

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: P518062

Luminaire Tested: HVL8-4-LD4-2HI-30-UNV-O-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: P518062
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-2HI-30-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

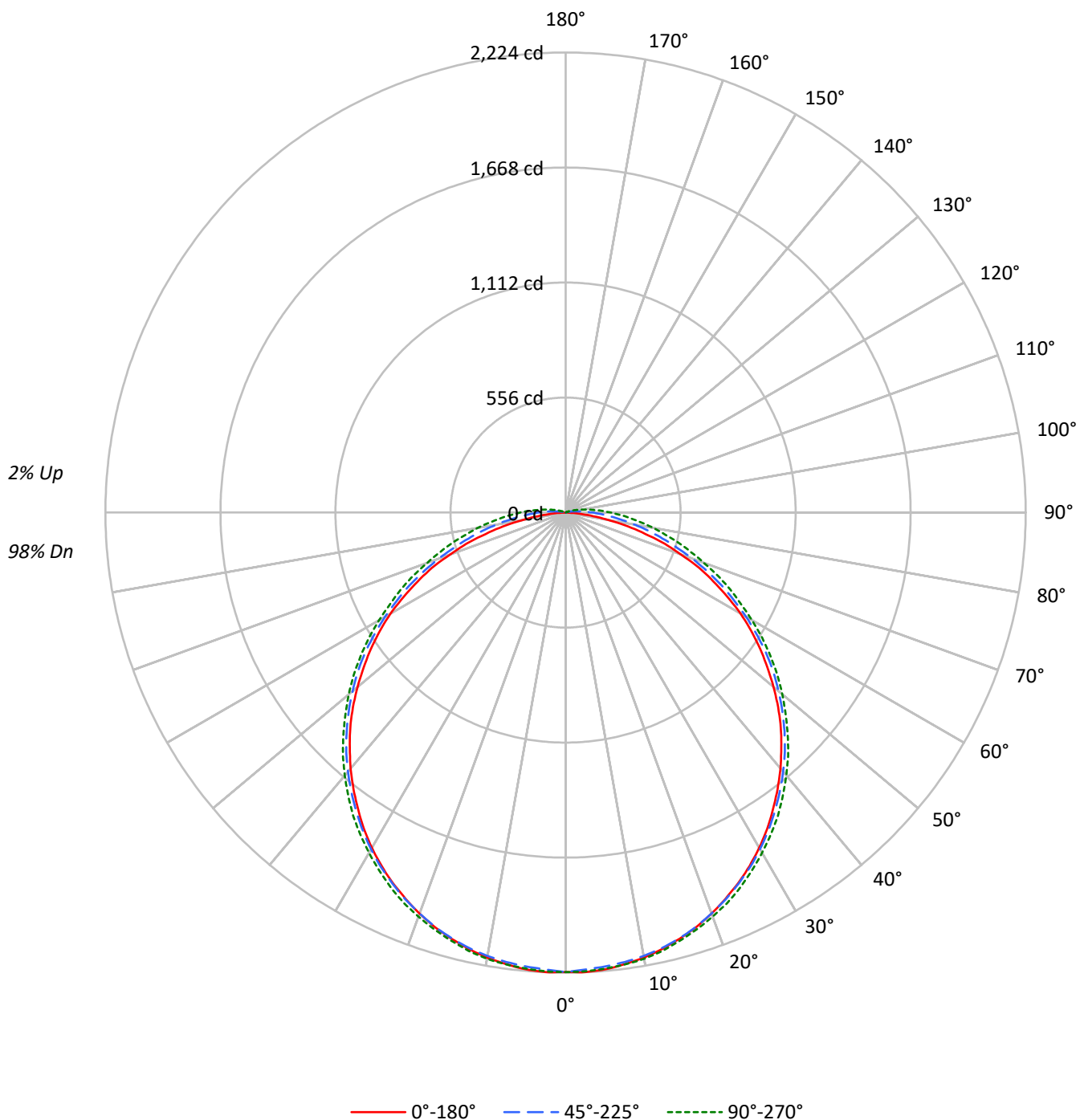
Lumens per Lamp: N/A
Luminaire Lumens: 6716.0 lumens
Efficiency: N/A
Efficacy: 78.0 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

Input Watts (W): 86.1
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: P518062
CATALOG NUMBER: HVL8-4-LD4-2HI-30-UNV-O-EDD

Luminous Intensity Polar Plot



TEST NUMBER: P518062

CATALOG NUMBER: HVL8-4-LD4-2HI-30-UNV-O-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			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°	8966	8966	8966
5°	8948	8766	8774
10°	8889	8609	8599
15°	8812	8435	8388
20°	8730	8241	8183
25°	8632	8042	7974
30°	8518	7829	7737
35°	8374	7596	7503
40°	8224	7350	7230
45°	8063	7082	6934
50°	7853	6772	6617
55°	7627	6433	6267
60°	7357	5992	5858
65°	6918	5499	5453
70°	6288	4919	4982
75°	5392	4282	4554
80°	4055	3657	4162
85°	2168	3026	3791

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 8063 cd/sqm

TEST NUMBER: P518062

CATALOG NUMBER: HVL8-4-LD4-2HI-30-UNV-O-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	210.2	3.1
10°-20°	602.9	9.0
20°-30°	914.9	13.6
30°-40°	1106.2	16.5
40°-50°	1154.3	17.2
50°-60°	1055.3	15.7
60°-70°	822.7	12.2
70°-80°	514.6	7.7
80°-90°	233.7	3.5
90°-100°	78.3	1.2
100°-110°	19.7	0.3
110°-120°	3.1	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°	1728.0	25.7
0°-40°	2834.2	42.2
0°-60°	5043.8	75.1
0°-90°	6614.9	98.5
90°-120°	101.1	1.5
90°-150°	101.1	1.5
90°-180°	101.0	1.5
0°-180°	6716.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2221	2221	2221	2221	2221	
5°	2216	2212	2202	2213	2213	210
15°	2132	2136	2130	2142	2142	602
25°	1976	1977	1979	1996	1999	910
35°	1749	1757	1764	1782	1789	1095
45°	1471	1484	1496	1511	1518	1134
55°	1148	1162	1183	1201	1208	1026
65°	789	803	830	864	877	781
75°	400	424	486	544	564	426
85°	69	128	219	290	316	87
90°	0	48	129	194	218	3
95°	0	13	67	122	140	0
105°	1	2	11	32	44	1
115°	2	2	2	6	8	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: P518062

CATALOG NUMBER: HVL8-4-LD4-2HI-30-UNV-O-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2221.2	2221.2	2221.2	2221.2	2221.2
2.5°	2223.9	2220.7	2210.8	2220.7	2220.2
5°	2216.5	2212.3	2202.4	2212.9	2212.9
7.5°	2201.9	2200.3	2191.4	2203.4	2203.4
10°	2184.6	2184.1	2176.7	2189.8	2190.4
12.5°	2160.5	2162.6	2155.8	2168.4	2169.9
15°	2132.2	2135.9	2130.1	2142.2	2141.7
17.5°	2101.3	2103.4	2099.2	2112.9	2112.3
20°	2063.1	2065.7	2062.6	2076.7	2078.3
22.5°	2020.7	2024.4	2023.8	2038.5	2042.7
25°	1975.7	1977.2	1979.3	1996.1	1999.2
27.5°	1925.9	1928.5	1932.2	1947.4	1950.5
30°	1871.5	1875.6	1879.8	1895.5	1899.7
32.5°	1813.9	1818.1	1823.3	1843.7	1845.8
35°	1748.9	1756.8	1764.1	1781.9	1789.3
37.5°	1684.0	1693.9	1700.8	1719.6	1725.4
40°	1615.4	1625.4	1636.4	1656.2	1659.9
42.5°	1543.7	1555.2	1568.3	1586.1	1592.4
45°	1471.4	1484.5	1496.5	1511.2	1518.5
47.5°	1393.4	1406.5	1421.1	1437.9	1442.6
50°	1312.7	1327.9	1343.6	1359.3	1367.7
52.5°	1230.0	1248.3	1266.1	1282.9	1290.8
55°	1148.3	1161.9	1183.4	1200.7	1208.5
57.5°	1063.5	1075.0	1094.4	1122.7	1126.9
60°	977.1	987.6	1007.5	1030.5	1039.9
62.5°	881.8	895.9	916.9	946.2	954.6
65°	789.1	802.7	830.5	863.5	877.1
67.5°	699.6	704.3	739.9	774.5	796.4
70°	593.8	611.6	653.0	695.4	712.1
72.5°	502.7	520.5	566.0	615.8	636.7
75°	399.5	424.1	485.9	544.1	564.5
77.5°	308.9	336.2	412.6	471.3	494.8
80°	215.7	258.2	341.4	407.4	433.0
82.5°	135.6	188.0	277.0	346.1	368.6
85°	69.1	127.8	219.4	290.1	315.8
87.5°	18.3	82.7	170.7	238.3	264.4
90°	0.5	47.7	129.3	194.3	217.8
92.5°	0.5	26.7	96.3	154.5	178.6
95°	0.5	12.6	67.0	121.5	140.3
97.5°	0.5	5.2	46.1	91.6	110.5
100°	0.5	2.6	29.3	66.5	82.7
102.5°	1.0	1.6	18.3	47.7	60.7
105°	1.0	1.6	11.0	32.5	43.5
107.5°	1.0	1.6	6.3	22.0	29.8
110°	1.6	1.6	3.7	13.6	19.9

TEST NUMBER: P518062

CATALOG NUMBER: HVL8-4-LD4-2HI-30-UNV-O-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.6	1.6	2.1	8.9	13.1
115°	1.6	1.6	2.1	5.8	8.4
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)