

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: P517187

Luminaire Tested: HVL12-1-LD4-1STD-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: P517187
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-1STD-40-UNV-C-EDD-90
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 814.0 lumens
Efficiency: N/A
Efficacy: 96.9 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 1' x H: 0.17')
CIE Type: Direct

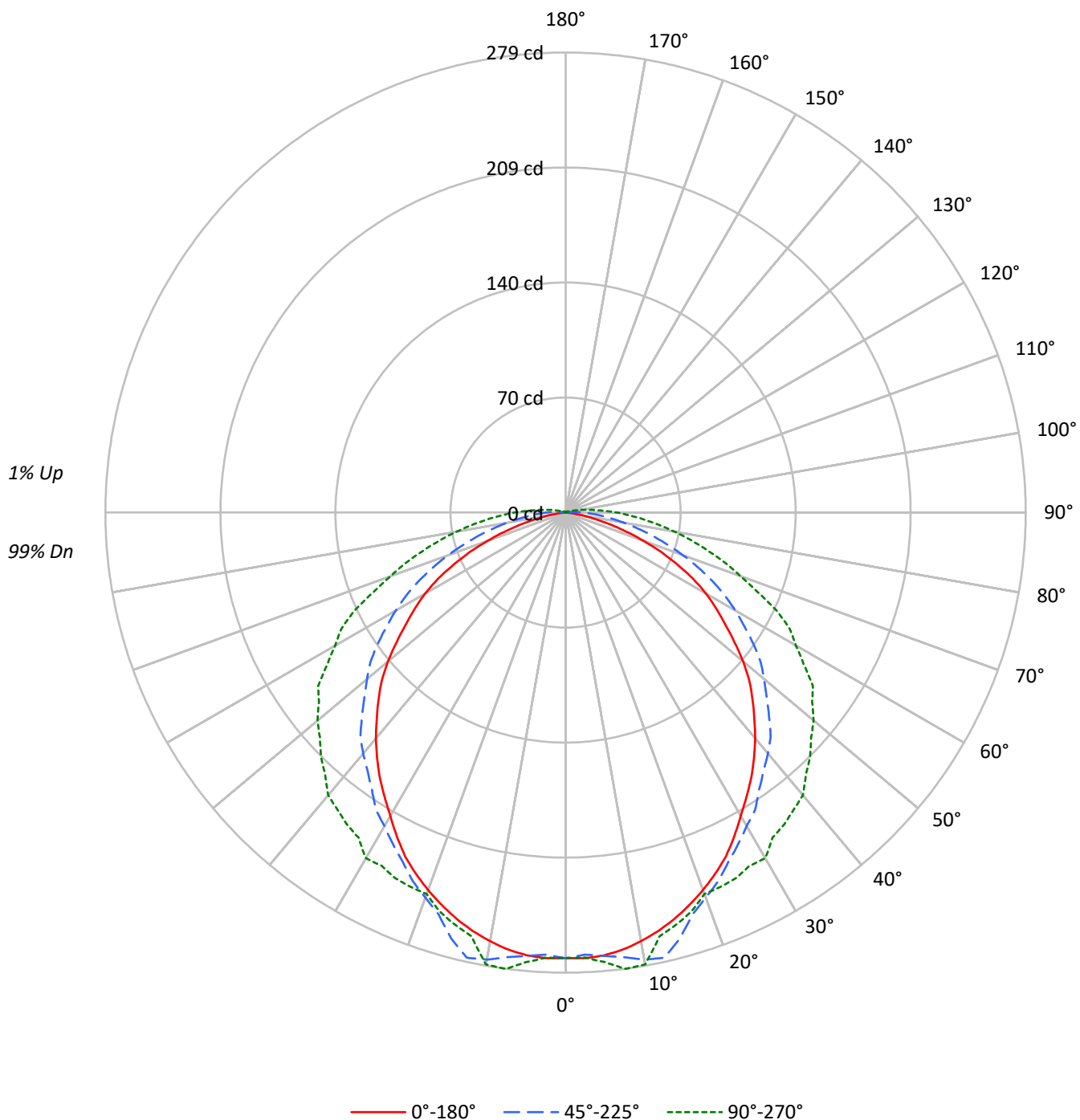
Input Watts (W): 8.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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	44	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°	2908	2908	2908
5°	2870	2857	2915
10°	2802	2889	2954
15°	2721	2804	2761
20°	2631	2620	2659
25°	2536	2501	2696
30°	2409	2402	2745
35°	2310	2310	2718
40°	2205	2238	2759
45°	2093	2148	2735
50°	1964	2054	2742
55°	1792	1953	2775
60°	1645	1818	2694
65°	1403	1658	2655
70°	1090	1454	2435
75°	726	1210	2289
80°	363	963	2144
85°	106	712	2015

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 2775 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	26.0	3.2
10°-20°	74.0	9.1
20°-30°	110.0	13.5
30°-40°	132.3	16.2
40°-50°	139.2	17.1
50°-60°	129.2	15.9
60°-70°	102.1	12.5
70°-80°	62.4	7.7
80°-90°	27.2	3.3
90°-100°	8.5	1.0
100°-110°	1.9	0.2
110°-120°	0.8	0.1
120°-130°	0.4	0.1
130°-140°	0.1	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°	210.0	25.8
0°-40°	342.2	42.0
0°-60°	610.6	75.0
0°-90°	802.3	98.6
90°-120°	11.2	1.4
90°-150°	11.7	1.4
90°-180°	12.0	1.5
0°-180°	814.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	270	270	270	270	270	
5°	270	269	270	273	274	26
15°	255	265	268	259	259	72
25°	230	245	234	241	245	106
35°	196	202	205	223	231	123
45°	160	161	174	202	210	124
55°	118	120	139	170	183	106
65°	75	77	98	130	142	74
75°	28	38	55	84	89	31
85°	2	9	21	41	47	4
90°	0	3	11	26	31	0
95°	0	1	5	14	18	0
105°	0	0	1	3	4	0
115°	0	0	1	1	1	0
125°	0	0	0	1	1	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°	270.2	270.2	270.2	270.2	270.2
2.5°	270.5	269.8	268.3	269.8	270.1
5°	269.5	269.0	269.9	273.0	273.7
7.5°	267.3	269.4	271.9	277.4	279.1
10°	263.9	267.9	275.3	280.0	278.2
12.5°	259.9	266.6	276.5	267.4	263.2
15°	255.1	264.9	267.5	258.6	258.8
17.5°	249.6	263.5	255.6	255.3	253.7
20°	243.6	258.9	248.4	247.9	246.2
22.5°	237.1	252.8	242.0	241.1	245.7
25°	230.1	244.8	233.7	240.6	244.6
27.5°	221.4	234.4	226.7	236.6	241.5
30°	212.5	223.6	219.6	233.4	242.1
32.5°	204.2	212.3	213.8	232.2	233.7
35°	196.3	201.8	204.8	223.4	231.0
37.5°	187.7	189.2	197.2	219.7	227.1
40°	178.9	178.0	190.8	213.7	223.8
42.5°	169.4	169.1	184.1	210.6	215.7
45°	160.4	161.2	174.4	202.1	209.6
47.5°	151.3	152.2	165.3	192.6	202.0
50°	140.6	141.8	157.1	184.3	196.3
52.5°	129.0	131.3	149.2	176.4	188.5
55°	118.2	120.1	139.1	169.6	183.1
57.5°	108.3	109.4	128.7	161.1	171.2
60°	98.5	98.8	118.9	151.6	161.3
62.5°	87.4	87.8	108.9	140.4	153.5
65°	74.8	77.2	98.0	129.7	141.5
67.5°	63.1	67.2	87.0	119.9	126.1
70°	50.5	57.5	76.1	108.4	112.8
72.5°	39.0	47.2	65.0	95.6	101.7
75°	28.3	37.5	54.7	84.0	89.3
77.5°	19.0	28.4	45.0	71.2	78.2
80°	11.4	20.8	36.3	59.4	67.3
82.5°	5.8	13.9	28.2	49.8	56.9
85°	2.5	8.8	21.3	41.3	47.4
87.5°	0.7	5.0	15.7	33.4	38.6
90°	0.1	2.6	11.2	26.2	30.9
92.5°	0.1	1.3	7.9	19.8	23.4
95°	0.1	0.7	4.9	14.4	17.6
97.5°	0.1	0.4	3.0	10.2	12.9
100°	0.1	0.3	1.8	6.8	9.2
102.5°	0.1	0.4	1.2	4.3	6.0
105°	0.1	0.4	1.0	2.8	4.0
107.5°	0.1	0.4	0.9	2.1	2.8
110°	0.1	0.3	0.9	1.6	2.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.1	0.3	0.9	1.3	1.6
115°	0.1	0.2	0.8	1.3	1.3
117.5°	0.1	0.2	0.6	1.3	1.3
120°	0.1	0.1	0.5	1.2	1.4
122.5°	0.1	0.1	0.4	1.1	1.3
125°	0.1	0.1	0.3	0.8	1.2
127.5°	0.1	0.1	0.3	0.7	0.9
130°	0.1	0.1	0.2	0.5	0.7
132.5°	0.1	0.1	0.2	0.4	0.5
135°	0.1	0.1	0.1	0.3	0.4
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)