

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: P518191

Luminaire Tested: HVL8-8-LD4-1STD-35-UNV-C-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: P518191
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-1STD-35-UNV-C-EDD-90
Description: 8 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7351.0 lumens
Efficiency: N/A
Efficacy: 112.7 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 8' x H: 0.17')
CIE Type: Direct

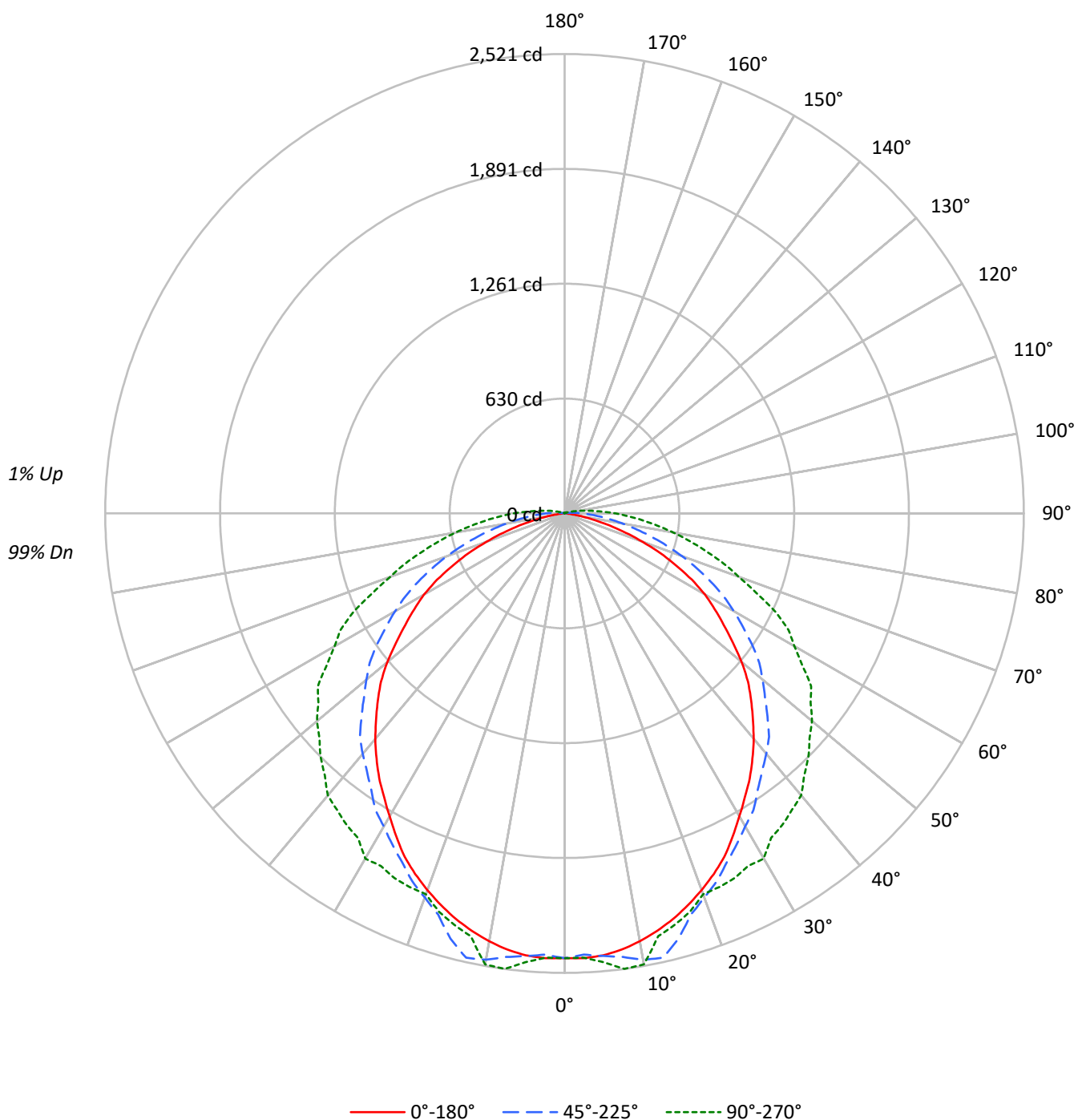
Input Watts (W): 65.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	4925	4925	4925
5°	4923	4857	4901
10°	4867	4929	4931
15°	4787	4801	4577
20°	4688	4503	4377
25°	4584	4314	4404
30°	4419	4162	4453
35°	4306	4018	4374
40°	4183	3912	4401
45°	4051	3773	4322
50°	3889	3628	4289
55°	3647	3472	4287
60°	3467	3256	4104
65°	3088	2997	3973
70°	2547	2658	3563
75°	1849	2245	3252
80°	1070	1828	2919
85°	428	1397	2572

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 4322 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	234.5	3.2
10°-20°	667.9	9.1
20°-30°	993.7	13.5
30°-40°	1194.4	16.2
40°-50°	1257.2	17.1
50°-60°	1166.6	15.9
60°-70°	922.4	12.5
70°-80°	563.4	7.7
80°-90°	245.5	3.3
90°-100°	76.4	1.0
100°-110°	17.2	0.2
110°-120°	6.9	0.1
120°-130°	3.9	0.1
130°-140°	1.1	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°	1896.1	25.8
0°-40°	3090.5	42.0
0°-60°	5514.3	75.0
0°-90°	7245.6	98.6
90°-120°	100.5	1.4
90°-150°	105.4	1.4
90°-180°	105.0	1.4
0°-180°	7351.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2440	2440	2440	2440	2440	
5°	2434	2429	2438	2465	2472	231
15°	2304	2392	2416	2336	2337	649
25°	2078	2211	2110	2173	2208	954
35°	1773	1822	1850	2018	2086	1108
45°	1449	1455	1575	1825	1893	1117
55°	1067	1085	1257	1532	1653	959
65°	676	697	885	1172	1278	669
75°	256	338	494	758	806	279
85°	23	80	192	373	428	35
90°	0	24	101	237	279	1
95°	0	6	44	130	159	0
105°	0	4	9	25	36	1
115°	0	2	7	11	12	1
125°	0	1	3	8	10	1
135°	1	1	1	2	4	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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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2440.1	2440.1	2440.1	2440.1	2440.1
2.5°	2443.1	2436.7	2423.2	2436.2	2439.6
5°	2434.2	2429.2	2437.6	2465.0	2471.9
7.5°	2413.8	2432.7	2455.0	2504.8	2520.7
10°	2383.5	2419.3	2486.4	2528.6	2512.2
12.5°	2346.7	2407.3	2497.3	2414.8	2376.5
15°	2303.9	2392.4	2415.8	2335.7	2337.2
17.5°	2253.7	2380.0	2307.9	2305.9	2291.5
20°	2199.5	2338.2	2242.8	2238.8	2223.4
22.5°	2141.4	2283.1	2185.1	2177.2	2218.9
25°	2078.3	2211.0	2110.1	2173.2	2208.5
27.5°	1999.2	2116.5	2047.4	2136.9	2181.2
30°	1919.2	2019.1	1983.3	2108.1	2186.6
32.5°	1844.1	1917.2	1930.6	2097.2	2110.1
35°	1773.1	1822.3	1849.6	2017.6	2086.2
37.5°	1695.0	1708.4	1781.0	1984.3	2050.4
40°	1615.5	1607.0	1723.4	1929.6	2021.1
42.5°	1530.0	1527.0	1662.2	1902.3	1948.0
45°	1449.0	1455.4	1575.2	1824.8	1892.9
47.5°	1366.0	1374.4	1492.7	1739.8	1824.3
50°	1269.5	1280.5	1419.1	1664.2	1773.1
52.5°	1165.1	1186.0	1347.6	1592.6	1702.5
55°	1067.2	1084.6	1256.6	1531.5	1653.3
57.5°	977.7	988.2	1162.7	1454.4	1546.4
60°	889.8	892.2	1074.2	1368.9	1456.9
62.5°	788.9	793.3	983.2	1268.0	1385.8
65°	675.5	696.9	885.3	1171.6	1278.0
67.5°	569.6	606.9	785.4	1083.1	1138.8
70°	456.3	519.4	687.5	979.2	1018.5
72.5°	352.4	426.5	587.0	862.9	918.1
75°	255.5	338.5	493.6	758.5	806.3
77.5°	172.0	256.5	406.1	643.2	706.3
80°	102.9	187.4	328.1	536.3	607.4
82.5°	52.7	125.8	254.5	449.9	513.5
85°	22.9	79.5	192.4	373.3	428.5
87.5°	6.5	45.2	141.7	301.7	348.4
90°	0.5	23.9	100.9	236.6	278.9
92.5°	0.5	11.4	71.1	178.9	211.3
95°	0.5	6.0	44.2	129.7	158.6
97.5°	0.5	3.5	26.8	92.0	116.3
100°	0.5	3.0	15.9	61.1	83.0
102.5°	0.5	3.5	10.9	38.8	54.2
105°	0.5	3.5	8.9	25.4	35.8
107.5°	1.0	3.5	8.0	18.9	24.9
110°	0.5	3.0	8.5	14.4	19.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.0	2.5	8.0	11.9	14.4
115°	0.5	2.0	7.0	11.4	11.9
117.5°	1.0	1.5	5.5	11.4	11.9
120°	1.0	1.0	4.5	10.9	12.4
122.5°	1.0	1.0	3.5	9.9	11.9
125°	0.5	1.0	3.0	7.5	10.4
127.5°	1.0	1.0	2.5	6.0	8.0
130°	1.0	1.0	2.0	4.5	6.0
132.5°	1.0	1.0	1.5	3.5	4.5
135°	1.0	1.0	1.0	2.5	3.5
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)