

LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: iO LED

Report Number: P277816

Luminaire Tested: 696-8LED2710-12-BK-LVR

Issue Date: 3/3/2020

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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**Test Information**

Test Method: LM-79-2019  
 Report Number: P277816  
 Test Lab: INNOVATION CENTER(G2)  
 Issue Date: 3/3/2020  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: iO LED  
 Catalog Number: 696-8LED2710-12-BK-LVR  
 Description: BOCA 696, 8 WATT, 2700K CCT, 10 DEGREE SPOT OPTIC,  
 FLUSH HOOD BLACK, HEX CELL LOUVER  
 Light Source: (1) SORAA 2700K 90 CRI LED  
 SM16-07-10D-927-03  
 Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
 Luminaire Lumens: 221.8 lumens  
 Efficiency: N/A  
 Efficacy: 28.1 lumens/watt  
 N/A  
 Luminous Opening: Circular (Dia: 0.17' x H: 0')  
 CIE Type: Indirect

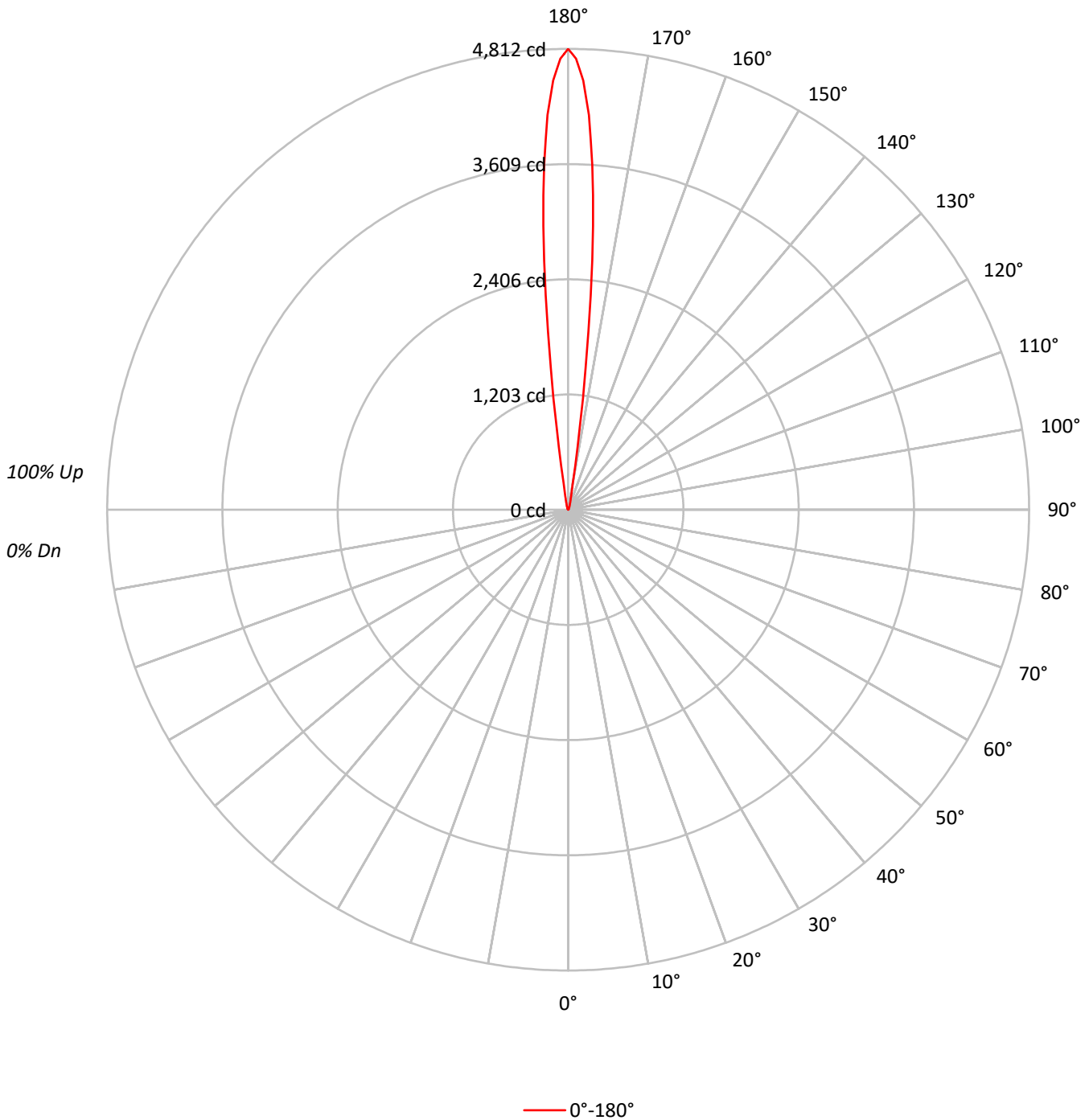
Input Watts (W): 7.9  
 Input Voltage (V): NR  
 Input Current (Ain): NR  
 Voltage Rise (V): NR  
 Power Factor: NR  
 Total Harmonic Distortion (THDi): NR  
 Frequency (hertz): 60  
 Stabilization Time: NR  
 Operation Time: NR  
 Ambient Temperature (°C): NR  
 Test Distance: 24 FT



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									20
RC	80									70									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																														
0	95	95	95	95	81	81	81	81	56	56	56	32	32	32	10	10	10	0																												
1	87	83	79	76	74	71	68	65	48	47	45	28	27	26	9	9	8	0																												
2	79	72	66	62	67	62	57	53	42	40	37	24	23	22	8	7	7	0																												
3	72	63	57	51	61	54	49	44	37	34	31	21	20	18	7	6	6	0																												
4	65	56	48	43	56	48	42	37	33	29	26	19	17	16	6	6	5	0																												
5	60	49	42	36	51	42	36	32	29	25	22	17	15	13	5	5	4	0																												
6	55	44	36	31	47	38	32	27	26	22	19	15	13	11	5	4	4	0																												
7	50	39	32	27	43	34	28	23	23	19	17	14	11	10	4	4	3	0																												
8	47	35	28	23	40	30	24	20	21	17	14	12	10	9	4	3	3	0																												
9	43	32	25	20	37	28	22	18	19	15	13	11	9	8	4	3	3	0																												
10	40	29	22	18	34	25	19	16	17	14	11	10	8	7	3	3	2	0																												

**AVERAGE LUMINANCE (cd/sqm):**

	0°
95°	0
100°	0
105°	0
110°	0
115°	0
120°	886
125°	773
130°	689
135°	1884
140°	2964
145°	4940
150°	6779
155°	11434
160°	22057
165°	40103
170°	138147
175°	1473718

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 0°  
 Luminance: 0 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	0.0	0.0
10°-20°	0.0	0.0
20°-30°	0.0	0.0
30°-40°	0.0	0.0
40°-50°	0.0	0.0
50°-60°	0.0	0.0
60°-70°	0.0	0.0
70°-80°	0.0	0.0
80°-90°	0.0	0.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.6	0.2
120°-130°	0.8	0.4
130°-140°	2.1	0.9
140°-150°	5.1	2.3
150°-160°	10.4	4.7
160°-170°	25.6	11.5
170°-180°	177.5	80.0
0°-30°	0.0	0.0
0°-40°	0.0	0.0
0°-60°	0.0	0.0
0°-90°	0.0	0.0
90°-120°	0.6	0.2
90°-150°	8.5	3.8
90°-180°	222.0	100.1
0°-180°	221.8	100.0

**CANDELA DISTRIBUTION:**

	0°	Flux
90°	0	
95°	0	0
105°	0	0
115°	0	1
125°	1	1
135°	3	2
145°	8	5
155°	21	10
165°	79	26
175°	2976	178
180°	4812	

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**CANDELA DISTRIBUTION (FULL):**

	0°
90°	0.0
92.5°	0.0
95°	0.0
97.5°	0.0
100°	0.0
102.5°	0.0
105°	0.0
107.5°	0.0
110°	0.0
112.5°	0.0
115°	0.0
117.5°	0.9
120°	0.9
122.5°	0.9
125°	0.9
127.5°	0.9
130°	0.9
132.5°	1.8
135°	2.7
137.5°	3.7
140°	4.6
142.5°	6.4
145°	8.2
147.5°	10.0
150°	11.9
151°	13.7
152°	14.6
153°	16.4
154°	18.3
155°	21.0
157.5°	30.1
160°	42.0
161°	46.6
162°	51.1
163°	57.5
164°	66.6
165°	78.5
166°	94.0
167°	115.0
168°	144.2
169°	189.0
170°	275.7
171°	464.8
172°	860.1
173°	1489.2

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

  
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**CANDELA DISTRIBUTION (continued):**

	0°
174°	2252.5
175°	2975.6
176°	3610.1
177°	4127.9
178°	4484.9
179°	4709.5
180°	4811.7

(END OF REPORT)