

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: P518110

Luminaire Tested: HVL8-4-LD4-3HI-30-UNV-O-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: P518110
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-3HI-30-UNV-O-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10591.0 lumens
Efficiency: N/A
Efficacy: 84.1 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

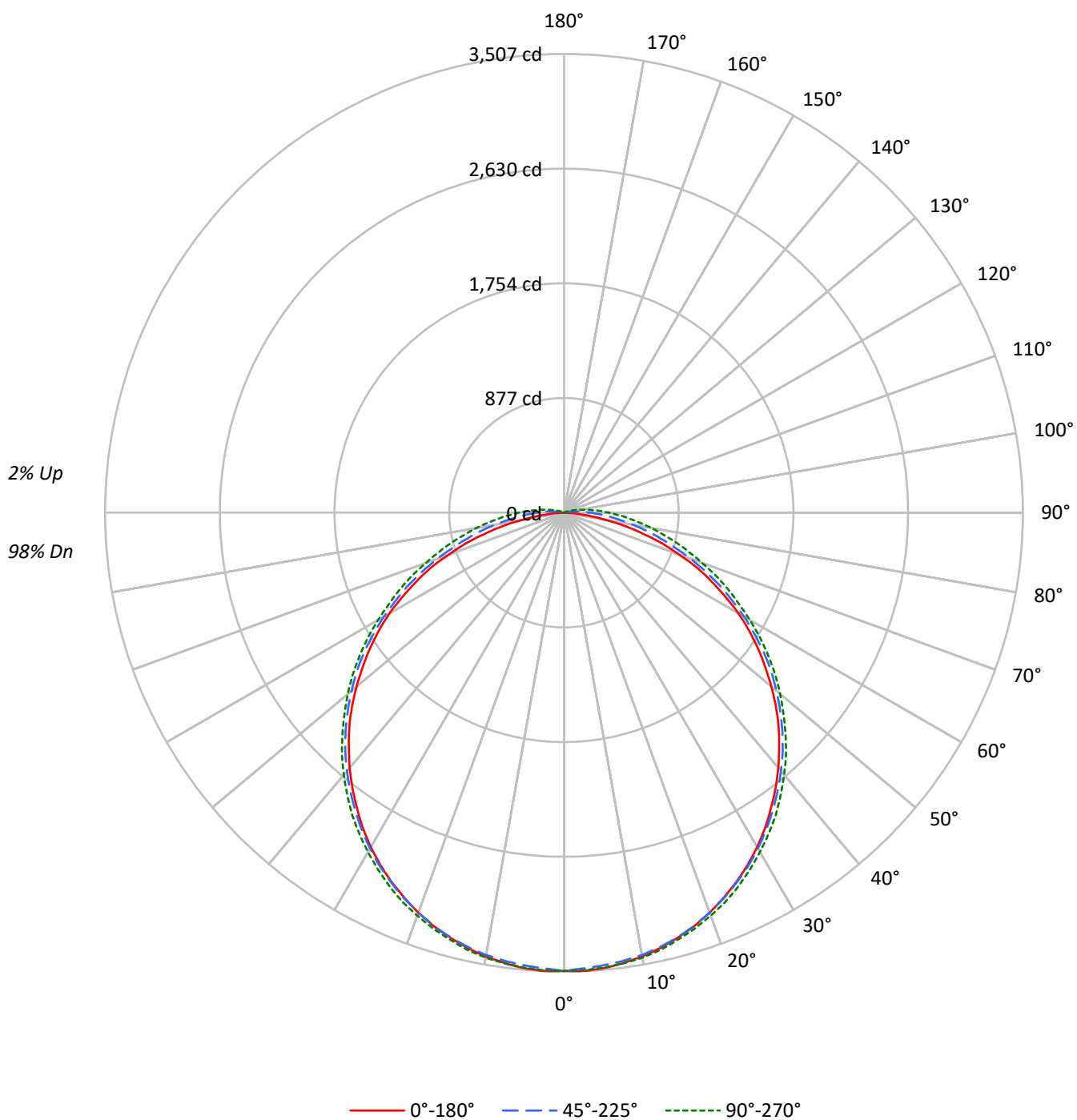
Input Watts (W): 125.9
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	14139	14139	14139
5°	14112	13823	13837
10°	14018	13576	13560
15°	13896	13302	13227
20°	13767	12996	12904
25°	13612	12682	12575
30°	13433	12347	12202
35°	13205	11978	11832
40°	12970	11591	11401
45°	12716	11168	10936
50°	12385	10680	10435
55°	12028	10145	9883
60°	11602	9450	9238
65°	10910	8673	8599
70°	9916	7756	7856
75°	8504	6753	7182
80°	6396	5768	6565
85°	3419	4772	5977

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 12716 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	331.5	3.1
10°-20°	950.8	9.0
20°-30°	1442.7	13.6
30°-40°	1744.5	16.5
40°-50°	1820.2	17.2
50°-60°	1664.3	15.7
60°-70°	1297.4	12.2
70°-80°	811.6	7.7
80°-90°	368.6	3.5
90°-100°	123.5	1.2
100°-110°	31.0	0.3
110°-120°	4.9	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°	2725.0	25.7
0°-40°	4469.5	42.2
0°-60°	7954.0	75.1
0°-90°	10431.6	98.5
90°-120°	159.5	1.5
90°-150°	159.5	1.5
90°-180°	159.0	1.5
0°-180°	10591.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	3503	3503	3503	3503	3503	
5°	3495	3489	3473	3490	3490	332
15°	3362	3368	3359	3378	3377	949
25°	3116	3118	3121	3148	3153	1436
35°	2758	2770	2782	2810	2822	1726
45°	2320	2341	2360	2383	2395	1788
55°	1811	1832	1866	1894	1906	1618
65°	1244	1266	1310	1362	1383	1231
75°	630	669	766	858	890	672
85°	109	202	346	458	498	138
90°	1	75	204	306	344	4
95°	1	20	106	192	221	1
105°	2	2	17	51	68	2
115°	2	2	3	9	13	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°	3502.9	3502.9	3502.9	3502.9	3502.9
2.5°	3507.0	3502.0	3486.3	3502.0	3501.2
5°	3495.4	3488.8	3473.1	3489.7	3489.7
7.5°	3472.3	3469.8	3455.8	3474.8	3474.8
10°	3445.1	3444.2	3432.7	3453.3	3454.1
12.5°	3407.1	3410.4	3399.6	3419.5	3421.9
15°	3362.5	3368.3	3359.2	3378.2	3377.3
17.5°	3313.8	3317.1	3310.5	3331.9	3331.1
20°	3253.5	3257.6	3252.7	3275.0	3277.4
22.5°	3186.6	3192.4	3191.6	3214.7	3221.3
25°	3115.6	3118.1	3121.4	3147.8	3152.7
27.5°	3037.1	3041.3	3047.0	3071.0	3075.9
30°	2951.3	2957.9	2964.5	2989.2	2995.8
32.5°	2860.4	2867.0	2875.3	2907.5	2910.8
35°	2758.0	2770.4	2782.0	2810.1	2821.6
37.5°	2655.6	2671.3	2682.1	2711.8	2720.9
40°	2547.5	2563.2	2580.5	2611.9	2617.7
42.5°	2434.3	2452.5	2473.1	2501.2	2511.1
45°	2320.4	2341.0	2360.0	2383.1	2394.7
47.5°	2197.3	2218.0	2241.1	2267.5	2275.0
50°	2070.2	2094.1	2118.9	2143.7	2156.9
52.5°	1939.7	1968.6	1996.7	2023.1	2035.5
55°	1810.9	1832.4	1866.2	1893.5	1905.8
57.5°	1677.1	1695.3	1725.8	1770.4	1777.0
60°	1540.9	1557.4	1588.8	1625.1	1640.0
62.5°	1390.6	1412.9	1445.9	1492.1	1505.4
65°	1244.4	1265.9	1309.7	1361.7	1383.1
67.5°	1103.2	1110.6	1166.8	1221.3	1256.0
70°	936.4	964.5	1029.7	1096.6	1123.0
72.5°	792.7	820.8	892.6	971.1	1004.1
75°	630.1	668.9	766.3	858.0	890.2
77.5°	487.2	530.1	650.7	743.2	780.3
80°	340.2	407.1	538.4	642.4	682.9
82.5°	213.9	296.4	436.8	545.8	581.3
85°	109.0	201.5	346.0	457.5	497.9
87.5°	28.9	130.5	269.2	375.7	417.0
90°	0.8	75.1	204.0	306.4	343.5
92.5°	0.8	42.1	151.9	243.6	281.6
95°	0.8	19.8	105.7	191.6	221.3
97.5°	0.8	8.3	72.7	144.5	174.2
100°	0.8	4.1	46.2	104.9	130.5
102.5°	1.7	2.5	28.9	75.1	95.8
105°	1.7	2.5	17.3	51.2	68.5
107.5°	1.7	2.5	9.9	34.7	47.1
110°	2.5	2.5	5.8	21.5	31.4

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	2.5	2.5	3.3	14.0	20.6
115°	2.5	2.5	3.3	9.1	13.2
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)