

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: P518042

Luminaire Tested: HVL8-4-LD4-1LO-50-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: P518042
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-1LO-50-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2309.0 lumens
Efficiency: N/A
Efficacy: 100.4 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

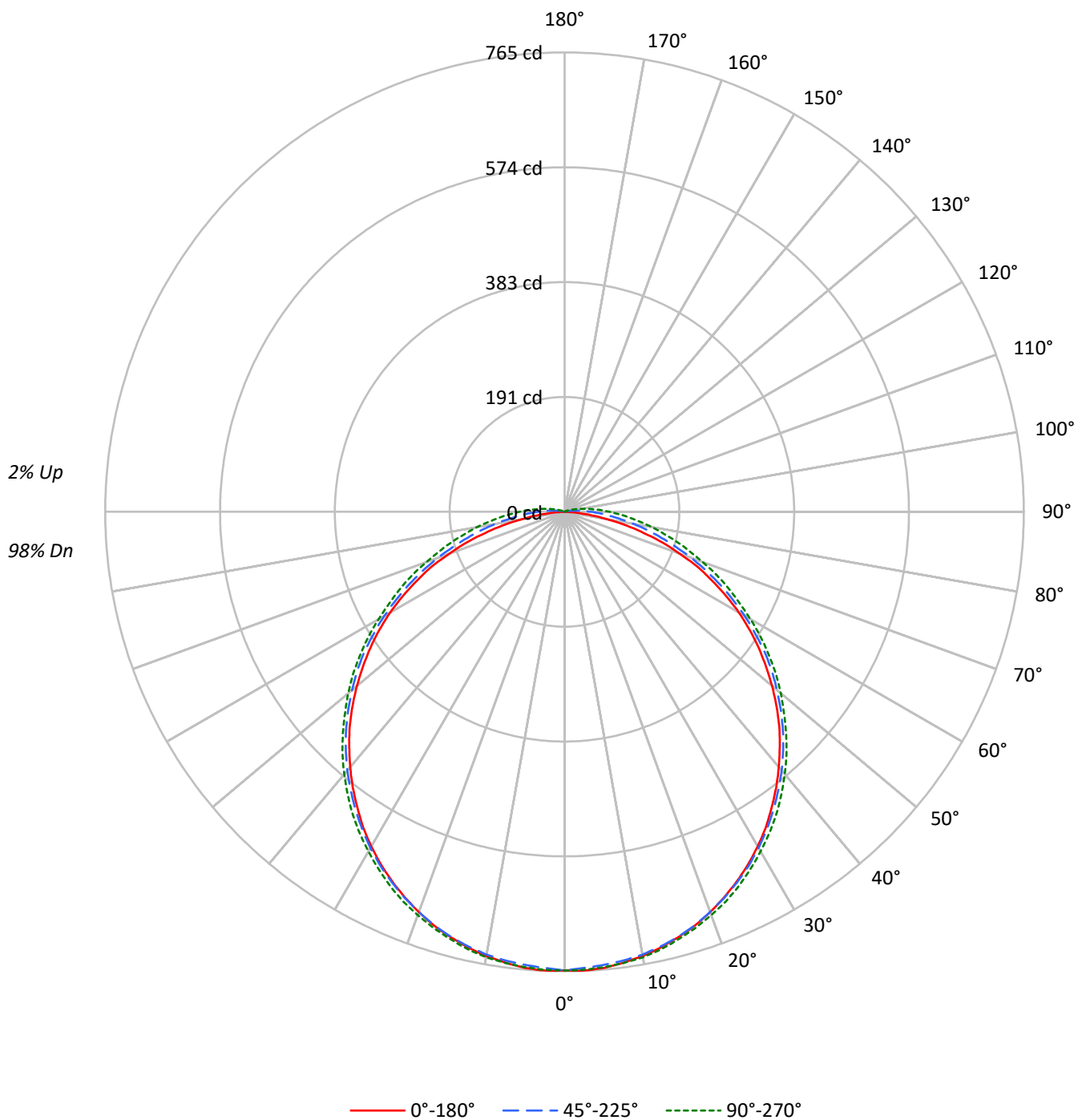
Input Watts (W): 23
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	3083	3083	3083
5°	3077	3014	3017
10°	3056	2960	2956
15°	3030	2900	2884
20°	3001	2833	2813
25°	2967	2765	2741
30°	2928	2692	2660
35°	2879	2611	2580
40°	2828	2527	2486
45°	2772	2435	2384
50°	2700	2329	2275
55°	2622	2212	2155
60°	2529	2060	2014
65°	2379	1891	1874
70°	2162	1691	1713
75°	1854	1472	1566
80°	1395	1258	1431
85°	747	1040	1304

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 2772 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	72.3	3.1
10°-20°	207.3	9.0
20°-30°	314.5	13.6
30°-40°	380.3	16.5
40°-50°	396.9	17.2
50°-60°	362.8	15.7
60°-70°	282.8	12.2
70°-80°	176.9	7.7
80°-90°	80.4	3.5
90°-100°	26.9	1.2
100°-110°	6.8	0.3
110°-120°	1.1	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°	594.1	25.7
0°-40°	974.4	42.2
0°-60°	1734.1	75.1
0°-90°	2274.3	98.5
90°-120°	34.8	1.5
90°-150°	34.8	1.5
90°-180°	35.0	1.5
0°-180°	2309.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	764	764	764	764	764	
5°	762	761	757	761	761	72
15°	733	734	732	736	736	207
25°	679	680	680	686	687	313
35°	601	604	606	613	615	376
45°	506	510	514	520	522	390
55°	395	400	407	413	416	353
65°	271	276	286	297	302	268
75°	137	146	167	187	194	146
85°	24	44	75	100	109	30
90°	0	16	44	67	75	1
95°	0	4	23	42	48	0
105°	0	0	4	11	15	0
115°	0	0	1	2	3	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°	763.7	763.7	763.7	763.7	763.7
2.5°	764.6	763.5	760.1	763.5	763.3
5°	762.1	760.6	757.2	760.8	760.8
7.5°	757.0	756.5	753.4	757.6	757.6
10°	751.1	750.9	748.4	752.9	753.1
12.5°	742.8	743.5	741.2	745.5	746.0
15°	733.1	734.3	732.4	736.5	736.3
17.5°	722.5	723.2	721.7	726.4	726.2
20°	709.3	710.2	709.1	714.0	714.5
22.5°	694.7	696.0	695.8	700.8	702.3
25°	679.2	679.8	680.5	686.3	687.3
27.5°	662.1	663.0	664.3	669.5	670.6
30°	643.4	644.9	646.3	651.7	653.1
32.5°	623.6	625.1	626.9	633.9	634.6
35°	601.3	604.0	606.5	612.6	615.2
37.5°	579.0	582.4	584.7	591.2	593.2
40°	555.4	558.8	562.6	569.4	570.7
42.5°	530.7	534.7	539.2	545.3	547.5
45°	505.9	510.4	514.5	519.6	522.1
47.5°	479.1	483.6	488.6	494.4	496.0
50°	451.3	456.6	462.0	467.4	470.2
52.5°	422.9	429.2	435.3	441.1	443.8
55°	394.8	399.5	406.9	412.8	415.5
57.5°	365.6	369.6	376.3	386.0	387.4
60°	335.9	339.5	346.4	354.3	357.5
62.5°	303.2	308.0	315.2	325.3	328.2
65°	271.3	276.0	285.5	296.9	301.5
67.5°	240.5	242.1	254.4	266.3	273.8
70°	204.2	210.3	224.5	239.1	244.8
72.5°	172.8	178.9	194.6	211.7	218.9
75°	137.4	145.8	167.1	187.0	194.1
77.5°	106.2	115.6	141.9	162.0	170.1
80°	74.2	88.8	117.4	140.1	148.9
82.5°	46.6	64.6	95.2	119.0	126.7
85°	23.8	43.9	75.4	99.7	108.6
87.5°	6.3	28.4	58.7	81.9	90.9
90°	0.2	16.4	44.5	66.8	74.9
92.5°	0.2	9.2	33.1	53.1	61.4
95°	0.2	4.3	23.0	41.8	48.2
97.5°	0.2	1.8	15.8	31.5	38.0
100°	0.2	0.9	10.1	22.9	28.4
102.5°	0.4	0.5	6.3	16.4	20.9
105°	0.4	0.5	3.8	11.2	14.9
107.5°	0.4	0.5	2.2	7.6	10.3
110°	0.5	0.5	1.3	4.7	6.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	0.5	0.7	3.1	4.5
115°	0.5	0.5	0.7	2.0	2.9
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)