

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: P517782

Luminaire Tested: HVL8-1-LD4-2HI-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: P517782
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-2HI-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: 2054.0 lumens
Efficiency: N/A
Efficacy: 95.5 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

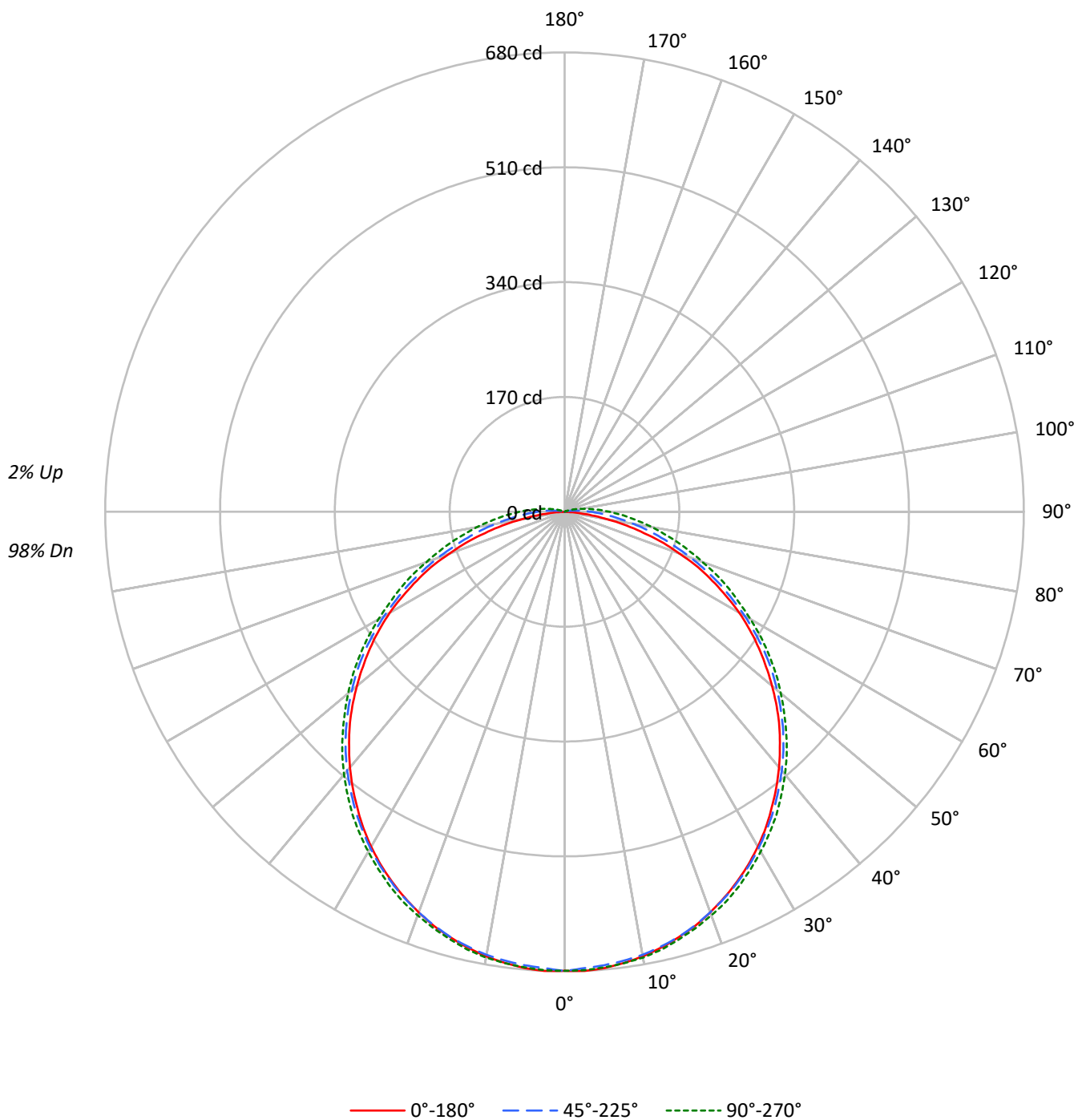
Input Watts (W): 21.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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			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°	10968	10968	10968
5°	10829	10643	10734
10°	10641	10375	10519
15°	10434	10093	10261
20°	10222	9789	10010
25°	9987	9482	9755
30°	9735	9160	9465
35°	9441	8815	9179
40°	9136	8458	8845
45°	8807	8072	8483
50°	8414	7639	8095
55°	7985	7170	7666
60°	7487	6587	7165
65°	6791	5946	6670
70°	5880	5209	6095
75°	4699	4415	5570
80°	3154	3634	5091
85°	1345	2846	4638

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 8807 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	64.3	3.1
10°-20°	184.4	9.0
20°-30°	279.8	13.6
30°-40°	338.3	16.5
40°-50°	353.0	17.2
50°-60°	322.8	15.7
60°-70°	251.6	12.2
70°-80°	157.4	7.7
80°-90°	71.5	3.5
90°-100°	24.0	1.2
100°-110°	6.0	0.3
110°-120°	0.9	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°	528.5	25.7
0°-40°	866.8	42.2
0°-60°	1542.6	75.1
0°-90°	2023.1	98.5
90°-120°	30.9	1.5
90°-150°	30.9	1.5
90°-180°	31.0	1.5
0°-180°	2054.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	679	679	679	679	679	
5°	678	677	674	677	677	64
15°	652	653	652	655	655	184
25°	604	605	605	610	611	278
35°	535	537	540	545	547	335
45°	450	454	458	462	464	347
55°	351	355	362	367	370	314
65°	241	246	254	264	268	239
75°	122	130	149	166	173	130
85°	21	39	67	89	97	27
90°	0	15	40	59	67	1
95°	0	4	20	37	43	0
105°	0	0	3	10	13	0
115°	0	0	1	2	3	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°	679.3	679.3	679.3	679.3	679.3
2.5°	680.1	679.2	676.1	679.2	679.0
5°	677.9	676.6	673.6	676.8	676.8
7.5°	673.4	672.9	670.2	673.9	673.9
10°	668.1	668.0	665.7	669.7	669.9
12.5°	660.8	661.4	659.3	663.2	663.6
15°	652.1	653.2	651.5	655.2	655.0
17.5°	642.7	643.3	642.0	646.2	646.0
20°	631.0	631.8	630.8	635.1	635.6
22.5°	618.0	619.1	619.0	623.4	624.7
25°	604.2	604.7	605.4	610.5	611.4
27.5°	589.0	589.8	590.9	595.6	596.5
30°	572.4	573.6	574.9	579.7	581.0
32.5°	554.7	556.0	557.6	563.9	564.5
35°	534.9	537.3	539.5	545.0	547.2
37.5°	515.0	518.1	520.2	525.9	527.7
40°	494.1	497.1	500.5	506.5	507.7
42.5°	472.1	475.6	479.6	485.1	487.0
45°	450.0	454.0	457.7	462.2	464.4
47.5°	426.1	430.2	434.6	439.8	441.2
50°	401.5	406.1	410.9	415.7	418.3
52.5°	376.2	381.8	387.2	392.4	394.8
55°	351.2	355.4	361.9	367.2	369.6
57.5°	325.3	328.8	334.7	343.4	344.6
60°	298.8	302.0	308.1	315.2	318.0
62.5°	269.7	274.0	280.4	289.4	291.9
65°	241.3	245.5	254.0	264.1	268.2
67.5°	214.0	215.4	226.3	236.9	243.6
70°	181.6	187.1	199.7	212.7	217.8
72.5°	153.7	159.2	173.1	188.3	194.7
75°	122.2	129.7	148.6	166.4	172.6
77.5°	94.5	102.8	126.2	144.1	151.3
80°	66.0	79.0	104.4	124.6	132.4
82.5°	41.5	57.5	84.7	105.9	112.7
85°	21.1	39.1	67.1	88.7	96.6
87.5°	5.6	25.3	52.2	72.9	80.9
90°	0.2	14.6	39.6	59.4	66.6
92.5°	0.2	8.2	29.5	47.2	54.6
95°	0.2	3.8	20.5	37.2	42.9
97.5°	0.2	1.6	14.1	28.0	33.8
100°	0.2	0.8	9.0	20.3	25.3
102.5°	0.3	0.5	5.6	14.6	18.6
105°	0.3	0.5	3.4	9.9	13.3
107.5°	0.3	0.5	1.9	6.7	9.1
110°	0.5	0.5	1.1	4.2	6.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	0.5	0.6	2.7	4.0
115°	0.5	0.5	0.6	1.8	2.6
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)