

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: P518163

Luminaire Tested: HVL8-8-LD4-1HI-40-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: P518163
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-8-LD4-1HI-40-UNV-C-EDD-90
Description: 8 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9554.0 lumens
Efficiency: N/A
Efficacy: 111.1 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

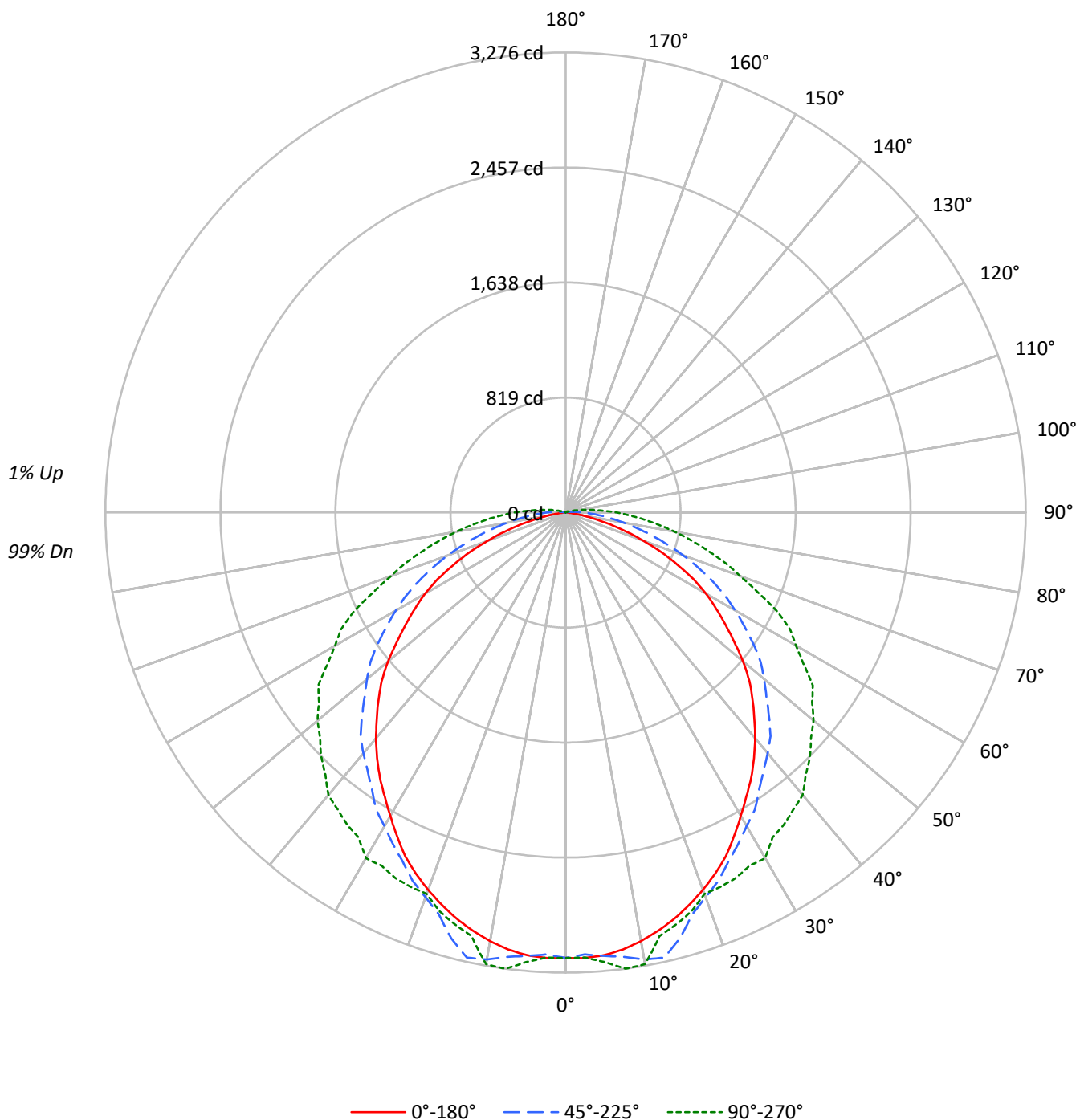
Input Watts (W): 86
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	6401	6401	6401
5°	6398	6313	6370
10°	6325	6406	6409
15°	6222	6240	5949
20°	6094	5852	5689
25°	5957	5606	5725
30°	5744	5409	5787
35°	5596	5222	5685
40°	5437	5084	5720
45°	5265	4904	5617
50°	5055	4715	5574
55°	4739	4512	5571
60°	4505	4231	5333
65°	4014	3895	5163
70°	3310	3454	4630
75°	2403	2917	4227
80°	1390	2375	3795
85°	555	1815	3343

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 5617 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	304.8	3.2
10°-20°	868.0	9.1
20°-30°	1291.5	13.5
30°-40°	1552.4	16.2
40°-50°	1634.0	17.1
50°-60°	1516.2	15.9
60°-70°	1198.8	12.5
70°-80°	732.3	7.7
80°-90°	319.0	3.3
90°-100°	99.3	1.0
100°-110°	22.3	0.2
110°-120°	9.0	0.1
120°-130°	5.0	0.1
130°-140°	1.4	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°	2464.3	25.8
0°-40°	4016.7	42.0
0°-60°	7166.9	75.0
0°-90°	9417.0	98.6
90°-120°	130.6	1.4
90°-150°	137.0	1.4
90°-180°	137.0	1.4
0°-180°	9554.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3171	3171	3171	3171	3171	
5°	3164	3157	3168	3204	3213	300
15°	2994	3109	3140	3036	3038	844
25°	2701	2874	2742	2824	2870	1240
35°	2304	2368	2404	2622	2711	1440
45°	1883	1892	2047	2372	2460	1452
55°	1387	1410	1633	1990	2149	1246
65°	878	906	1151	1523	1661	870
75°	332	440	642	986	1048	362
85°	30	103	250	485	557	46
90°	1	31	131	308	362	1
95°	1	8	58	169	206	0
105°	1	4	12	33	46	1
115°	1	3	9	15	16	1
125°	1	1	4	10	14	1
135°	1	1	1	3	4	1
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°	3171.4	3171.4	3171.4	3171.4	3171.4
2.5°	3175.3	3166.9	3149.4	3166.2	3170.8
5°	3163.7	3157.2	3168.2	3203.7	3212.8
7.5°	3137.2	3161.7	3190.8	3255.4	3276.1
10°	3097.8	3144.3	3231.5	3286.4	3265.1
12.5°	3050.0	3128.8	3245.7	3138.5	3088.7
15°	2994.4	3109.4	3139.8	3035.7	3037.7
17.5°	2929.1	3093.2	2999.6	2997.0	2978.2
20°	2858.7	3039.0	2914.9	2909.8	2889.7
22.5°	2783.1	2967.3	2840.0	2829.7	2883.9
25°	2701.1	2873.6	2742.4	2824.5	2870.4
27.5°	2598.4	2750.8	2661.0	2777.3	2834.8
30°	2494.4	2624.2	2577.7	2739.9	2841.9
32.5°	2396.8	2491.8	2509.2	2725.6	2742.4
35°	2304.4	2368.4	2403.9	2622.3	2711.4
37.5°	2203.0	2220.4	2314.8	2579.0	2664.9
40°	2099.6	2088.6	2239.8	2507.9	2626.8
42.5°	1988.5	1984.6	2160.4	2472.4	2531.8
45°	1883.2	1891.6	2047.3	2371.6	2460.1
47.5°	1775.3	1786.3	1940.1	2261.1	2371.0
50°	1650.0	1664.2	1844.4	2162.9	2304.4
52.5°	1514.3	1541.5	1751.4	2069.9	2212.7
55°	1387.0	1409.7	1633.2	1990.4	2148.7
57.5°	1270.8	1284.3	1511.1	1890.3	2009.8
60°	1156.4	1159.6	1396.1	1779.2	1893.5
62.5°	1025.3	1031.1	1277.9	1648.0	1801.2
65°	878.0	905.7	1150.6	1522.7	1661.0
67.5°	740.4	788.8	1020.7	1407.7	1480.1
70°	593.1	675.1	893.5	1272.7	1323.7
72.5°	458.0	554.3	763.0	1121.5	1193.2
75°	332.1	440.0	641.5	985.9	1047.9
77.5°	223.5	333.4	527.8	836.0	918.0
80°	133.7	243.6	426.4	697.1	789.5
82.5°	68.5	163.4	330.8	584.7	667.4
85°	29.7	103.4	250.0	485.2	556.9
87.5°	8.4	58.8	184.1	392.1	452.9
90°	0.6	31.0	131.1	307.5	362.4
92.5°	0.6	14.9	92.4	232.6	274.6
95°	0.6	7.8	57.5	168.6	206.1
97.5°	0.6	4.5	34.9	119.5	151.2
100°	0.6	3.9	20.7	79.5	107.9
102.5°	0.6	4.5	14.2	50.4	70.4
105°	0.6	4.5	11.6	32.9	46.5
107.5°	1.3	4.5	10.3	24.5	32.3
110°	0.6	3.9	11.0	18.7	25.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	1.3	3.2	10.3	15.5	18.7
115°	0.6	2.6	9.0	14.9	15.5
117.5°	1.3	1.9	7.1	14.9	15.5
120°	1.3	1.3	5.8	14.2	16.2
122.5°	1.3	1.3	4.5	12.9	15.5
125°	0.6	1.3	3.9	9.7	13.6
127.5°	1.3	1.3	3.2	7.8	10.3
130°	1.3	1.3	2.6	5.8	7.8
132.5°	1.3	1.3	1.9	4.5	5.8
135°	1.3	1.3	1.3	3.2	4.5
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)