

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: P517814

Luminaire Tested: HVL8-1-LD4-2STD-40-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: P517814
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2STD-40-UNV-O-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1596.0 lumens
Efficiency: N/A
Efficacy: 97.9 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.27 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

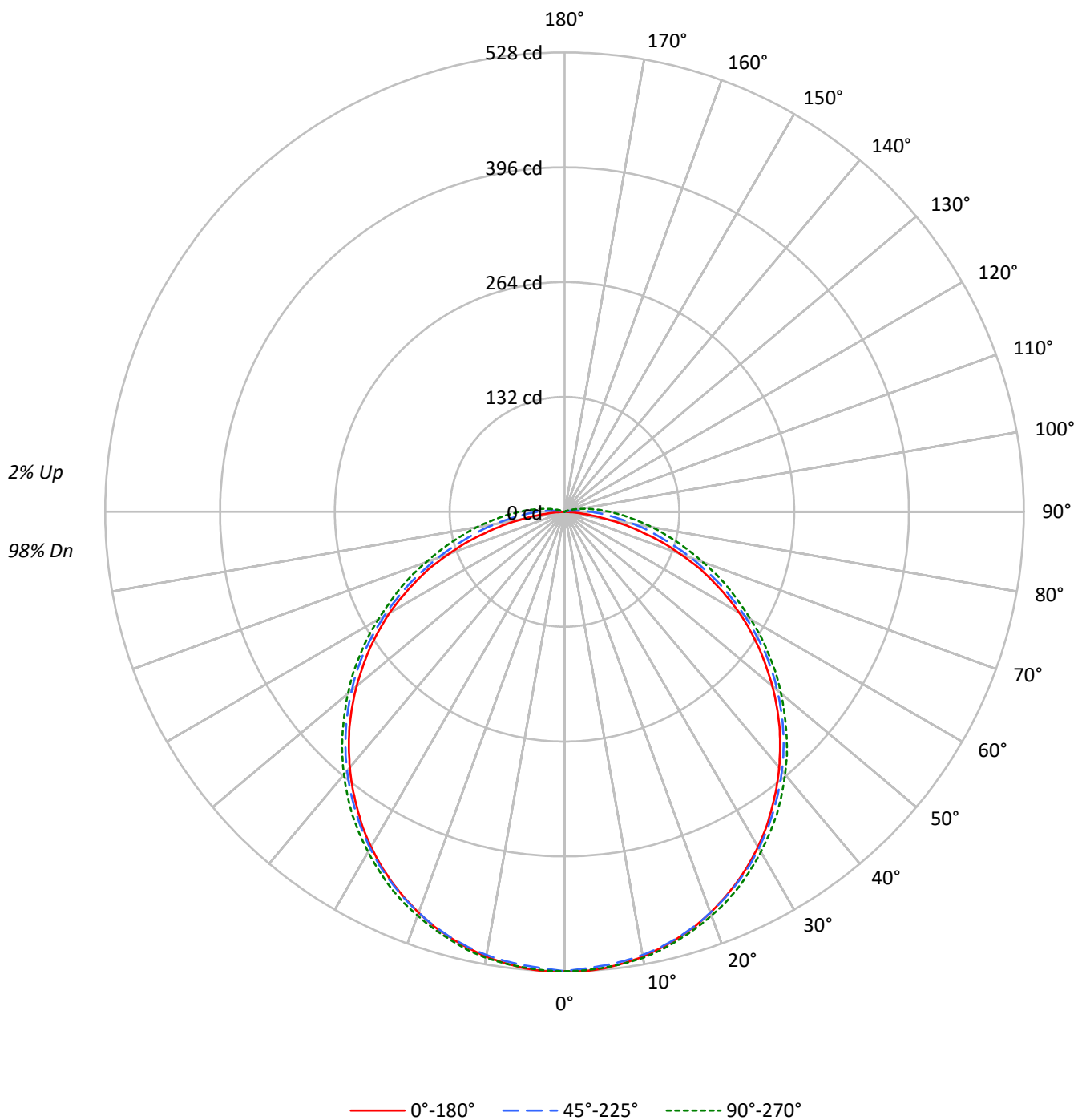
Input Watts (W): 16.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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°	8523	8523	8523
5°	8414	8270	8341
10°	8268	8062	8173
15°	8108	7842	7972
20°	7942	7607	7778
25°	7761	7368	7580
30°	7563	7117	7356
35°	7335	6849	7132
40°	7099	6572	6873
45°	6844	6272	6592
50°	6538	5936	6289
55°	6205	5571	5957
60°	5818	5118	5568
65°	5277	4621	5183
70°	4569	4049	4735
75°	3650	3431	4327
80°	2452	2823	3957
85°	1046	2209	3601

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 6844 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	50.0	3.1
10°-20°	143.3	9.0
20°-30°	217.4	13.6
30°-40°	262.9	16.5
40°-50°	274.3	17.2
50°-60°	250.8	15.7
60°-70°	195.5	12.2
70°-80°	122.3	7.7
80°-90°	55.5	3.5
90°-100°	18.6	1.2
100°-110°	4.7	0.3
110°-120°	0.7	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°	410.7	25.7
0°-40°	673.5	42.2
0°-60°	1198.6	75.1
0°-90°	1572.0	98.5
90°-120°	24.0	1.5
90°-150°	24.0	1.5
90°-180°	24.0	1.5
0°-180°	1596.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	528	528	528	528	528	
5°	527	526	523	526	526	50
15°	507	508	506	509	509	143
25°	470	470	470	474	475	216
35°	416	418	419	424	425	260
45°	350	353	356	359	361	269
55°	273	276	281	285	287	244
65°	188	191	197	205	208	186
75°	95	101	116	129	134	101
85°	16	30	52	69	75	21
90°	0	11	31	46	52	1
95°	0	3	16	29	33	0
105°	0	0	3	8	10	0
115°	0	0	0	1	2	0
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°	527.9	527.9	527.9	527.9	527.9
2.5°	528.5	527.7	525.4	527.7	527.6
5°	526.7	525.7	523.4	525.9	525.9
7.5°	523.3	522.9	520.8	523.6	523.6
10°	519.1	519.0	517.3	520.4	520.5
12.5°	513.4	513.9	512.3	515.3	515.7
15°	506.7	507.6	506.2	509.1	508.9
17.5°	499.4	499.9	498.9	502.1	502.0
20°	490.3	490.9	490.2	493.5	493.9
22.5°	480.2	481.1	480.9	484.4	485.4
25°	469.5	469.9	470.4	474.4	475.1
27.5°	457.7	458.3	459.2	462.8	463.5
30°	444.7	445.7	446.7	450.5	451.5
32.5°	431.0	432.0	433.3	438.1	438.6
35°	415.6	417.5	419.2	423.5	425.2
37.5°	400.2	402.6	404.2	408.7	410.0
40°	383.9	386.3	388.9	393.6	394.5
42.5°	366.8	369.6	372.7	376.9	378.4
45°	349.7	352.8	355.6	359.1	360.9
47.5°	331.1	334.2	337.7	341.7	342.8
50°	312.0	315.6	319.3	323.0	325.0
52.5°	292.3	296.7	300.9	304.9	306.7
55°	272.9	276.1	281.2	285.3	287.2
57.5°	252.7	255.5	260.1	266.8	267.8
60°	232.2	234.7	239.4	244.9	247.1
62.5°	209.6	212.9	217.9	224.9	226.8
65°	187.5	190.8	197.4	205.2	208.4
67.5°	166.2	167.4	175.8	184.0	189.3
70°	141.1	145.3	155.2	165.3	169.2
72.5°	119.5	123.7	134.5	146.3	151.3
75°	94.9	100.8	115.5	129.3	134.1
77.5°	73.4	79.9	98.1	112.0	117.6
80°	51.3	61.3	81.1	96.8	102.9
82.5°	32.2	44.7	65.8	82.3	87.6
85°	16.4	30.4	52.1	68.9	75.0
87.5°	4.4	19.7	40.6	56.6	62.8
90°	0.1	11.3	30.7	46.2	51.8
92.5°	0.1	6.3	22.9	36.7	42.4
95°	0.1	3.0	15.9	28.9	33.3
97.5°	0.1	1.2	11.0	21.8	26.3
100°	0.1	0.6	7.0	15.8	19.7
102.5°	0.2	0.4	4.4	11.3	14.4
105°	0.2	0.4	2.6	7.7	10.3
107.5°	0.2	0.4	1.5	5.2	7.1
110°	0.4	0.4	0.9	3.2	4.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.4	0.4	0.5	2.1	3.1
115°	0.4	0.4	0.5	1.4	2.0
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)