

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: P517857

Luminaire Tested: HVL8-1-LD4-3STD-35-UNV-O-EDD-90

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

Cooper Lighting Solutions laboratories have been accredited by National Voluntary Laboratory Accreditation Program (NVLAP) that it adheres to the requirements of ISO/IEC 17025:2005 and appropriate IESNA test methods. This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. Results contained in this report are valid for luminaire sample tested, as supplied by requestor. Information related to the luminaire tested has been supplied by requestor and can affect the validity of the test results. Report shall not be reproduced except in full without approval of Cooper Lighting Solutions Lighting Laboratory. Test performed at address noted above.

Test Information

Test Method: LM-79-2019
Report Number: P517857
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-90
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 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

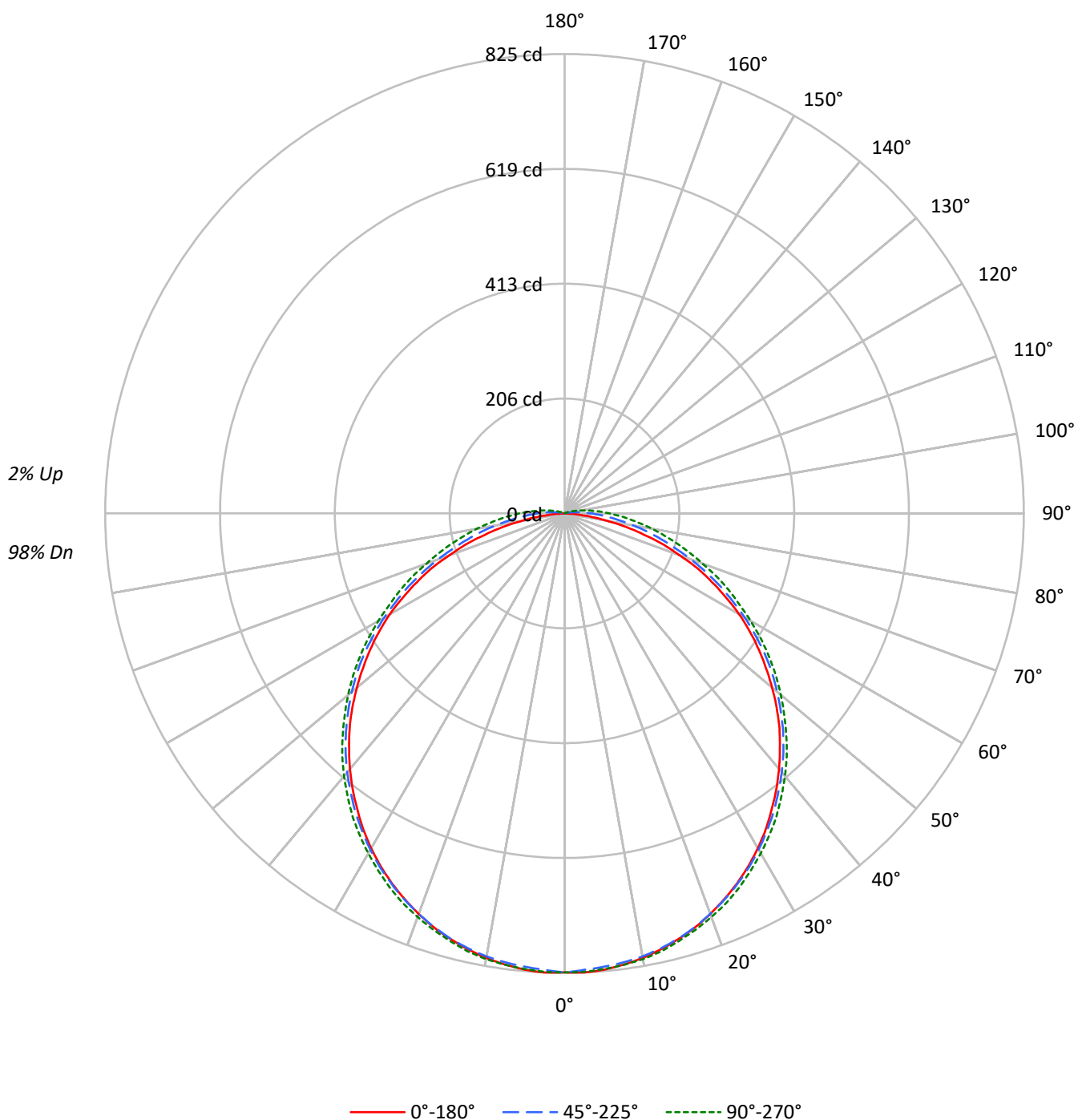
Input Watts (W): 23.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

TEST NUMBER: P517857

CATALOG NUMBER: HVL8-1-LD4-3STD-35-UNV-O-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P517857

CATALOG NUMBER: HVL8-1-LD4-3STD-35-UNV-O-EDD-90

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

TEST NUMBER: P517857

CATALOG NUMBER: HVL8-1-LD4-3STD-35-UNV-O-EDD-90

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

TEST NUMBER: P517857

CATALOG NUMBER: HVL8-1-LD4-3STD-35-UNV-O-EDD-90

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

TEST NUMBER: P517857

CATALOG NUMBER: HVL8-1-LD4-3STD-35-UNV-O-EDD-90

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)