

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: P518073

Luminaire Tested: HVL8-4-LD4-2HI-50-UNV-O-EDD-90

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: P518073
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-2HI-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: 7268.0 lumens
Efficiency: N/A
Efficacy: 84.4 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

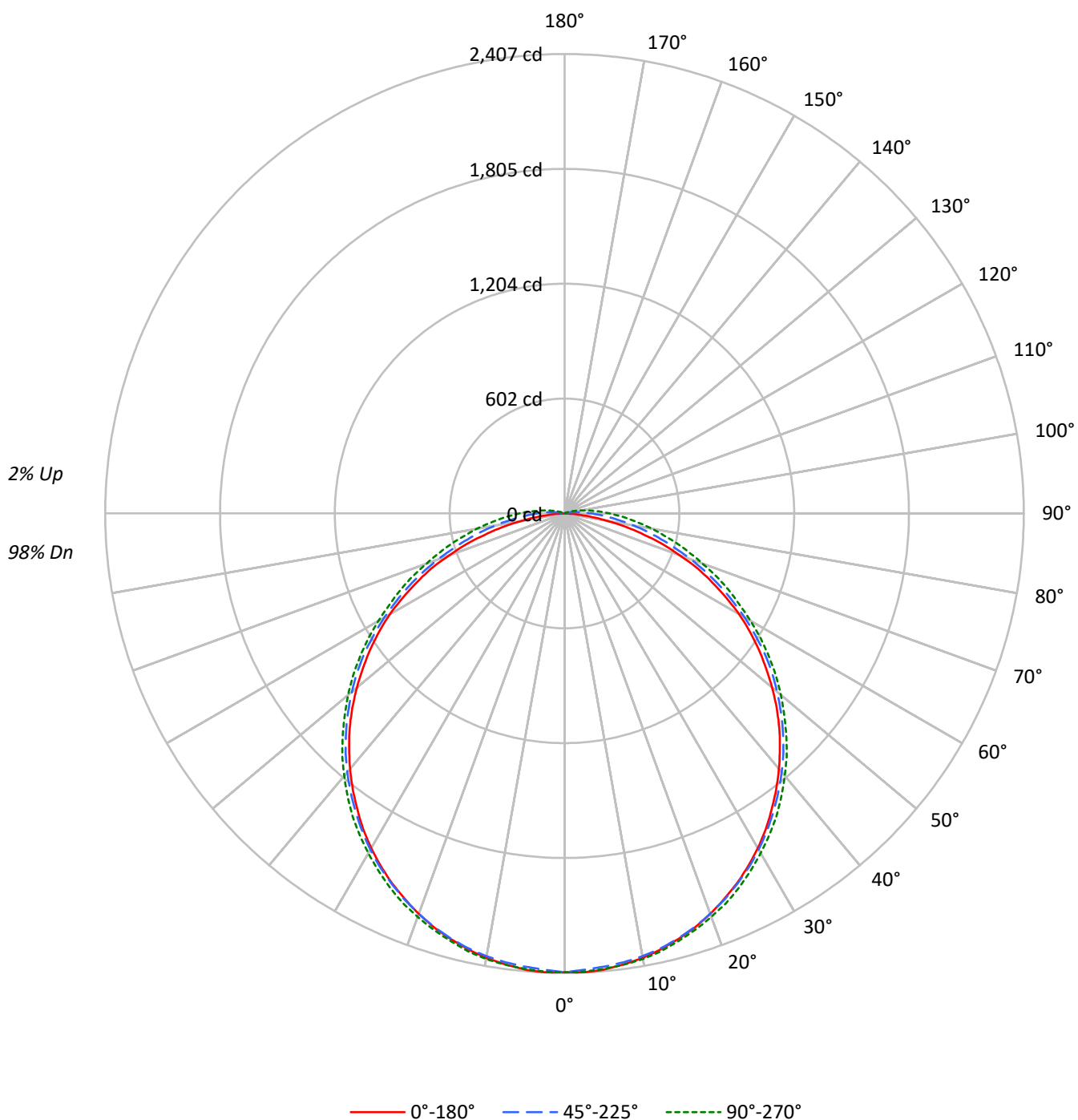
Input Watts (W): 86.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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

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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			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°	9703	9703	9703
5°	9684	9486	9495
10°	9619	9316	9305
15°	9536	9129	9077
20°	9447	8918	8855
25°	9341	8703	8629
30°	9218	8473	8374
35°	9062	8220	8120
40°	8900	7954	7824
45°	8726	7664	7504
50°	8499	7329	7161
55°	8254	6962	6782
60°	7962	6485	6340
65°	7487	5951	5901
70°	6805	5323	5392
75°	5836	4634	4928
80°	4390	3958	4505
85°	2346	3274	4102

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 8726 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	227.5	3.1
10°-20°	652.5	9.0
20°-30°	990.0	13.6
30°-40°	1197.1	16.5
40°-50°	1249.1	17.2
50°-60°	1142.1	15.7
60°-70°	890.3	12.2
70°-80°	556.9	7.7
80°-90°	252.9	3.5
90°-100°	84.8	1.2
100°-110°	21.3	0.3
110°-120°	3.4	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°	1870.0	25.7
0°-40°	3067.2	42.2
0°-60°	5458.3	75.1
0°-90°	7158.5	98.5
90°-120°	109.4	1.5
90°-150°	109.4	1.5
90°-180°	109.0	1.5
0°-180°	7268.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2404	2404	2404	2404	2404	
5°	2399	2394	2383	2395	2395	228
15°	2308	2311	2305	2318	2318	651
25°	2138	2140	2142	2160	2164	985
35°	1893	1901	1909	1928	1936	1185
45°	1592	1606	1620	1635	1643	1227
55°	1243	1257	1281	1299	1308	1110
65°	854	869	899	934	949	845
75°	432	459	526	589	611	461
85°	75	138	237	314	342	95
90°	1	52	140	210	236	3
95°	1	14	72	132	152	0
105°	1	2	12	35	47	1
115°	2	2	2	6	9	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: P518073

CATALOG NUMBER: HVL8-4-LD4-2HI-50-UNV-O-EDD-90

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2403.8	2403.8	2403.8	2403.8	2403.8
2.5°	2406.6	2403.2	2392.5	2403.2	2402.7
5°	2398.7	2394.2	2383.4	2394.7	2394.7
7.5°	2382.8	2381.1	2371.5	2384.5	2384.5
10°	2364.1	2363.6	2355.6	2369.8	2370.4
12.5°	2338.1	2340.3	2333.0	2346.6	2348.3
15°	2307.5	2311.4	2305.2	2318.2	2317.7
17.5°	2274.0	2276.3	2271.8	2286.5	2285.9
20°	2232.7	2235.5	2232.1	2247.4	2249.1
22.5°	2186.8	2190.7	2190.2	2206.0	2210.6
25°	2138.0	2139.7	2142.0	2160.1	2163.5
27.5°	2084.2	2087.0	2091.0	2107.4	2110.8
30°	2025.3	2029.8	2034.3	2051.3	2055.9
32.5°	1962.9	1967.5	1973.1	1995.2	1997.5
35°	1892.7	1901.2	1909.1	1928.4	1936.3
37.5°	1822.4	1833.2	1840.5	1860.9	1867.2
40°	1748.2	1758.9	1770.8	1792.4	1796.3
42.5°	1670.5	1683.0	1697.2	1716.4	1723.2
45°	1592.3	1606.5	1619.5	1635.4	1643.3
47.5°	1507.9	1522.1	1537.9	1556.1	1561.2
50°	1420.6	1437.1	1454.1	1471.1	1480.1
52.5°	1331.1	1350.9	1370.2	1388.3	1396.8
55°	1242.7	1257.4	1280.7	1299.4	1307.9
57.5°	1150.9	1163.4	1184.3	1214.9	1219.5
60°	1057.4	1068.7	1090.3	1115.2	1125.4
62.5°	954.3	969.6	992.2	1024.0	1033.0
65°	854.0	868.7	898.7	934.4	949.2
67.5°	757.1	762.2	800.7	838.1	861.9
70°	642.6	661.9	706.6	752.5	770.7
72.5°	544.0	563.3	612.6	666.4	689.1
75°	432.4	459.0	525.9	588.8	610.9
77.5°	334.3	363.8	446.5	510.0	535.5
80°	233.5	279.4	369.5	440.9	468.6
82.5°	146.8	203.4	299.8	374.6	398.9
85°	74.8	138.3	237.4	313.9	341.7
87.5°	19.8	89.5	184.7	257.8	286.2
90°	0.6	51.6	140.0	210.2	235.7
92.5°	0.6	28.9	104.3	167.2	193.2
95°	0.6	13.6	72.5	131.5	151.9
97.5°	0.6	5.7	49.9	99.2	119.6
100°	0.6	2.8	31.7	72.0	89.5
102.5°	1.1	1.7	19.8	51.6	65.7
105°	1.1	1.7	11.9	35.1	47.0
107.5°	1.1	1.7	6.8	23.8	32.3
110°	1.7	1.7	4.0	14.7	21.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.7	1.7	2.3	9.6	14.2
115°	1.7	1.7	2.3	6.2	9.1
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)