

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: P517287

Luminaire Tested: HVL12-1-LD4-3STD-50-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: P517287
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-1-LD4-3STD-50-UNV-C-EDD-90
Description: 1 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2567.0 lumens
Efficiency: N/A
Efficacy: 104.8 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

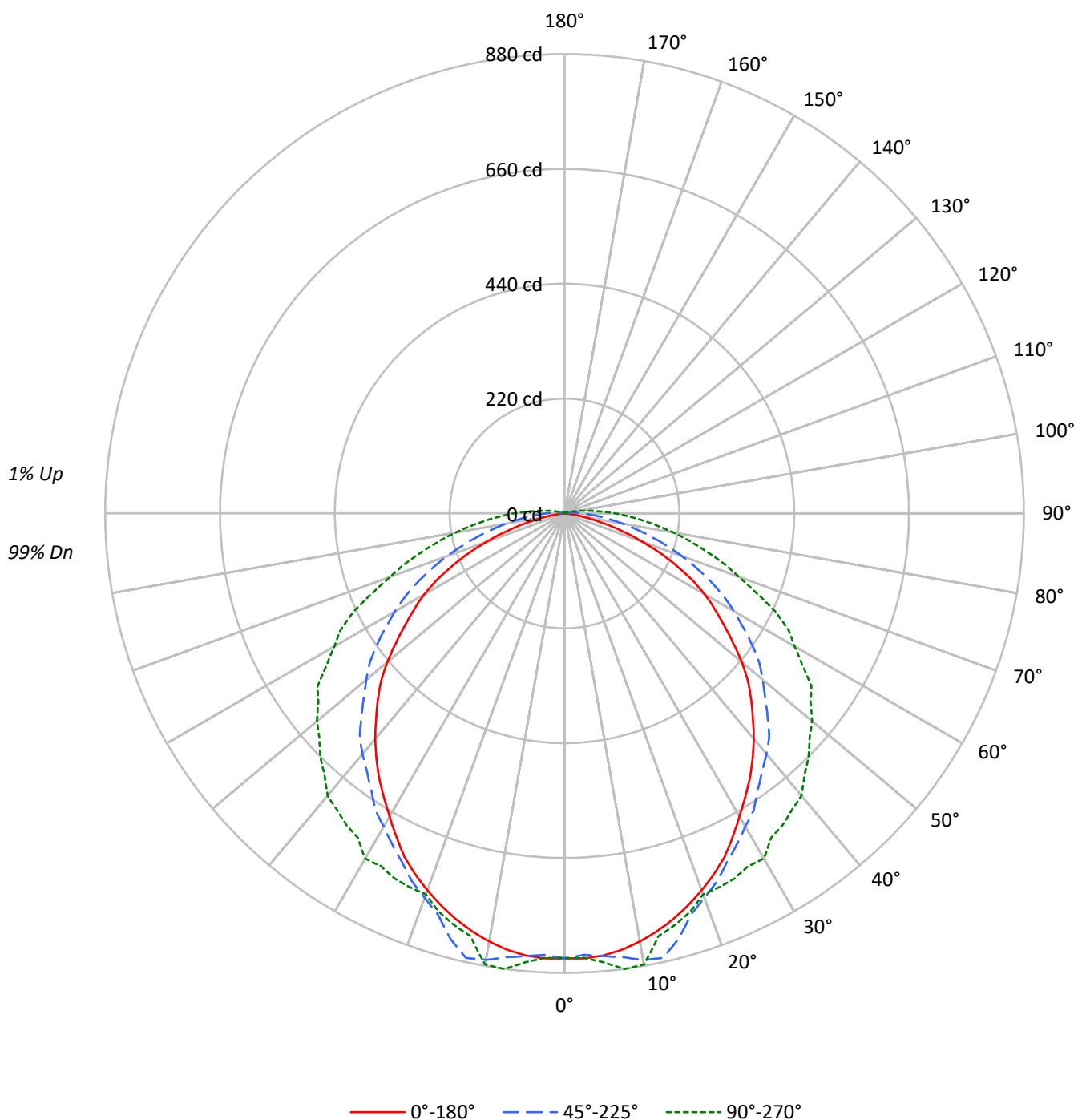
Input Watts (W): 24.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	9172	9172	9172
5°	9052	9011	9193
10°	8837	9111	9315
15°	8582	8842	8707
20°	8295	8262	8385
25°	7997	7884	8499
30°	7599	7577	8658
35°	7286	7285	8572
40°	6954	7060	8700
45°	6602	6776	8624
50°	6193	6479	8650
55°	5649	6161	8751
60°	5190	5734	8499
65°	4426	5229	8374
70°	3439	4586	7678
75°	2287	3814	7217
80°	1144	3040	6758
85°	340	2246	6359

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 55°

Luminance: 8751 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	81.9	3.2
10°-20°	233.2	9.1
20°-30°	347.0	13.5
30°-40°	417.1	16.2
40°-50°	439.0	17.1
50°-60°	407.4	15.9
60°-70°	322.1	12.5
70°-80°	196.7	7.7
80°-90°	85.7	3.3
90°-100°	26.7	1.0
100°-110°	6.0	0.2
110°-120°	2.4	0.1
120°-130°	1.3	0.1
130°-140°	0.4	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°	662.1	25.8
0°-40°	1079.2	42.0
0°-60°	1925.6	75.0
0°-90°	2530.2	98.6
90°-120°	35.1	1.4
90°-150°	36.8	1.4
90°-180°	37.0	1.4
0°-180°	2567.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	852	852	852	852	852	
5°	850	848	851	861	863	81
15°	804	835	844	816	816	227
25°	726	772	737	759	771	333
35°	619	636	646	705	728	387
45°	506	508	550	637	661	390
55°	373	379	439	535	577	335
65°	236	243	309	409	446	234
75°	89	118	172	265	282	97
85°	8	28	67	130	150	12
90°	0	8	35	83	97	0
95°	0	2	15	45	55	0
105°	0	1	3	9	12	0
115°	0	1	2	4	4	0
125°	0	0	1	3	4	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°	852.1	852.1	852.1	852.1	852.1
2.5°	853.1	850.9	846.2	850.7	851.9
5°	850.0	848.3	851.2	860.8	863.2
7.5°	842.9	849.5	857.3	874.7	880.2
10°	832.3	844.8	868.2	883.0	877.3
12.5°	819.5	840.6	872.1	843.3	829.9
15°	804.5	835.4	843.6	815.7	816.2
17.5°	787.0	831.1	805.9	805.2	800.2
20°	768.1	816.5	783.2	781.8	776.4
22.5°	747.8	797.3	763.1	760.3	774.9
25°	725.7	772.1	736.8	758.9	771.2
27.5°	698.1	739.1	715.0	746.2	761.7
30°	670.2	705.1	692.6	736.2	763.6
32.5°	644.0	669.5	674.2	732.3	736.8
35°	619.2	636.3	645.9	704.6	728.5
37.5°	591.9	596.6	621.9	692.9	716.0
40°	564.1	561.2	601.8	673.8	705.8
42.5°	534.3	533.2	580.5	664.3	680.3
45°	506.0	508.2	550.1	637.2	661.0
47.5°	477.0	479.9	521.3	607.5	637.0
50°	443.3	447.1	495.6	581.1	619.2
52.5°	406.9	414.2	470.6	556.2	594.5
55°	372.7	378.8	438.8	534.8	577.3
57.5°	341.4	345.1	406.0	507.9	540.0
60°	310.7	311.6	375.1	478.0	508.8
62.5°	275.5	277.0	343.3	442.8	483.9
65°	235.9	243.4	309.1	409.1	446.3
67.5°	198.9	211.9	274.3	378.2	397.7
70°	159.3	181.4	240.1	342.0	355.7
72.5°	123.1	148.9	205.0	301.3	320.6
75°	89.2	118.2	172.4	264.9	281.5
77.5°	60.1	89.6	141.8	224.6	246.7
80°	35.9	65.4	114.6	187.3	212.1
82.5°	18.4	43.9	88.9	157.1	179.3
85°	8.0	27.8	67.2	130.4	149.6
87.5°	2.3	15.8	49.5	105.4	121.7
90°	0.2	8.3	35.2	82.6	97.4
92.5°	0.2	4.0	24.8	62.5	73.8
95°	0.2	2.1	15.4	45.3	55.4
97.5°	0.2	1.2	9.4	32.1	40.6
100°	0.2	1.0	5.6	21.4	29.0
102.5°	0.2	1.2	3.8	13.5	18.9
105°	0.2	1.2	3.1	8.9	12.5
107.5°	0.3	1.2	2.8	6.6	8.7
110°	0.2	1.0	3.0	5.0	6.8

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.9	2.8	4.2	5.0
115°	0.2	0.7	2.4	4.0	4.2
117.5°	0.3	0.5	1.9	4.0	4.2
120°	0.3	0.3	1.6	3.8	4.3
122.5°	0.3	0.3	1.2	3.5	4.2
125°	0.2	0.3	1.0	2.6	3.6
127.5°	0.3	0.3	0.9	2.1	2.8
130°	0.3	0.3	0.7	1.6	2.1
132.5°	0.3	0.3	0.5	1.2	1.6
135°	0.3	0.3	0.3	0.9	1.2
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)