	4.5	13.3	17.8
107.5°	0.4	0.6	2.6	9.0	12.2
110°	0.6	0.6	1.5	5.6	8.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	0.6	0.9	3.6	5.4
115°	0.6	0.6	0.9	2.4	3.4
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)