

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: P518054

Luminaire Tested: HVL8-4-LD4-1STD-40-UNV-O-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: P518054
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-1STD-40-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2824.0 lumens
Efficiency: N/A
Efficacy: 86.6 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

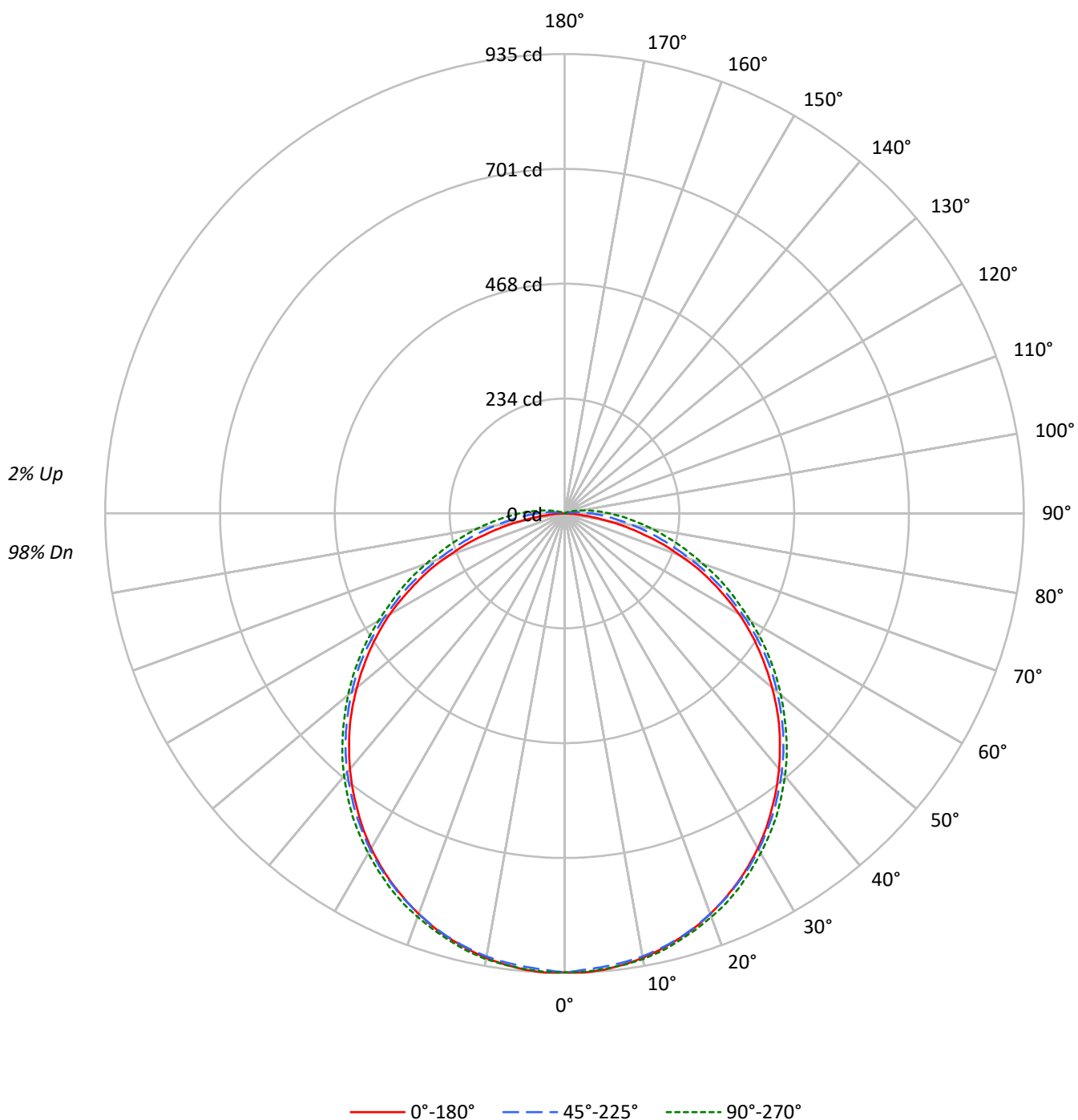
Input Watts (W): 32.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	3770	3770	3770
5°	3763	3686	3690
10°	3738	3620	3616
15°	3705	3547	3527
20°	3671	3465	3441
25°	3629	3382	3353
30°	3581	3292	3253
35°	3521	3194	3155
40°	3458	3091	3040
45°	3391	2978	2916
50°	3302	2848	2782
55°	3207	2705	2635
60°	3094	2520	2463
65°	2909	2312	2293
70°	2644	2068	2095
75°	2267	1800	1915
80°	1705	1538	1751
85°	913	1273	1594

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 3391 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	88.4	3.1
10°-20°	253.5	9.0
20°-30°	384.7	13.6
30°-40°	465.2	16.5
40°-50°	485.3	17.2
50°-60°	443.8	15.7
60°-70°	345.9	12.2
70°-80°	216.4	7.7
80°-90°	98.3	3.5
90°-100°	32.9	1.2
100°-110°	8.3	0.3
110°-120°	1.3	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°	726.6	25.7
0°-40°	1191.8	42.2
0°-60°	2120.9	75.1
0°-90°	2781.5	98.5
90°-120°	42.5	1.5
90°-150°	42.5	1.5
90°-180°	43.0	1.5
0°-180°	2824.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	934	934	934	934	934	
5°	932	930	926	930	930	89
15°	897	898	896	901	900	253
25°	831	831	832	839	841	383
35°	735	739	742	749	752	460
45°	619	624	629	635	638	477
55°	483	489	498	505	508	431
65°	332	338	349	363	369	328
75°	168	178	204	229	237	179
85°	29	54	92	122	133	37
90°	0	20	54	82	92	1
95°	0	5	28	51	59	0
105°	0	1	5	14	18	0
115°	1	1	1	2	4	0
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

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	934.0	934.0	934.0	934.0	934.0
2.5°	935.1	933.8	929.6	933.8	933.6
5°	932.0	930.3	926.1	930.5	930.5
7.5°	925.9	925.2	921.5	926.5	926.5
10°	918.6	918.4	915.3	920.8	921.0
12.5°	908.5	909.3	906.5	911.8	912.4
15°	896.6	898.1	895.7	900.8	900.5
17.5°	883.6	884.5	882.7	888.4	888.2
20°	867.5	868.6	867.3	873.2	873.9
22.5°	849.7	851.2	851.0	857.2	858.9
25°	830.7	831.4	832.3	839.3	840.7
27.5°	809.8	810.9	812.5	818.9	820.2
30°	786.9	788.7	790.5	797.1	798.8
32.5°	762.7	764.5	766.7	775.3	776.1
35°	735.4	738.7	741.8	749.3	752.4
37.5°	708.1	712.3	715.1	723.1	725.5
40°	679.3	683.4	688.1	696.4	698.0
42.5°	649.1	653.9	659.4	666.9	669.6
45°	618.7	624.2	629.3	635.4	638.5
47.5°	585.9	591.4	597.6	604.6	606.6
50°	552.0	558.4	565.0	571.6	575.1
52.5°	517.2	524.9	532.4	539.4	542.7
55°	482.9	488.6	497.6	504.9	508.2
57.5°	447.2	452.0	460.2	472.1	473.8
60°	410.9	415.3	423.6	433.3	437.3
62.5°	370.8	376.7	385.5	397.9	401.4
65°	331.8	337.5	349.2	363.1	368.8
67.5°	294.2	296.1	311.1	325.6	334.9
70°	249.7	257.2	274.6	292.4	299.4
72.5°	211.4	218.9	238.0	258.9	267.7
75°	168.0	178.3	204.3	228.8	237.4
77.5°	129.9	141.4	173.5	198.2	208.1
80°	90.7	108.5	143.6	171.3	182.1
82.5°	57.0	79.0	116.5	145.5	155.0
85°	29.1	53.7	92.3	122.0	132.8
87.5°	7.7	34.8	71.8	100.2	111.2
90°	0.2	20.0	54.4	81.7	91.6
92.5°	0.2	11.2	40.5	65.0	75.1
95°	0.2	5.3	28.2	51.1	59.0
97.5°	0.2	2.2	19.4	38.5	46.5
100°	0.2	1.1	12.3	28.0	34.8
102.5°	0.4	0.7	7.7	20.0	25.5
105°	0.4	0.7	4.6	13.7	18.3
107.5°	0.4	0.7	2.6	9.2	12.6
110°	0.7	0.7	1.5	5.7	8.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.7	0.7	0.9	3.7	5.5
115°	0.7	0.7	0.9	2.4	3.5
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)