

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: P517673

Luminaire Tested: HVL12-8-LD4-2STD-50-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: P517673
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL12-8-LD4-2STD-50-UNV-O-EDD-90
Description: 8 FOOT, 12 INCH WIDE, HVL LED LUMINAIRE, WITH 5000K, 90 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13555.1 lumens
Efficiency: N/A
Efficacy: 100.9 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

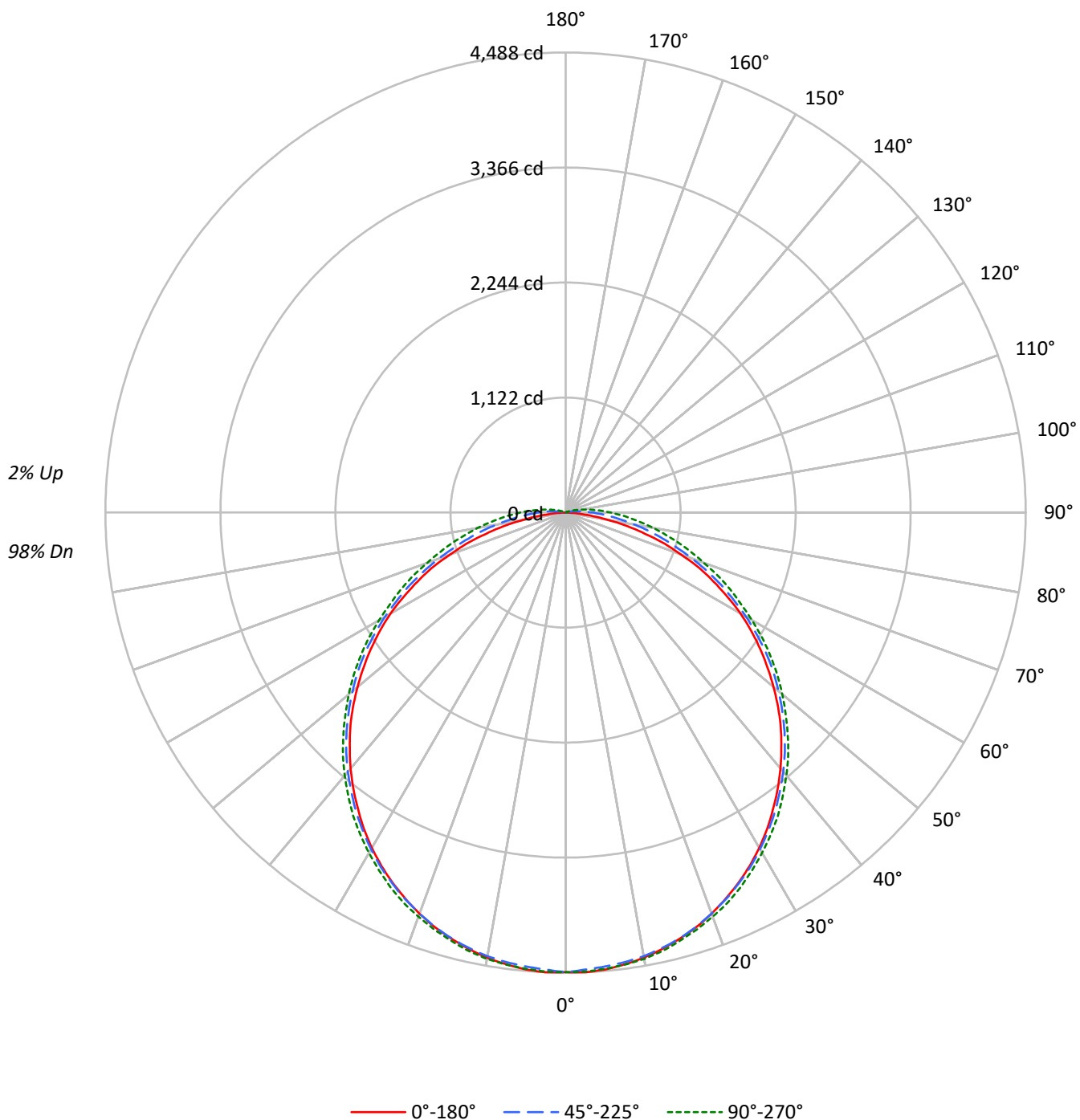
Input Watts (W): 134.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	6032	6032	6032
5°	6031	5935	5946
10°	6002	5865	5867
15°	5961	5783	5764
20°	5917	5686	5663
25°	5863	5585	5558
30°	5799	5475	5434
35°	5715	5351	5312
40°	5628	5220	5162
45°	5536	5075	4999
50°	5412	4902	4821
55°	5280	4711	4622
60°	5122	4450	4383
65°	4854	4155	4152
70°	4460	3800	3878
75°	3890	3411	3651
80°	3017	3047	3481
85°	1739	2717	3386

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 5536 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	424.2	3.1
10°-20°	1216.9	9.0
20°-30°	1846.5	13.6
30°-40°	2232.7	16.5
40°-50°	2329.7	17.2
50°-60°	2130.0	15.7
60°-70°	1660.5	12.2
70°-80°	1038.7	7.7
80°-90°	471.8	3.5
90°-100°	158.1	1.2
100°-110°	39.7	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°	3487.7	25.7
0°-40°	5720.4	42.2
0°-60°	10180.0	75.1
0°-90°	13351.0	98.5
90°-120°	204.1	1.5
90°-150°	204.1	1.5
90°-180°	204.0	1.5
0°-180°	13555.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	4483	4483	4483	4483	4483	
5°	4474	4465	4445	4466	4466	425
15°	4304	4311	4299	4324	4322	1215
25°	3988	3991	3995	4029	4035	1837
35°	3530	3546	3560	3596	3611	2209
45°	2970	2996	3020	3050	3065	2288
55°	2318	2345	2388	2423	2439	2071
65°	1593	1620	1676	1743	1770	1576
75°	806	856	981	1098	1139	860
85°	140	258	443	586	637	177
90°	1	96	261	392	440	6
95°	1	25	135	245	283	1
105°	2	3	22	66	88	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°	4483.2	4483.2	4483.2	4483.2	4483.2
2.5°	4488.5	4482.1	4462.0	4482.1	4481.1
5°	4473.7	4465.2	4445.1	4466.3	4466.3
7.5°	4444.1	4440.9	4422.9	4447.2	4447.2
10°	4409.2	4408.1	4393.3	4419.8	4420.8
12.5°	4360.6	4364.8	4351.1	4376.4	4379.6
15°	4303.5	4310.9	4299.3	4323.6	4322.5
17.5°	4241.2	4245.4	4236.9	4264.4	4263.3
20°	4164.0	4169.3	4162.9	4191.5	4194.7
22.5°	4078.4	4085.8	4084.7	4114.3	4122.8
25°	3987.5	3990.7	3994.9	4028.7	4035.1
27.5°	3887.1	3892.4	3899.8	3930.4	3936.8
30°	3777.2	3785.7	3794.1	3825.8	3834.3
32.5°	3660.9	3669.4	3680.0	3721.2	3725.4
35°	3529.9	3545.7	3560.5	3596.5	3611.3
37.5°	3398.8	3418.9	3432.7	3470.7	3482.3
40°	3260.4	3280.5	3302.7	3342.8	3350.2
42.5°	3115.6	3138.9	3165.3	3201.2	3213.9
45°	2969.8	2996.2	3020.5	3050.1	3064.9
47.5°	2812.3	2838.7	2868.3	2902.1	2911.6
50°	2649.5	2680.2	2711.9	2743.6	2760.5
52.5°	2482.6	2519.5	2555.5	2589.3	2605.1
55°	2317.7	2345.2	2388.5	2423.4	2439.2
57.5°	2146.5	2169.7	2208.8	2265.9	2274.4
60°	1972.1	1993.2	2033.4	2079.9	2098.9
62.5°	1779.7	1808.3	1850.6	1909.7	1926.6
65°	1592.7	1620.2	1676.2	1742.8	1770.2
67.5°	1412.0	1421.5	1493.3	1563.1	1607.5
70°	1198.5	1234.4	1317.9	1403.5	1437.3
72.5°	1014.6	1050.5	1142.5	1242.9	1285.1
75°	806.4	856.1	980.8	1098.1	1139.3
77.5°	623.5	678.5	832.8	951.2	998.7
80°	435.4	521.0	689.1	822.2	874.0
82.5°	273.7	379.4	559.1	698.6	744.0
85°	139.5	257.9	442.8	585.5	637.3
87.5°	37.0	167.0	344.5	480.9	533.7
90°	1.1	96.2	261.0	392.1	439.7
92.5°	1.1	53.9	194.5	311.8	360.4
95°	1.1	25.4	135.3	245.2	283.2
97.5°	1.1	10.6	93.0	184.9	223.0
100°	1.1	5.3	59.2	134.2	167.0
102.5°	2.1	3.2	37.0	96.2	122.6
105°	2.1	3.2	22.2	65.5	87.7
107.5°	2.1	3.2	12.7	44.4	60.2
110°	3.2	3.2	7.4	27.5	40.2

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	3.2	3.2	4.2	18.0	26.4
115°	3.2	3.2	4.2	11.6	16.9
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)