

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: P518092

Luminaire Tested: HVL8-4-LD4-2STD-30-UNV-C-EDD

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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Test Information

Test Method: LM-79-2019
Report Number: P518092
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-2STD-30-UNV-C-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: 6649.9 lumens
Efficiency: N/A
Efficacy: 101.7 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

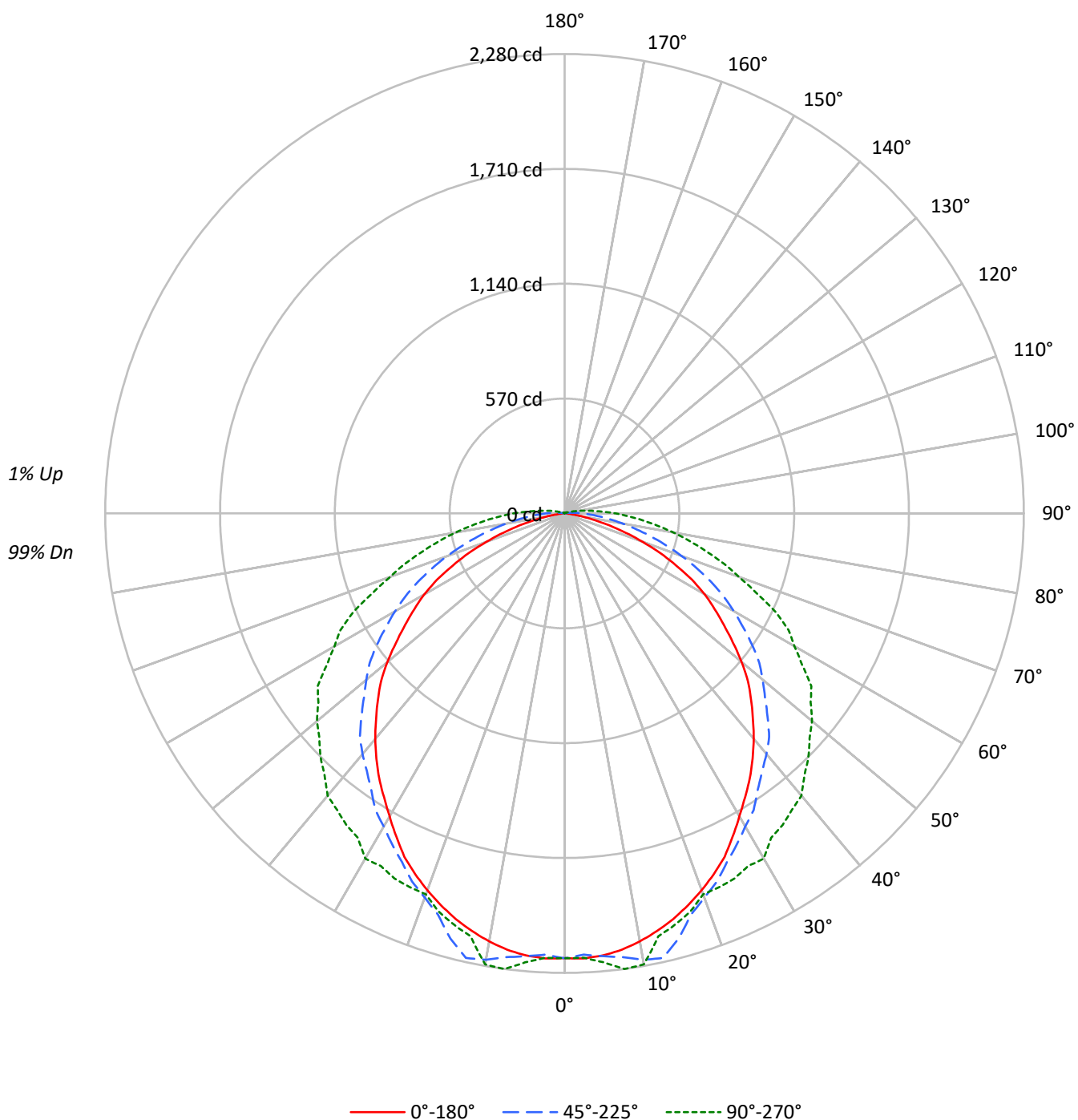
Input Watts (W): 65.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

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Luminous Intensity Polar Plot



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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°	8910	8910	8910
5°	8890	8777	8867
10°	8773	8896	8921
15°	8613	8654	8281
20°	8420	8107	7919
25°	8214	7756	7969
30°	7902	7473	8057
35°	7680	7204	7914
40°	7440	7003	7963
45°	7183	6743	7819
50°	6871	6471	7760
55°	6412	6180	7756
60°	6060	5780	7425
65°	5358	5303	7188
70°	4371	4685	6446
75°	3119	3935	5884
80°	1750	3180	5282
85°	649	2400	4653

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 7819 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	212.2	3.2
10°-20°	604.2	9.1
20°-30°	899.0	13.5
30°-40°	1080.5	16.2
40°-50°	1137.3	17.1
50°-60°	1055.3	15.9
60°-70°	834.4	12.5
70°-80°	509.7	7.7
80°-90°	222.1	3.3
90°-100°	69.1	1.0
100°-110°	15.5	0.2
110°-120°	6.2	0.1
120°-130°	3.5	0.1
130°-140°	0.9	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°	1715.3	25.8
0°-40°	2795.8	42.0
0°-60°	4988.5	75.0
0°-90°	6554.6	98.6
90°-120°	90.9	1.4
90°-150°	95.3	1.4
90°-180°	95.0	1.4
0°-180°	6649.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2207	2207	2207	2207	2207	
5°	2202	2198	2205	2230	2236	209
15°	2084	2164	2185	2113	2114	587
25°	1880	2000	1909	1966	1998	863
35°	1604	1648	1673	1825	1887	1002
45°	1311	1317	1425	1651	1712	1010
55°	965	981	1137	1385	1496	867
65°	611	630	801	1060	1156	605
75°	231	306	446	686	729	252
85°	21	72	174	338	388	32
90°	0	22	91	214	252	1
95°	0	5	40	117	143	0
105°	0	3	8	23	32	1
115°	0	2	6	10	11	1
125°	0	1	3	7	9	1
135°	1	1	1	2	3	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

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CATALOG NUMBER: HVL8-4-LD4-2STD-30-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2207.4	2207.4	2207.4	2207.4	2207.4
2.5°	2210.1	2204.3	2192.1	2203.8	2207.0
5°	2202.0	2197.5	2205.2	2229.9	2236.2
7.5°	2183.6	2200.7	2220.9	2265.9	2280.3
10°	2156.2	2188.6	2249.3	2287.5	2272.6
12.5°	2122.9	2177.8	2259.2	2184.5	2149.9
15°	2084.2	2164.3	2185.4	2113.0	2114.4
17.5°	2038.8	2153.0	2087.8	2086.0	2073.0
20°	1989.8	2115.3	2028.9	2025.3	2011.4
22.5°	1937.2	2065.3	1976.8	1969.6	2007.3
25°	1880.1	2000.1	1908.9	1966.0	1997.9
27.5°	1808.6	1914.7	1852.2	1933.1	1973.2
30°	1736.2	1826.6	1794.2	1907.1	1978.1
32.5°	1668.3	1734.4	1746.5	1897.2	1908.9
35°	1604.0	1648.5	1673.2	1825.2	1887.3
37.5°	1533.4	1545.5	1611.2	1795.1	1854.9
40°	1461.4	1453.8	1559.0	1745.6	1828.4
42.5°	1384.1	1381.4	1503.7	1720.9	1762.3
45°	1310.8	1316.6	1425.0	1650.7	1712.3
47.5°	1235.7	1243.3	1350.4	1573.9	1650.3
50°	1148.5	1158.4	1283.8	1505.5	1604.0
52.5°	1054.0	1072.9	1219.1	1440.7	1540.1
55°	965.4	981.2	1136.8	1385.4	1495.6
57.5°	884.5	893.9	1051.8	1315.7	1398.9
60°	804.9	807.2	971.7	1238.4	1318.0
62.5°	713.6	717.7	889.5	1147.1	1253.7
65°	611.1	630.4	800.9	1059.9	1156.1
67.5°	515.3	549.0	710.5	979.8	1030.2
70°	412.8	469.9	621.9	885.9	921.4
72.5°	318.8	385.8	531.1	780.6	830.5
75°	231.1	306.2	446.5	686.2	729.4
77.5°	155.6	232.0	367.4	581.9	639.0
80°	93.1	169.5	296.8	485.2	549.5
82.5°	47.7	113.8	230.2	407.0	464.5
85°	20.7	71.9	174.0	337.7	387.6
87.5°	5.8	40.9	128.2	273.0	315.2
90°	0.4	21.6	91.3	214.0	252.3
92.5°	0.4	10.3	64.3	161.9	191.1
95°	0.4	5.4	40.0	117.4	143.4
97.5°	0.4	3.1	24.3	83.2	105.2
100°	0.4	2.7	14.4	55.3	75.1
102.5°	0.4	3.1	9.9	35.1	49.0
105°	0.4	3.1	8.1	22.9	32.4
107.5°	0.9	3.1	7.2	17.1	22.5
110°	0.4	2.7	7.6	13.0	17.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.9	2.2	7.2	10.8	13.0
115°	0.4	1.8	6.3	10.3	10.8
117.5°	0.9	1.3	4.9	10.3	10.8
120°	0.9	0.9	4.0	9.9	11.2
122.5°	0.9	0.9	3.1	9.0	10.8
125°	0.4	0.9	2.7	6.7	9.4
127.5°	0.9	0.9	2.2	5.4	7.2
130°	0.9	0.9	1.8	4.0	5.4
132.5°	0.9	0.9	1.3	3.1	4.0
135°	0.9	0.9	0.9	2.2	3.1
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)