

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: P518057

Luminaire Tested: HVL8-4-LD4-1STD-50-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: P518057
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-1STD-50-UNV-O-EDD-90
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3418.0 lumens
Efficiency: N/A
Efficacy: 104.8 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

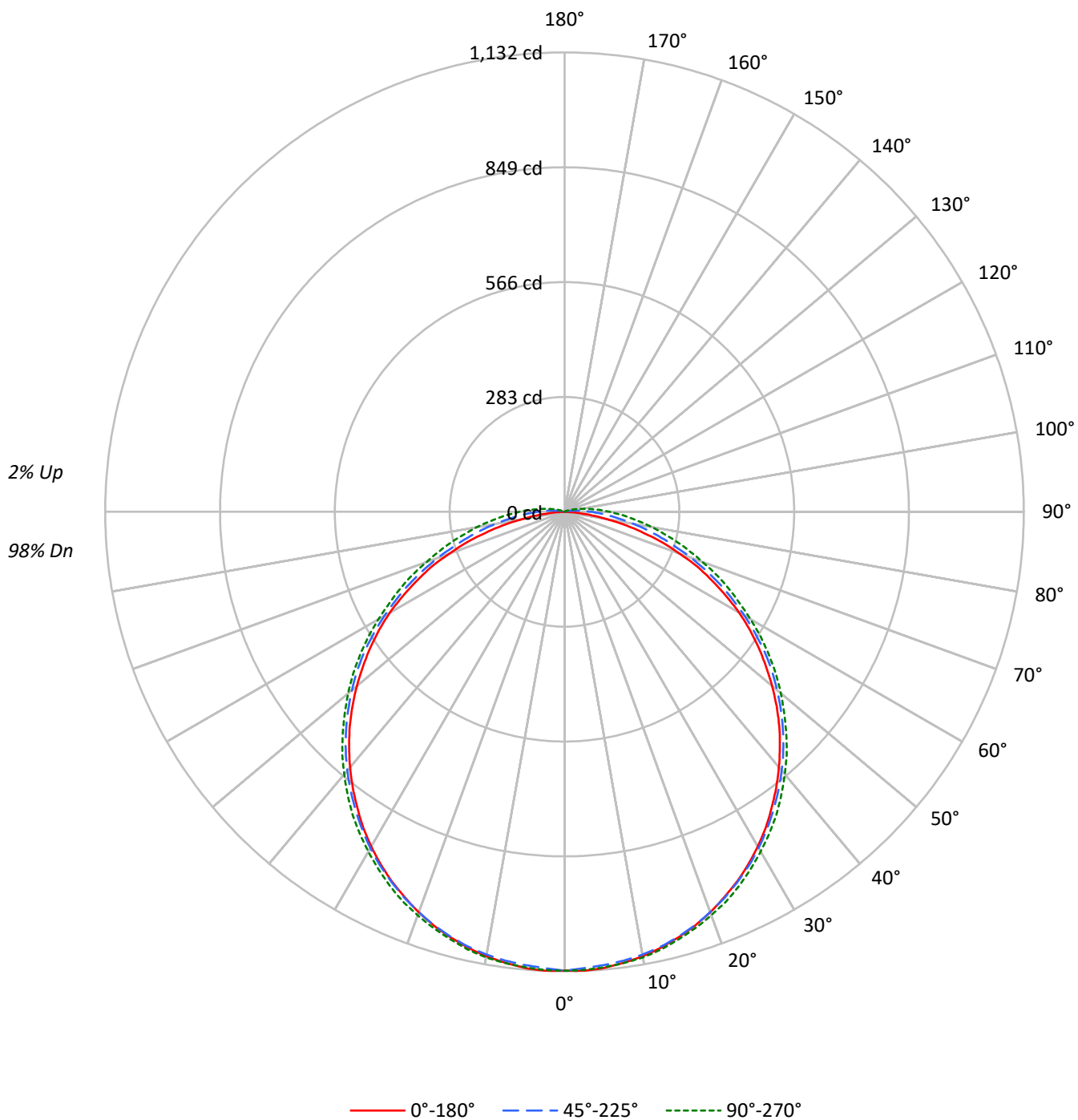
Input Watts (W): 32.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

TEST NUMBER: P518057

CATALOG NUMBER: HVL8-4-LD4-1STD-50-UNV-O-EDD-90

Luminous Intensity Polar Plot



TEST NUMBER: P518057

CATALOG NUMBER: HVL8-4-LD4-1STD-50-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°	4563	4563	4563
5°	4554	4461	4466
10°	4524	4381	4376
15°	4485	4293	4269
20°	4443	4194	4164
25°	4393	4093	4058
30°	4335	3985	3938
35°	4262	3866	3819
40°	4185	3741	3679
45°	4103	3604	3529
50°	3997	3447	3368
55°	3882	3274	3190
60°	3744	3049	2982
65°	3521	2799	2775
70°	3200	2503	2535
75°	2744	2179	2318
80°	2064	1862	2119
85°	1104	1541	1929

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 4103 cd/sqm

TEST NUMBER: P518057

CATALOG NUMBER: HVL8-4-LD4-1STD-50-UNV-O-EDD-90

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	107.0	3.1
10°-20°	306.9	9.0
20°-30°	465.6	13.6
30°-40°	563.0	16.5
40°-50°	587.4	17.2
50°-60°	537.1	15.7
60°-70°	418.7	12.2
70°-80°	261.9	7.7
80°-90°	119.0	3.5
90°-100°	39.9	1.2
100°-110°	10.0	0.3
110°-120°	1.6	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°	879.4	25.7
0°-40°	1442.4	42.2
0°-60°	2567.0	75.1
0°-90°	3366.6	98.5
90°-120°	51.5	1.5
90°-150°	51.5	1.5
90°-180°	51.0	1.5
0°-180°	3418.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1130	1130	1130	1130	1130	
5°	1128	1126	1121	1126	1126	107
15°	1085	1087	1084	1090	1090	306
25°	1006	1006	1007	1016	1018	463
35°	890	894	898	907	911	557
45°	749	756	762	769	773	577
55°	584	591	602	611	615	522
65°	402	408	423	439	446	397
75°	203	216	247	277	287	217
85°	35	65	112	148	161	45
90°	0	24	66	99	111	1
95°	0	6	34	62	71	0
105°	0	1	6	16	22	1
115°	1	1	1	3	4	1
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: P518057

CATALOG NUMBER: HVL8-4-LD4-1STD-50-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1130.5	1130.5	1130.5	1130.5	1130.5
2.5°	1131.8	1130.2	1125.1	1130.2	1129.9
5°	1128.1	1125.9	1120.9	1126.2	1126.2
7.5°	1120.6	1119.8	1115.3	1121.4	1121.4
10°	1111.8	1111.5	1107.8	1114.5	1114.7
12.5°	1099.6	1100.6	1097.2	1103.6	1104.4
15°	1085.2	1087.0	1084.1	1090.2	1090.0
17.5°	1069.4	1070.5	1068.4	1075.3	1075.0
20°	1050.0	1051.3	1049.7	1056.9	1057.7
22.5°	1028.4	1030.3	1030.0	1037.5	1039.6
25°	1005.5	1006.3	1007.3	1015.9	1017.5
27.5°	980.2	981.5	983.4	991.1	992.7
30°	952.4	954.6	956.7	964.7	966.8
32.5°	923.1	925.3	927.9	938.3	939.4
35°	890.1	894.1	897.8	906.9	910.6
37.5°	857.0	862.1	865.6	875.2	878.1
40°	822.1	827.2	832.8	842.9	844.8
42.5°	785.6	791.5	798.1	807.2	810.4
45°	748.8	755.5	761.6	769.1	772.8
47.5°	709.1	715.8	723.3	731.8	734.2
50°	668.1	675.8	683.8	691.8	696.1
52.5°	626.0	635.3	644.4	652.9	656.9
55°	584.4	591.4	602.3	611.1	615.1
57.5°	541.2	547.1	557.0	571.4	573.5
60°	497.3	502.6	512.7	524.5	529.3
62.5°	448.8	456.0	466.6	481.6	485.8
65°	401.6	408.5	422.7	439.4	446.4
67.5°	356.0	358.4	376.6	394.1	405.3
70°	302.2	311.3	332.3	353.9	362.4
72.5°	255.8	264.9	288.1	313.4	324.1
75°	203.3	215.9	247.3	276.9	287.3
77.5°	157.2	171.1	210.0	239.8	251.8
80°	109.8	131.4	173.8	207.3	220.4
82.5°	69.0	95.7	141.0	176.2	187.6
85°	35.2	65.0	111.7	147.6	160.7
87.5°	9.3	42.1	86.9	121.3	134.6
90°	0.3	24.3	65.8	98.9	110.9
92.5°	0.3	13.6	49.0	78.6	90.9
95°	0.3	6.4	34.1	61.8	71.4
97.5°	0.3	2.7	23.5	46.6	56.2
100°	0.3	1.3	14.9	33.8	42.1
102.5°	0.5	0.8	9.3	24.3	30.9
105°	0.5	0.8	5.6	16.5	22.1
107.5°	0.5	0.8	3.2	11.2	15.2
110°	0.8	0.8	1.9	6.9	10.1

TEST NUMBER: P518057

CATALOG NUMBER: HVL8-4-LD4-1STD-50-UNV-O-EDD-90

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.8	0.8	1.1	4.5	6.7
115°	0.8	0.8	1.1	2.9	4.3
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)