

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: P517832

Luminaire Tested: HVL8-1-LD4-3HI-50-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: P517832
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3HI-50-UNV-C-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

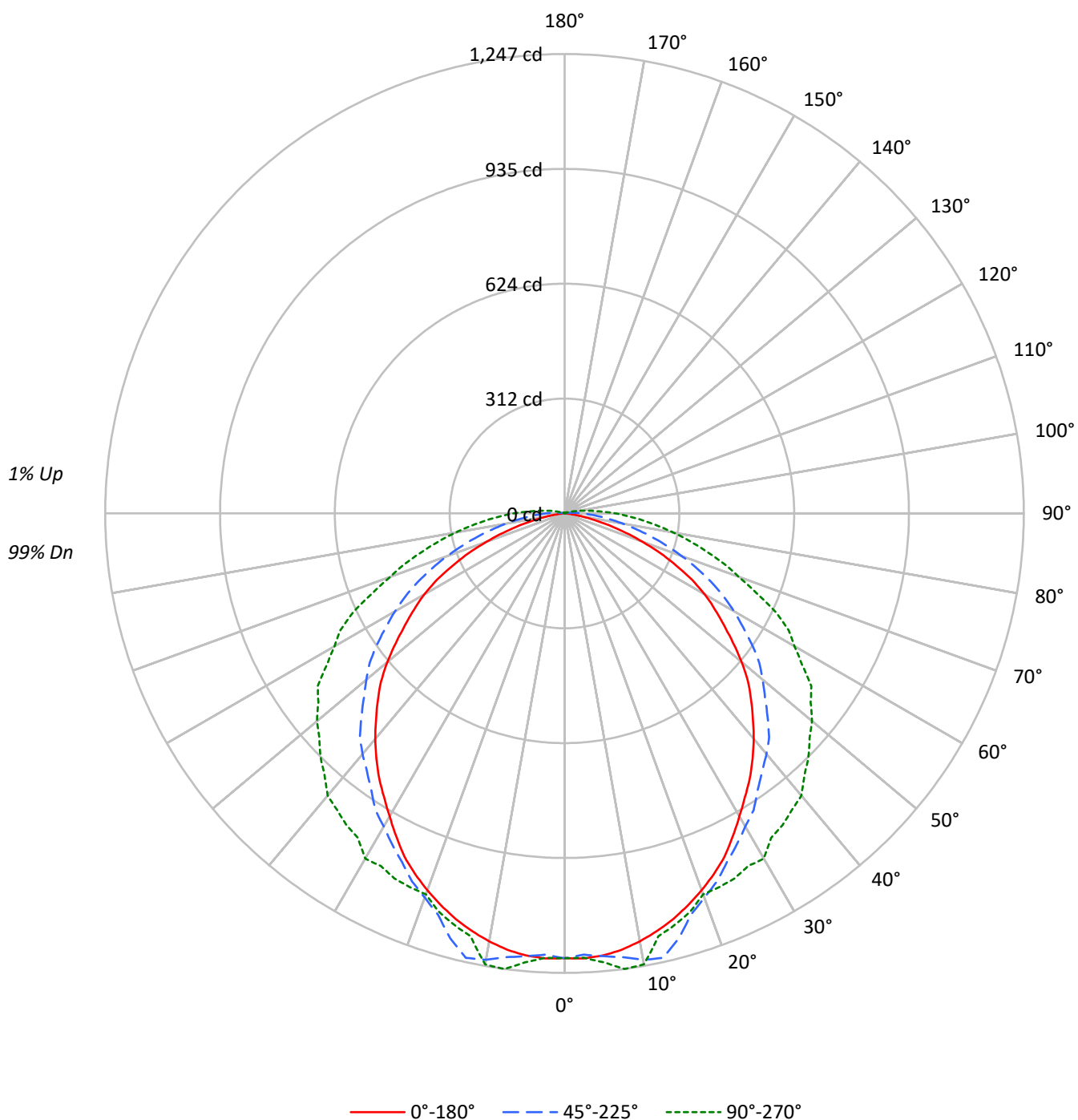
Lumens per Lamp: N/A
Luminaire Lumens: 3637.0 lumens
Efficiency: N/A
Efficacy: 115.5 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

Input Watts (W): 31.5
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: P517832
CATALOG NUMBER: HVL8-1-LD4-3HI-50-UNV-C-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P517832

CATALOG NUMBER: HVL8-1-LD4-3HI-50-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°	19493	19493	19493
5°	19238	19057	19397
10°	18781	19173	19517
15°	18239	18516	18116
20°	17630	17220	17325
25°	16996	16352	17434
30°	16148	15635	17626
35°	15483	14952	17314
40°	14779	14409	17422
45°	14031	13746	17106
50°	13162	13052	16975
55°	12005	12317	16967
60°	11030	11363	16242
65°	9406	10254	15725
70°	7311	8872	14101
75°	4861	7255	12872
80°	2433	5649	11555
85°	721	4037	10180

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 17106 cd/sqm

TEST NUMBER: P517832

CATALOG NUMBER: HVL8-1-LD4-3HI-50-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.0	3.2
10°-20°	330.4	9.1
20°-30°	491.7	13.5
30°-40°	591.0	16.2
40°-50°	622.0	17.1
50°-60°	577.2	15.9
60°-70°	456.4	12.5
70°-80°	278.7	7.7
80°-90°	121.5	3.3
90°-100°	37.8	1.0
100°-110°	8.5	0.2
110°-120°	3.4	0.1
120°-130°	1.9	0.1
130°-140°	0.5	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°	938.1	25.8
0°-40°	1529.1	42.0
0°-60°	2728.3	75.0
0°-90°	3584.9	98.6
90°-120°	49.7	1.4
90°-150°	52.1	1.4
90°-180°	52.0	1.4
0°-180°	3637.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1207	1207	1207	1207	1207	
5°	1204	1202	1206	1220	1223	114
15°	1140	1184	1195	1156	1156	321
25°	1028	1094	1044	1075	1093	472
35°	877	902	915	998	1032	548
45°	717	720	779	903	936	553
55°	528	537	622	758	818	474
65°	334	345	438	580	632	331
75°	126	168	244	375	399	138
85°	11	39	95	185	212	18
90°	0	12	50	117	138	1
95°	0	3	22	64	78	0
105°	0	2	4	12	18	0
115°	0	1	3	6	6	0
125°	0	0	2	4	5	0
135°	0	0	0	1	2	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: P517832

CATALOG NUMBER: HVL8-1-LD4-3HI-50-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1207.3	1207.3	1207.3	1207.3	1207.3
2.5°	1208.8	1205.6	1198.9	1205.3	1207.0
5°	1204.3	1201.9	1206.1	1219.6	1223.0
7.5°	1194.3	1203.6	1214.7	1239.3	1247.1
10°	1179.2	1197.0	1230.2	1251.1	1242.9
12.5°	1161.1	1191.1	1235.6	1194.7	1175.8
15°	1139.9	1183.7	1195.2	1155.6	1156.4
17.5°	1115.1	1177.5	1141.9	1140.9	1133.8
20°	1088.3	1156.9	1109.7	1107.7	1100.1
22.5°	1059.5	1129.6	1081.1	1077.2	1097.8
25°	1028.2	1093.9	1044.0	1075.2	1092.7
27.5°	989.1	1047.2	1013.0	1057.3	1079.2
30°	949.5	999.0	981.3	1043.0	1081.9
32.5°	912.4	948.6	955.2	1037.6	1044.0
35°	877.2	901.6	915.1	998.2	1032.2
37.5°	838.6	845.3	881.2	981.8	1014.5
40°	799.3	795.1	852.7	954.7	1000.0
42.5°	757.0	755.5	822.4	941.2	963.8
45°	716.9	720.1	779.4	902.8	936.5
47.5°	675.8	680.0	738.5	860.8	902.6
50°	628.1	633.5	702.1	823.4	877.2
52.5°	576.5	586.8	666.7	788.0	842.3
55°	528.0	536.6	621.7	757.7	818.0
57.5°	483.8	488.9	575.2	719.6	765.1
60°	440.2	441.5	531.5	677.3	720.8
62.5°	390.3	392.5	486.5	627.4	685.7
65°	334.2	344.8	438.0	579.7	632.3
67.5°	281.8	300.3	388.6	535.9	563.4
70°	225.8	257.0	340.1	484.5	503.9
72.5°	174.4	211.0	290.4	426.9	454.2
75°	126.4	167.5	244.2	375.3	398.9
77.5°	85.1	126.9	200.9	318.2	349.5
80°	50.9	92.7	162.3	265.4	300.5
82.5°	26.1	62.2	125.9	222.6	254.0
85°	11.3	39.3	95.2	184.7	212.0
87.5°	3.2	22.4	70.1	149.3	172.4
90°	0.2	11.8	49.9	117.1	138.0
92.5°	0.2	5.7	35.2	88.5	104.5
95°	0.2	3.0	21.9	64.2	78.5
97.5°	0.2	1.7	13.3	45.5	57.5
100°	0.2	1.5	7.9	30.2	41.1
102.5°	0.2	1.7	5.4	19.2	26.8
105°	0.2	1.7	4.4	12.5	17.7
107.5°	0.5	1.7	3.9	9.3	12.3
110°	0.2	1.5	4.2	7.1	9.6

TEST NUMBER: P517832

CATALOG NUMBER: HVL8-1-LD4-3HI-50-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	1.2	3.9	5.9	7.1
115°	0.2	1.0	3.4	5.7	5.9
117.5°	0.5	0.7	2.7	5.7	5.9
120°	0.5	0.5	2.2	5.4	6.1
122.5°	0.5	0.5	1.7	4.9	5.9
125°	0.2	0.5	1.5	3.7	5.2
127.5°	0.5	0.5	1.2	3.0	3.9
130°	0.5	0.5	1.0	2.2	3.0
132.5°	0.5	0.5	0.7	1.7	2.2
135°	0.5	0.5	0.5	1.2	1.7
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)