

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: P517858

Luminaire Tested: HVL8-1-LD4-3STD-35-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: P517858
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3STD-35-UNV-O-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2492.0 lumens
Efficiency: N/A
Efficacy: 104.3 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

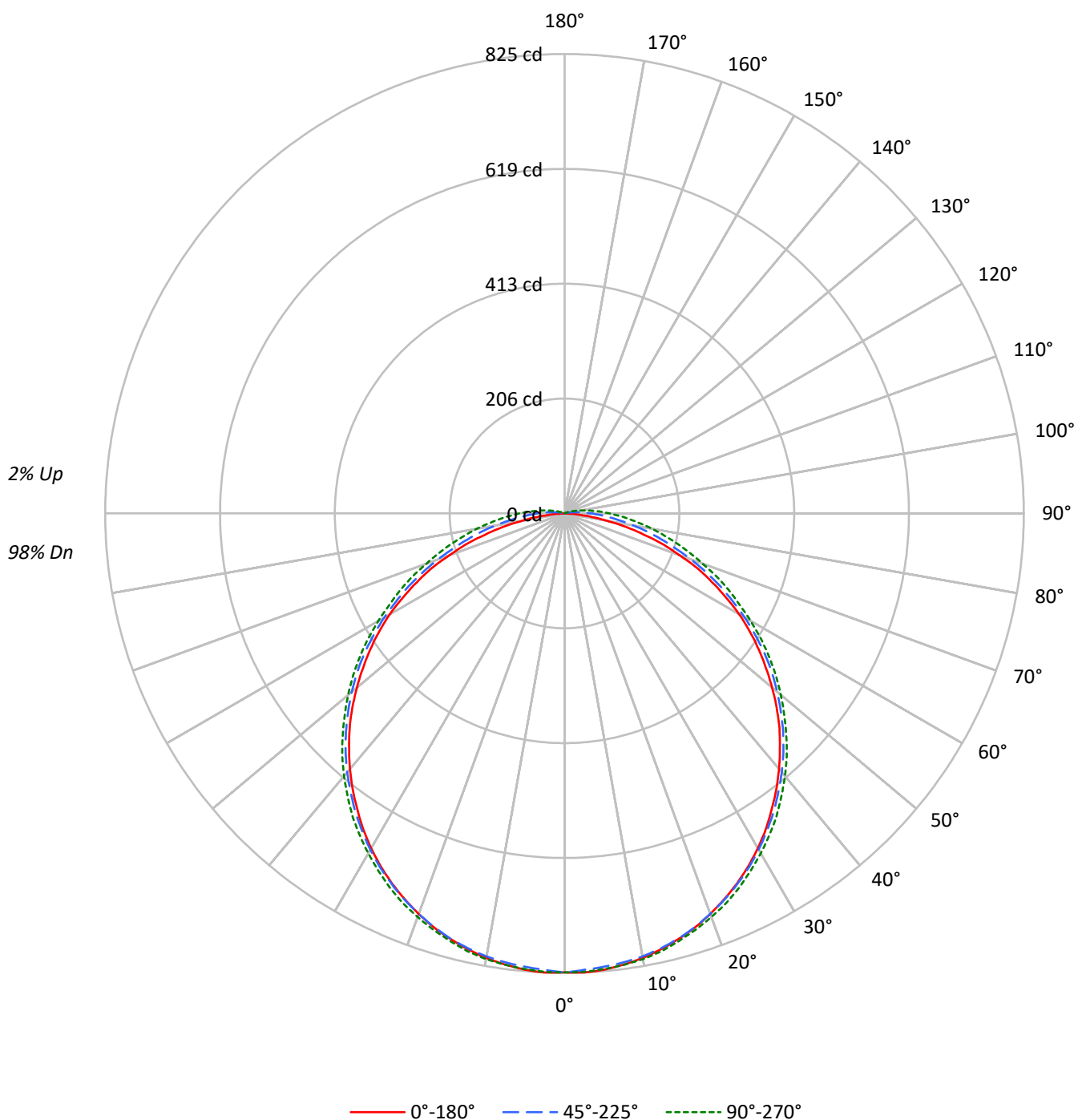
Input Watts (W): 23.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	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°	13307	13307	13307
5°	13139	12912	13023
10°	12910	12588	12762
15°	12660	12245	12450
20°	12400	11876	12145
25°	12118	11503	11835
30°	11810	11113	11484
35°	11453	10696	11136
40°	11083	10261	10730
45°	10686	9794	10293
50°	10207	9269	9821
55°	9688	8699	9301
60°	9086	7992	8695
65°	8240	7215	8092
70°	7133	6321	7393
75°	5699	5357	6760
80°	3824	4410	6179
85°	1632	3452	5628

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 10686 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.0	3.1
10°-20°	223.7	9.0
20°-30°	339.5	13.6
30°-40°	410.5	16.5
40°-50°	428.3	17.2
50°-60°	391.6	15.7
60°-70°	305.3	12.2
70°-80°	191.0	7.7
80°-90°	86.7	3.5
90°-100°	29.1	1.2
100°-110°	7.3	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°	641.2	25.7
0°-40°	1051.7	42.2
0°-60°	1871.5	75.1
0°-90°	2454.5	98.5
90°-120°	37.5	1.5
90°-150°	37.5	1.5
90°-180°	38.0	1.5
0°-180°	2492.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	824	824	824	824	824	
5°	822	821	817	821	821	78
15°	791	792	790	795	795	223
25°	733	734	734	741	742	338
35°	649	652	655	661	664	406
45°	546	551	555	561	564	421
55°	426	431	439	446	448	381
65°	293	298	308	320	325	290
75°	148	157	180	202	210	158
85°	26	47	81	108	117	32
90°	0	18	48	72	81	1
95°	0	5	25	45	52	0
105°	0	1	4	12	16	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°	824.2	824.2	824.2	824.2	824.2
2.5°	825.2	824.0	820.3	824.0	823.8
5°	822.5	820.9	817.2	821.1	821.1
7.5°	817.0	816.4	813.1	817.6	817.6
10°	810.6	810.4	807.7	812.5	812.7
12.5°	801.7	802.4	799.9	804.6	805.2
15°	791.2	792.5	790.4	794.9	794.7
17.5°	779.7	780.5	778.9	784.0	783.8
20°	765.5	766.5	765.3	770.6	771.2
22.5°	749.8	751.1	751.0	756.4	757.9
25°	733.1	733.7	734.4	740.7	741.8
27.5°	714.6	715.6	717.0	722.6	723.8
30°	694.4	696.0	697.5	703.4	704.9
32.5°	673.0	674.6	676.5	684.1	684.9
35°	648.9	651.9	654.6	661.2	663.9
37.5°	624.9	628.5	631.1	638.1	640.2
40°	599.4	603.1	607.2	614.6	615.9
42.5°	572.8	577.1	581.9	588.5	590.9
45°	546.0	550.8	555.3	560.7	563.5
47.5°	517.0	521.9	527.3	533.5	535.3
50°	487.1	492.7	498.6	504.4	507.5
52.5°	456.4	463.2	469.8	476.0	478.9
55°	426.1	431.1	439.1	445.5	448.4
57.5°	394.6	398.9	406.1	416.6	418.1
60°	362.6	366.4	373.8	382.4	385.9
62.5°	327.2	332.4	340.2	351.1	354.2
65°	292.8	297.9	308.2	320.4	325.4
67.5°	259.6	261.3	274.5	287.4	295.5
70°	220.3	226.9	242.3	258.0	264.2
72.5°	186.5	193.1	210.0	228.5	236.3
75°	148.2	157.4	180.3	201.9	209.5
77.5°	114.6	124.7	153.1	174.9	183.6
80°	80.0	95.8	126.7	151.2	160.7
82.5°	50.3	69.8	102.8	128.4	136.8
85°	25.6	47.4	81.4	107.6	117.2
87.5°	6.8	30.7	63.3	88.4	98.1
90°	0.2	17.7	48.0	72.1	80.8
92.5°	0.2	9.9	35.8	57.3	66.3
95°	0.2	4.7	24.9	45.1	52.1
97.5°	0.2	1.9	17.1	34.0	41.0
100°	0.2	1.0	10.9	24.7	30.7
102.5°	0.4	0.6	6.8	17.7	22.5
105°	0.4	0.6	4.1	12.0	16.1
107.5°	0.4	0.6	2.3	8.2	11.1
110°	0.6	0.6	1.4	5.1	7.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.6	0.6	0.8	3.3	4.9
115°	0.6	0.6	0.8	2.1	3.1
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)