

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: P517856

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

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: P517856
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-C-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: 2752.0 lumens
Efficiency: N/A
Efficacy: 115.1 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

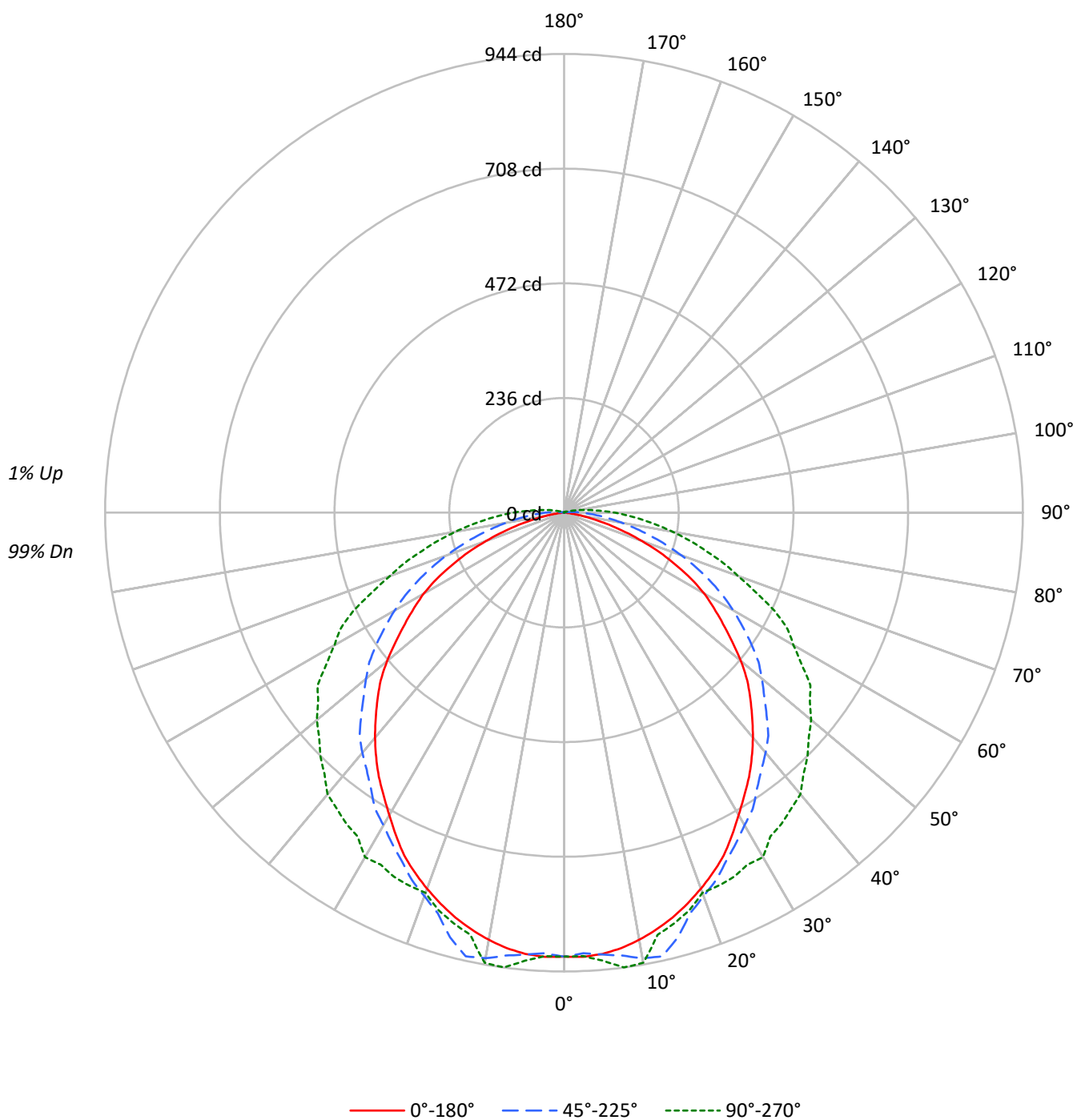
Input Watts (W): 23.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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: P517856

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

Luminous Intensity Polar Plot



TEST NUMBER: P517856

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

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			99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	78	73	80	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	51	62	56	51	60	54	50			47
5	75	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	39	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°	14749	14749	14749
5°	14558	14419	14677
10°	14211	14507	14768
15°	13801	14011	13708
20°	13338	13029	13109
25°	12860	12374	13191
30°	12219	11830	13336
35°	11716	11313	13100
40°	11183	10903	13181
45°	10617	10400	12943
50°	9960	9877	12846
55°	9083	9319	12837
60°	8346	8597	12289
65°	7117	7758	11897
70°	5530	6715	10670
75°	3680	5490	9739
80°	1840	4274	8744
85°	548	3053	7702

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 12943 cd/sqm

TEST NUMBER: P517856

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

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.8	3.2
10°-20°	250.0	9.1
20°-30°	372.0	13.5
30°-40°	447.2	16.2
40°-50°	470.7	17.1
50°-60°	436.7	15.9
60°-70°	345.3	12.5
70°-80°	210.9	7.7
80°-90°	91.9	3.3
90°-100°	28.6	1.0
100°-110°	6.4	0.2
110°-120°	2.6	0.1
120°-130°	1.5	0.1
130°-140°	0.4	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°	709.8	25.8
0°-40°	1157.0	42.0
0°-60°	2064.4	75.0
0°-90°	2712.5	98.6
90°-120°	37.6	1.4
90°-150°	39.5	1.4
90°-180°	39.0	1.4
0°-180°	2752.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	914	914	914	914	914	
5°	911	909	913	923	925	86
15°	862	896	904	874	875	243
25°	778	828	790	814	827	357
35°	664	682	692	755	781	415
45°	542	545	590	683	709	418
55°	400	406	470	573	619	359
65°	253	261	331	439	478	250
75°	96	127	185	284	302	104
85°	9	30	72	140	160	13
90°	0	9	38	89	104	0
95°	0	2	17	49	59	0
105°	0	1	3	10	13	0
115°	0	1	3	4	4	0
125°	0	0	1	3	4	0
135°	0	0	0	1	1	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: P517856

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

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	913.5	913.5	913.5	913.5	913.5
2.5°	914.6	912.2	907.2	912.0	913.3
5°	911.3	909.4	912.6	922.8	925.4
7.5°	903.7	910.7	919.1	937.7	943.7
10°	892.3	905.7	930.8	946.6	940.5
12.5°	878.5	901.2	934.9	904.0	889.7
15°	862.5	895.6	904.4	874.4	875.0
17.5°	843.7	891.0	864.0	863.3	857.9
20°	823.4	875.4	839.6	838.1	832.4
22.5°	801.7	854.7	818.1	815.1	830.7
25°	778.0	827.7	790.0	813.6	826.8
27.5°	748.5	792.4	766.5	800.0	816.6
30°	718.5	755.9	742.5	789.2	818.6
32.5°	690.4	717.7	722.8	785.1	790.0
35°	663.8	682.2	692.4	755.3	781.0
37.5°	634.6	639.6	666.8	742.9	767.6
40°	604.8	601.6	645.2	722.4	756.6
42.5°	572.8	571.7	622.3	712.2	729.3
45°	542.5	544.9	589.7	683.1	708.6
47.5°	511.4	514.5	558.8	651.3	682.9
50°	475.3	479.4	531.3	623.0	663.8
52.5°	436.2	444.0	504.5	596.2	637.4
55°	399.5	406.0	470.4	573.3	618.9
57.5°	366.0	369.9	435.3	544.5	578.9
60°	333.1	334.0	402.1	512.5	545.4
62.5°	295.3	297.0	368.1	474.7	518.8
65°	252.9	260.9	331.4	438.6	478.4
67.5°	213.3	227.2	294.0	405.5	426.3
70°	170.8	194.5	257.4	366.6	381.3
72.5°	131.9	159.7	219.8	323.1	343.7
75°	95.7	126.7	184.8	284.0	301.8
77.5°	64.4	96.0	152.0	240.8	264.4
80°	38.5	70.2	122.8	200.8	227.4
82.5°	19.7	47.1	95.3	168.4	192.2
85°	8.6	29.8	72.0	139.8	160.4
87.5°	2.4	16.9	53.0	113.0	130.4
90°	0.2	8.9	37.8	88.6	104.4
92.5°	0.2	4.3	26.6	67.0	79.1
95°	0.2	2.2	16.6	48.6	59.4
97.5°	0.2	1.3	10.0	34.4	43.5
100°	0.2	1.1	6.0	22.9	31.1
102.5°	0.2	1.3	4.1	14.5	20.3
105°	0.2	1.3	3.3	9.5	13.4
107.5°	0.4	1.3	3.0	7.1	9.3
110°	0.2	1.1	3.2	5.4	7.3

TEST NUMBER: P517856

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

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	0.9	3.0	4.5	5.4
115°	0.2	0.7	2.6	4.3	4.5
117.5°	0.4	0.6	2.0	4.3	4.5
120°	0.4	0.4	1.7	4.1	4.7
122.5°	0.4	0.4	1.3	3.7	4.5
125°	0.2	0.4	1.1	2.8	3.9
127.5°	0.4	0.4	0.9	2.2	3.0
130°	0.4	0.4	0.7	1.7	2.2
132.5°	0.4	0.4	0.6	1.3	1.7
135°	0.4	0.4	0.4	0.9	1.3
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)