

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: P517324

Luminaire Tested: HVL12-2-LD4-1STD-30-UNV-C-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: P517324
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-2-LD4-1STD-30-UNV-C-EDD
Description: 2 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1827.9 lumens
Efficiency: N/A
Efficacy: 109.5 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 2' x H: 0.17')
CIE Type: Direct

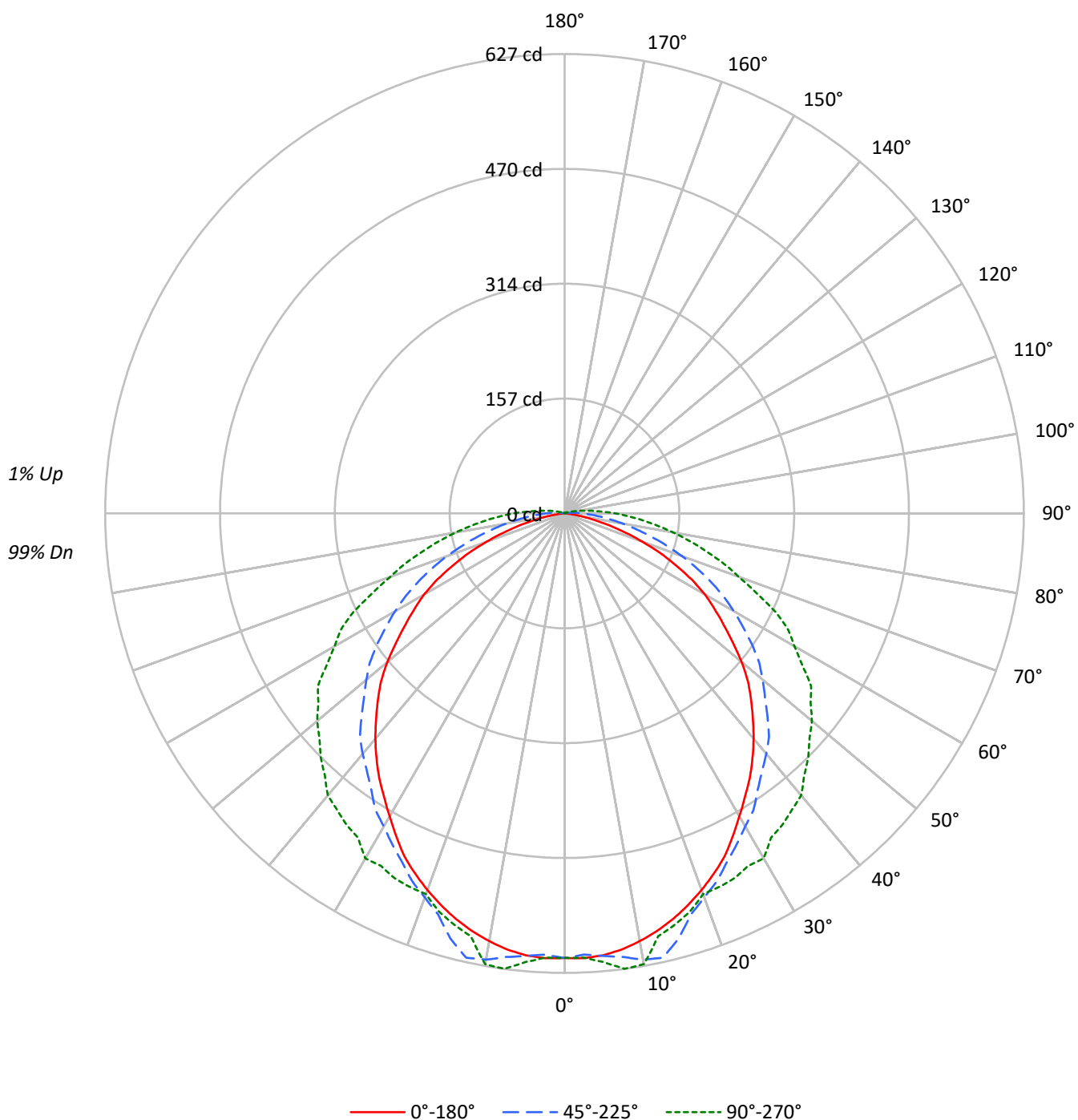
Input Watts (W): 16.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	3266	3266	3266
5°	3246	3225	3273
10°	3192	3277	3316
15°	3122	3196	3100
20°	3041	3001	2986
25°	2954	2879	3026
30°	2830	2781	3083
35°	2737	2689	3052
40°	2638	2622	3098
45°	2531	2533	3071
50°	2404	2441	3080
55°	2225	2341	3116
60°	2082	2201	3026
65°	1815	2032	2981
70°	1453	1811	2734
75°	1007	1537	2570
80°	539	1263	2407
85°	180	977	2266

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 3116 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	58.3	3.2
10°-20°	166.1	9.1
20°-30°	247.1	13.5
30°-40°	297.0	16.2
40°-50°	312.6	17.1
50°-60°	290.1	15.9
60°-70°	229.4	12.5
70°-80°	140.1	7.7
80°-90°	61.0	3.3
90°-100°	19.0	1.0
100°-110°	4.3	0.2
110°-120°	1.7	0.1
120°-130°	1.0	0.1
130°-140°	0.3	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°	471.5	25.8
0°-40°	768.5	42.0
0°-60°	1371.2	75.0
0°-90°	1801.8	98.6
90°-120°	25.0	1.4
90°-150°	26.2	1.4
90°-180°	26.0	1.4
0°-180°	1827.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	607	607	607	607	607	
5°	605	604	606	613	615	57
15°	573	595	601	581	581	161
25°	517	550	525	540	549	237
35°	441	453	460	502	519	276
45°	360	362	392	454	471	278
55°	265	270	312	381	411	238
65°	168	173	220	291	318	166
75°	64	84	123	189	200	69
85°	6	20	48	93	107	9
90°	0	6	25	59	69	0
95°	0	2	11	32	39	0
105°	0	1	2	6	9	0
115°	0	0	2	3	3	0
125°	0	0	1	2	3	0
135°	0	0	0	1	1	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°	606.8	606.8	606.8	606.8	606.8
2.5°	607.5	605.9	602.6	605.8	606.7
5°	605.3	604.1	606.2	613.0	614.7
7.5°	600.2	604.9	610.5	622.9	626.8
10°	592.7	601.6	618.3	628.8	624.7
12.5°	583.6	598.6	621.0	600.5	591.0
15°	572.9	594.9	600.7	580.8	581.2
17.5°	560.4	591.8	573.9	573.4	569.8
20°	547.0	581.5	557.7	556.7	552.9
22.5°	532.5	567.7	543.4	541.4	551.8
25°	516.8	549.8	524.7	540.4	549.2
27.5°	497.2	526.3	509.1	531.4	542.4
30°	477.3	502.1	493.2	524.2	543.8
32.5°	458.6	476.8	480.1	521.5	524.7
35°	440.9	453.2	459.9	501.7	518.8
37.5°	421.5	424.8	442.9	493.4	509.9
40°	401.7	399.6	428.6	479.9	502.6
42.5°	380.5	379.7	413.3	473.1	484.4
45°	360.3	361.9	391.7	453.8	470.7
47.5°	339.7	341.8	371.2	432.6	453.6
50°	315.7	318.4	352.9	413.8	440.9
52.5°	289.7	294.9	335.1	396.0	423.4
55°	265.4	269.7	312.5	380.8	411.1
57.5°	243.1	245.7	289.1	361.7	384.5
60°	221.3	221.9	267.1	340.4	362.3
62.5°	196.2	197.3	244.5	315.3	344.6
65°	168.0	173.3	220.1	291.3	317.8
67.5°	141.7	150.9	195.3	269.3	283.2
70°	113.5	129.2	171.0	243.5	253.3
72.5°	87.6	106.1	146.0	214.6	228.3
75°	63.5	84.2	122.7	188.6	200.5
77.5°	42.8	63.8	101.0	160.0	175.6
80°	25.6	46.6	81.6	133.4	151.1
82.5°	13.1	31.3	63.3	111.9	127.7
85°	5.7	19.8	47.8	92.8	106.6
87.5°	1.6	11.2	35.2	75.0	86.6
90°	0.1	5.9	25.1	58.8	69.3
92.5°	0.1	2.8	17.7	44.5	52.5
95°	0.1	1.5	11.0	32.3	39.4
97.5°	0.1	0.9	6.7	22.9	28.9
100°	0.1	0.7	4.0	15.2	20.6
102.5°	0.1	0.9	2.7	9.6	13.5
105°	0.1	0.9	2.2	6.3	8.9
107.5°	0.2	0.9	2.0	4.7	6.2
110°	0.1	0.7	2.1	3.6	4.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.2	0.6	2.0	3.0	3.6
115°	0.1	0.5	1.7	2.8	3.0
117.5°	0.2	0.4	1.4	2.8	3.0
120°	0.2	0.2	1.1	2.7	3.1
122.5°	0.2	0.2	0.9	2.5	3.0
125°	0.1	0.2	0.7	1.9	2.6
127.5°	0.2	0.2	0.6	1.5	2.0
130°	0.2	0.2	0.5	1.1	1.5
132.5°	0.2	0.2	0.4	0.9	1.1
135°	0.2	0.2	0.2	0.6	0.9
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)