

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: P517701

Luminaire Tested: HVL12-8-LD4-3LO-40-UNV-O-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: P517701
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-3LO-40-UNV-O-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13711.0 lumens
Efficiency: N/A
Efficacy: 99.1 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 1' x L: 8' x H: 0.17')
CIE Type: Direct

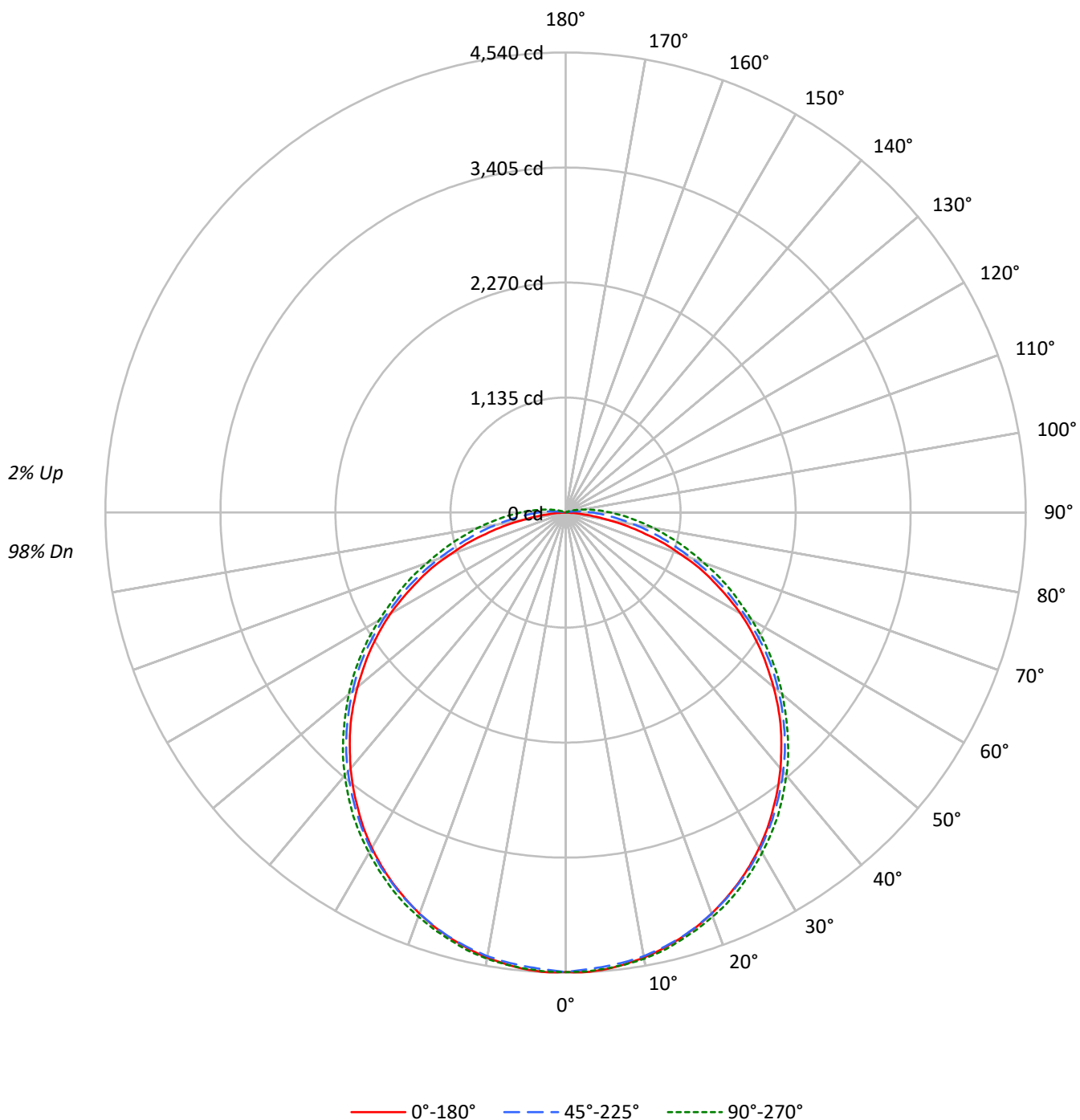
Input Watts (W): 138.4
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			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°	6102	6102	6102
5°	6101	6003	6014
10°	6071	5933	5935
15°	6030	5850	5830
20°	5985	5752	5728
25°	5930	5650	5622
30°	5865	5539	5497
35°	5780	5413	5373
40°	5693	5280	5222
45°	5599	5133	5056
50°	5474	4958	4876
55°	5341	4765	4675
60°	5181	4501	4433
65°	4910	4203	4199
70°	4511	3844	3923
75°	3935	3450	3693
80°	3052	3082	3521
85°	1759	2749	3425

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 5599 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	429.1	3.1
10°-20°	1230.9	9.0
20°-30°	1867.7	13.6
30°-40°	2258.4	16.5
40°-50°	2356.5	17.2
50°-60°	2154.5	15.7
60°-70°	1679.6	12.2
70°-80°	1050.6	7.7
80°-90°	477.2	3.5
90°-100°	159.9	1.2
100°-110°	40.1	0.3
110°-120°	6.3	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°	3527.8	25.7
0°-40°	5786.2	42.2
0°-60°	10297.2	75.1
0°-90°	13504.6	98.5
90°-120°	206.4	1.5
90°-150°	206.4	1.5
90°-180°	206.0	1.5
0°-180°	13711.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4535	4535	4535	4535	4535	
5°	4525	4517	4496	4518	4518	430
15°	4353	4360	4349	4373	4372	1229
25°	4033	4037	4041	4075	4082	1859
35°	3570	3587	3602	3638	3653	2235
45°	3004	3031	3055	3085	3100	2315
55°	2344	2372	2416	2451	2467	2094
65°	1611	1639	1696	1763	1791	1594
75°	816	866	992	1111	1152	870
85°	141	261	448	592	645	179
90°	1	97	264	397	445	6
95°	1	26	137	248	286	1
105°	2	3	22	66	89	2
115°	3	3	4	12	17	2
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°	4534.8	4534.8	4534.8	4534.8	4534.8
2.5°	4540.1	4533.7	4513.4	4533.7	4532.6
5°	4525.1	4516.6	4496.3	4517.7	4517.7
7.5°	4495.2	4492.0	4473.8	4498.4	4498.4
10°	4459.9	4458.9	4443.9	4470.6	4471.7
12.5°	4410.8	4415.0	4401.1	4426.8	4430.0
15°	4353.0	4360.5	4348.8	4373.3	4372.3
17.5°	4290.0	4294.2	4285.7	4313.5	4312.4
20°	4211.9	4217.3	4210.9	4239.7	4242.9
22.5°	4125.3	4132.8	4131.8	4161.7	4170.2
25°	4033.4	4036.6	4040.9	4075.1	4081.5
27.5°	3931.8	3937.2	3944.7	3975.7	3982.1
30°	3820.7	3829.2	3837.8	3869.8	3878.4
32.5°	3703.1	3711.6	3722.3	3764.0	3768.3
35°	3570.5	3586.6	3601.5	3637.9	3652.8
37.5°	3438.0	3458.3	3472.2	3510.7	3522.4
40°	3297.9	3318.2	3340.7	3381.3	3388.8
42.5°	3151.5	3175.0	3201.7	3238.1	3250.9
45°	3003.9	3030.7	3055.3	3085.2	3100.1
47.5°	2844.7	2871.4	2901.3	2935.5	2945.1
50°	2680.0	2711.0	2743.1	2775.2	2792.3
52.5°	2511.1	2548.5	2584.9	2619.1	2635.1
55°	2344.4	2372.1	2416.0	2451.3	2467.3
57.5°	2171.2	2194.7	2234.2	2292.0	2300.5
60°	1994.8	2016.2	2056.8	2103.8	2123.1
62.5°	1800.2	1829.1	1871.8	1931.7	1948.8
65°	1611.0	1638.8	1695.5	1762.8	1790.6
67.5°	1428.2	1437.8	1510.5	1581.1	1626.0
70°	1212.3	1248.6	1333.1	1419.7	1453.9
72.5°	1026.3	1062.6	1155.6	1257.2	1299.9
75°	815.7	865.9	992.0	1110.7	1152.4
77.5°	630.7	686.3	842.4	962.1	1010.2
80°	440.4	527.0	697.0	831.7	884.1
82.5°	276.9	383.8	565.5	706.6	752.6
85°	141.1	260.8	447.9	592.2	644.6
87.5°	37.4	168.9	348.5	486.4	539.9
90°	1.1	97.3	264.0	396.6	444.7
92.5°	1.1	54.5	196.7	315.4	364.5
95°	1.1	25.7	136.8	248.0	286.5
97.5°	1.1	10.7	94.1	187.1	225.6
100°	1.1	5.3	59.9	135.8	168.9
102.5°	2.1	3.2	37.4	97.3	124.0
105°	2.1	3.2	22.4	66.3	88.7
107.5°	2.1	3.2	12.8	44.9	60.9
110°	3.2	3.2	7.5	27.8	40.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.2	3.2	4.3	18.2	26.7
115°	3.2	3.2	4.3	11.8	17.1
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)