

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: P517824

Luminaire Tested: HVL8-1-LD4-3HI-35-UNV-C-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: P517824
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-1-LD4-3HI-35-UNV-C-EDD
Description: 1 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3500K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

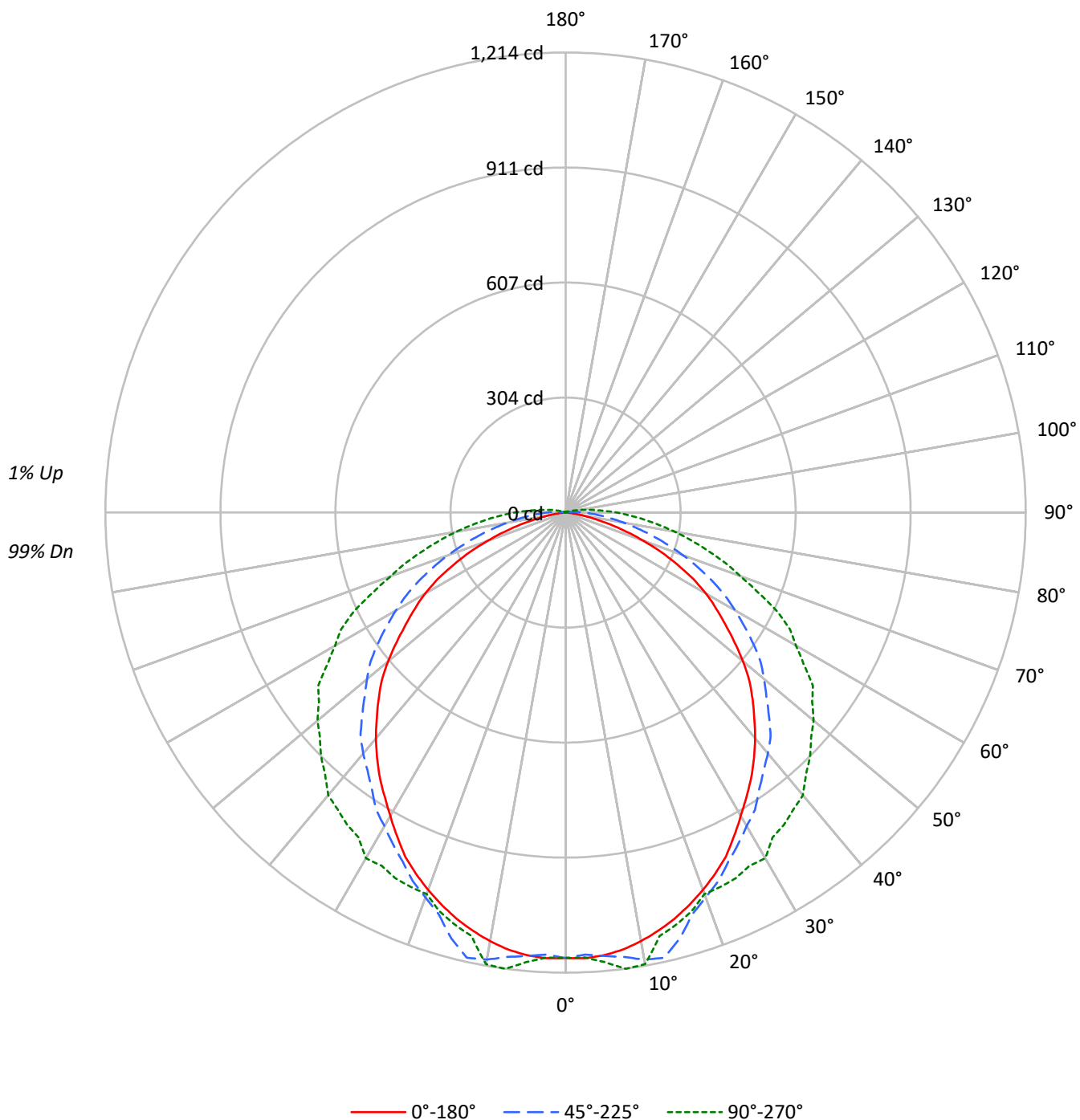
Lumens per Lamp: N/A
Luminaire Lumens: 3541.0 lumens
Efficiency: N/A
Efficacy: 112.4 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 1' x H: 0.17')
CIE Type: Direct

Input Watts (W): 31.5
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			99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	78	73	80	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	51	62	56	51	60	54	50			47
5	75	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	39	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°	18978	18978	18978
5°	18730	18553	18885
10°	18286	18666	19002
15°	17758	18028	17638
20°	17163	16765	16867
25°	16548	15920	16973
30°	15723	15222	17160
35°	15075	14558	16856
40°	14389	14027	16962
45°	13661	13383	16655
50°	12814	12708	16528
55°	11689	11992	16519
60°	10739	11062	15814
65°	9158	9982	15309
70°	7117	8637	13728
75°	4734	7065	12533
80°	2371	5500	11251
85°	701	3931	9911

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 16655 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	113.0	3.2
10°-20°	321.7	9.1
20°-30°	478.7	13.5
30°-40°	575.4	16.2
40°-50°	605.6	17.1
50°-60°	561.9	15.9
60°-70°	444.3	12.5
70°-80°	271.4	7.7
80°-90°	118.2	3.3
90°-100°	36.8	1.0
100°-110°	8.3	0.2
110°-120°	3.3	0.1
120°-130°	1.9	0.1
130°-140°	0.5	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°	913.4	25.8
0°-40°	1488.7	42.0
0°-60°	2656.3	75.0
0°-90°	3490.2	98.6
90°-120°	48.4	1.4
90°-150°	50.8	1.4
90°-180°	51.0	1.4
0°-180°	3541.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1175	1175	1175	1175	1175	
5°	1172	1170	1174	1187	1191	111
15°	1110	1152	1164	1125	1126	313
25°	1001	1065	1016	1047	1064	460
35°	854	878	891	972	1005	534
45°	698	701	759	879	912	538
55°	514	522	605	738	796	462
65°	325	336	426	564	616	322
75°	123	163	238	365	388	134
85°	11	38	93	180	206	17
90°	0	12	49	114	134	1
95°	0	3	21	62	76	0
105°	0	2	4	12	17	0
115°	0	1	3	6	6	0
125°	0	0	1	4	5	0
135°	0	0	0	1	2	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°	1175.4	1175.4	1175.4	1175.4	1175.4
2.5°	1176.9	1173.7	1167.3	1173.5	1175.2
5°	1172.5	1170.2	1174.2	1187.4	1190.7
7.5°	1162.7	1171.8	1182.6	1206.5	1214.2
10°	1148.1	1165.4	1197.7	1218.0	1210.1
12.5°	1130.4	1159.6	1203.0	1163.2	1144.8
15°	1109.8	1152.4	1163.7	1125.1	1125.9
17.5°	1085.6	1146.4	1111.7	1110.8	1103.8
20°	1059.5	1126.3	1080.4	1078.4	1071.0
22.5°	1031.5	1099.8	1052.6	1048.8	1068.9
25°	1001.1	1065.0	1016.4	1046.8	1063.8
27.5°	963.0	1019.5	986.3	1029.4	1050.7
30°	924.5	972.6	955.4	1015.5	1053.3
32.5°	888.3	923.5	930.0	1010.2	1016.4
35°	854.1	877.8	891.0	971.9	1004.9
37.5°	816.5	823.0	857.9	955.9	987.7
40°	778.2	774.1	830.1	929.5	973.6
42.5°	737.0	735.6	800.7	916.3	938.4
45°	698.0	701.1	758.8	879.0	911.8
47.5°	658.0	662.1	719.0	838.0	878.8
50°	611.5	616.8	683.6	801.7	854.1
52.5°	561.3	571.3	649.1	767.2	820.1
55°	514.1	522.5	605.3	737.7	796.4
57.5°	471.0	476.0	560.1	700.6	744.9
60°	428.6	429.8	517.4	659.4	701.8
62.5°	380.0	382.1	473.6	610.8	667.6
65°	325.4	335.7	426.4	564.4	615.6
67.5°	274.4	292.4	378.3	521.7	548.6
70°	219.8	250.2	331.1	471.7	490.6
72.5°	169.8	205.4	282.8	415.7	442.2
75°	123.1	163.1	237.8	365.4	388.4
77.5°	82.8	123.6	195.6	309.8	340.2
80°	49.6	90.3	158.0	258.4	292.6
82.5°	25.4	60.6	122.6	216.7	247.3
85°	11.0	38.3	92.7	179.8	206.4
87.5°	3.1	21.8	68.2	145.3	167.8
90°	0.2	11.5	48.6	114.0	134.3
92.5°	0.2	5.5	34.2	86.2	101.8
95°	0.2	2.9	21.3	62.5	76.4
97.5°	0.2	1.7	12.9	44.3	56.0
100°	0.2	1.4	7.7	29.5	40.0
102.5°	0.2	1.7	5.3	18.7	26.1
105°	0.2	1.7	4.3	12.2	17.2
107.5°	0.5	1.7	3.8	9.1	12.0
110°	0.2	1.4	4.1	6.9	9.3

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CATALOG NUMBER: HVL8-1-LD4-3HI-35-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.5	1.2	3.8	5.7	6.9
115°	0.2	1.0	3.4	5.5	5.7
117.5°	0.5	0.7	2.6	5.5	5.7
120°	0.5	0.5	2.2	5.3	6.0
122.5°	0.5	0.5	1.7	4.8	5.7
125°	0.2	0.5	1.4	3.6	5.0
127.5°	0.5	0.5	1.2	2.9	3.8
130°	0.5	0.5	1.0	2.2	2.9
132.5°	0.5	0.5	0.7	1.7	2.2
135°	0.5	0.5	0.5	1.2	1.7
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)