

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State  
Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: IRiS

Report Number: H21199

Luminaire Tested: **PN3MR-E3AAC2**

Issue Date: 03/03/2020

**Test Information**

Test Method: LM-79-08  
Report Number: H21199  
Test Lab:  
Issue Date: 03/03/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: IRiS  
Catalog Number: PN3MR-E3AAC2  
Description: IRIS 3.5 IN RECESSED ADJUSTABLE DOWNLIGHT  
WITH MAIN BEAM AT 30 DEGREES AND CLEAR LENS  
Light Source: Q50MR16C/FL40 50 WATTS 800 LUMENS  
Ballast/Driver: -

**Summary**

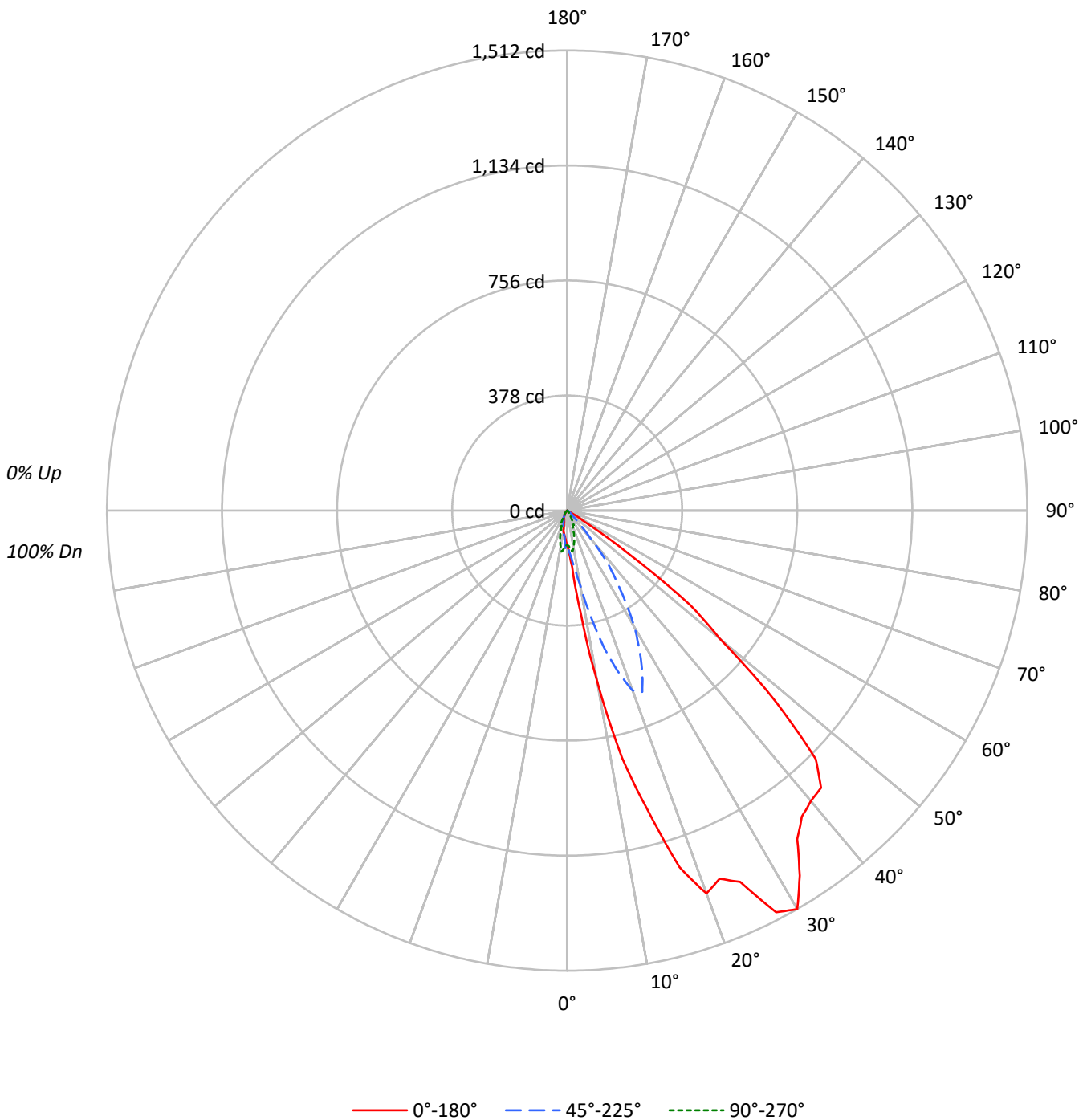
Lumens per Lamp: 800 (1 lamp)  
Luminaire Lumens: 586.6 lumens  
Efficiency: 73.3%  
Efficacy: 10.9 lumens/watt  
Spacing Criteria (0/90/45): 2.62 / 0.65 / 1.2  
Luminous Opening: (L: 0' x W: -0.29' x H: 0'  
CIE Type: Direct

Input Watts (W): 54  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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: 25 FT



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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	0		
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50	30	10	0
RCR																				
0	87	87	87	87	85	85	85	85	81	81	81		78	78	78		75	75	75	73
1	82	80	78	76	81	78	76	75	75	74	72		73	71	70		70	69	68	67
2	77	73	69	66	75	72	68	66	69	66	64		67	65	63		65	63	61	60
3	72	66	62	58	71	65	61	58	63	60	57		61	58	56		60	57	55	54
4	67	60	56	52	66	60	55	51	58	54	51		56	53	50		55	52	50	48
5	63	55	50	46	61	54	50	46	53	49	45		52	48	45		50	47	45	43
6	58	50	45	41	57	50	45	41	49	44	41		47	43	40		46	43	40	39
7	55	46	41	37	53	46	41	37	45	40	37		44	40	36		43	39	36	35
8	51	42	37	33	50	42	37	33	41	36	33		40	36	33		39	36	33	32
9	48	39	34	30	47	39	34	30	38	33	30		37	33	30		37	33	30	29
10	45	36	31	28	44	36	31	28	35	31	27		34	30	27		34	30	27	26

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

	0°	90°	180°
0°	Luminous shape not found,		
5°	reference photometric report, or contact		
10°	the photometric lab for calculations.		
15°			
20°			
25°			
30°			
35°			
40°			
45°			
50°			
55°			
60°			
65°			
70°			
75°			
80°			
85°			



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	45°	90°	135°	180°	Flux
0°-10°	14.3	2.4	1.8	0°	112	112	112	112	112	
10°-20°	82.1	14.0	10.3	5°	186	156	126	90	85	30
20°-30°	161.7	27.6	20.2	15°	1014	464	89	49	37	297
30°-40°	176.3	30.0	22.0	25°	1346	584	52	37	29	648
40°-50°	122.0	20.8	15.2	35°	1318	282	14	7	10	842
50°-60°	28.8	4.9	3.6	45°	1155	38	2	1	3	821
60°-70°	1.1	0.2	0.1	55°	243	6	1	0	0	253
70°-80°	0.2	0.0	0.0	65°	3	1	1	0	0	6
80°-90°	0.2	0.0	0.0	75°	0	1	0	0	0	0
90°-100°	0.0	0.0	0.0	85°	0	0	0	0	0	0
100°-110°	0.0	0.0	0.0	90°	0	0	0	0	0	0
110°-120°	0.0	0.0	0.0	95°	0	0	0	0	0	0
120°-130°	0.0	0.0	0.0	105°	0	0	0	0	0	0
130°-140°	0.0	0.0	0.0	115°	0	0	0	0	0	0
140°-150°	0.0	0.0	0.0	125°	0	0	0	0	0	0
150°-160°	0.0	0.0	0.0	135°	0	0	0	0	0	0
160°-170°	0.0	0.0	0.0	145°	0	0	0	0	0	0
170°-180°	0.0	0.0	0.0	155°	0	0	0	0	0	0
0°-30°	258.1	44.0	32.3	165°	0	0	0	0	0	0
0°-40°	434.4	74.1	54.3	175°	0	0	0	0	0	0
0°-60°	585.1	99.7	73.1	180°	0	0	0	0	0	0
0°-90°	586.6	100.0	73.3							
90°-120°	0.0	0.0	0.0							
90°-150°	0.0	0.0	0.0							
90°-180°	0.0	0.0	0.0							
0°-180°	586.6	100.0	73.3							



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	45°	55°	60°
0°	112	112	112	112	112	112	112	112	112	112	112
2.5°	132	132	134	135	135	135	135	134	132	128	126
5°	186	188	184	184	181	176	171	165	156	148	142
7.5°	338	327	317	305	281	257	238	222	190	170	160
10°	575	573	553	528	501	460	411	358	250	195	178
12.5°	832	825	806	782	729	670	587	508	354	233	209
15°	1014	1013	986	950	900	838	766	664	464	281	233
17.5°	1229	1215	1182	1134	1057	973	878	794	554	321	251
20°	1339	1335	1325	1292	1217	1108	979	872	629	346	232
22.5°	1309	1314	1316	1321	1291	1214	1085	950	645	288	187
25°	1346	1359	1375	1392	1369	1291	1126	927	584	252	168
27.5°	1488	1498	1505	1450	1382	1272	1080	867	513	201	135
30°	1512	1520	1541	1492	1382	1253	1061	828	442	144	111
32.5°	1422	1459	1508	1446	1331	1206	1021	781	358	122	80
35°	1318	1353	1387	1347	1265	1120	952	719	282	97	49
37.5°	1267	1275	1284	1245	1176	1033	835	608	221	49	28
40°	1246	1251	1229	1162	1066	915	691	504	128	29	21
42.5°	1235	1212	1158	1055	927	752	557	341	58	20	17
45°	1155	1132	1060	926	774	586	387	199	38	15	15
47.5°	933	895	824	711	552	405	227	106	21	15	15
50°	655	654	625	533	402	255	125	46	19	12	12
52.5°	510	485	433	340	228	115	45	23	13	7	3
55°	243	217	175	131	74	37	20	11	6	5	2
57.5°	60	62	61	50	29	16	9	6	2	1	1
60°	35	37	29	16	10	4	2	3	2	1	1
62.5°	3	3	3	2	3	5	2	2	1	1	1
65°	3	3	2	2	2	1	1	1	1	1	1
67.5°	1	1	1	1	1	1	1	1	1	1	1
70°	1	1	1	1	1	1	1	0	1	1	1
72.5°	1	1	1	0	0	0	0	0	1	1	1
75°	0	0	0	0	0	0	0	0	1	1	1
77.5°	0	0	0	0	0	0	0	0	0	1	1
80°	0	0	0	0	0	0	0	0	0	1	1
82.5°	0	0	0	0	0	0	0	0	0	1	1
85°	0	0	0	0	0	0	0	0	0	1	1
87.5°	0	0	0	0	0	0	0	0	0	1	1
90°	0	0	0	0	0	0	0	0	0	0	0
92.5°	0	0	0	0	0	0	0	0	0	0	0
95°	0	0	0	0	0	0	0	0	0	0	0
97.5°	0	0	0	0	0	0	0	0	0	0	0
100°	0	0	0	0	0	0	0	0	0	0	0
102.5°	0	0	0	0	0	0	0	0	0	0	0
105°	0	0	0	0	0	0	0	0	0	0	0
107.5°	0	0	0	0	0	0	0	0	0	0	0
110°	0	0	0	0	0	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	45°	55°	60°
112.5°	0	0	0	0	0	0	0	0	0	0	0
115°	0	0	0	0	0	0	0	0	0	0	0
117.5°	0	0	0	0	0	0	0	0	0	0	0
120°	0	0	0	0	0	0	0	0	0	0	0
122.5°	0	0	0	0	0	0	0	0	0	0	0
125°	0	0	0	0	0	0	0	0	0	0	0
127.5°	0	0	0	0	0	0	0	0	0	0	0
130°	0	0	0	0	0	0	0	0	0	0	0
132.5°	0	0	0	0	0	0	0	0	0	0	0
135°	0	0	0	0	0	0	0	0	0	0	0
137.5°	0	0	0	0	0	0	0	0	0	0	0
140°	0	0	0	0	0	0	0	0	0	0	0
142.5°	0	0	0	0	0	0	0	0	0	0	0
145°	0	0	0	0	0	0	0	0	0	0	0
147.5°	0	0	0	0	0	0	0	0	0	0	0
150°	0	0	0	0	0	0	0	0	0	0	0
152.5°	0	0	0	0	0	0	0	0	0	0	0
155°	0	0	0	0	0	0	0	0	0	0	0
157.5°	0	0	0	0	0	0	0	0	0	0	0
160°	0	0	0	0	0	0	0	0	0	0	0
162.5°	0	0	0	0	0	0	0	0	0	0	0
165°	0	0	0	0	0	0	0	0	0	0	0
167.5°	0	0	0	0	0	0	0	0	0	0	0
170°	0	0	0	0	0	0	0	0	0	0	0
172.5°	0	0	0	0	0	0	0	0	0	0	0
175°	0	0	0	0	0	0	0	0	0	0	0
177.5°	0	0	0	0	0	0	0	0	0	0	0
180°	0	0	0	0	0	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (continued):**

	67.5°	90°	112.5°	135°	157.5°	180°
0°	112	112	112	112	112	112
2.5°	121	117	128	123	102	98
5°	134	126	108	90	83	85
7.5°	149	136	91	79	76	77
10°	163	122	84	77	73	69
12.5°	181	106	74	63	49	48
15°	192	89	57	49	36	37
17.5°	187	67	49	40	31	32
20°	150	54	40	32	30	29
22.5°	124	52	43	34	35	37
25°	110	52	40	37	35	29
27.5°	78	34	30	23	18	17
30°	50	24	21	14	18	16
32.5°	37	20	15	12	18	18
35°	26	14	8	7	9	10
37.5°	19	10	4	5	6	6
40°	15	8	3	4	5	5
42.5°	13	3	1	2	2	3
45°	11	2	1	1	2	3
47.5°	7	1	1	1	1	1
50°	6	1	1	1	1	1
52.5°	5	1	1	1	1	1
55°	1	1	1	0	0	0
57.5°	1	1	1	0	0	0
60°	1	1	1	0	0	0
62.5°	1	1	0	0	0	0
65°	1	1	0	0	0	0
67.5°	1	1	0	0	0	0
70°	1	0	0	0	0	0
72.5°	1	0	0	0	0	0
75°	1	0	0	0	0	0
77.5°	1	0	0	0	0	0
80°	1	0	0	0	0	0
82.5°	1	0	0	0	0	0
85°	1	0	0	0	0	0
87.5°	1	0	0	0	0	0
90°	0	0	0	0	0	0
92.5°	0	0	0	0	0	0
95°	0	0	0	0	0	0
97.5°	0	0	0	0	0	0
100°	0	0	0	0	0	0
102.5°	0	0	0	0	0	0
105°	0	0	0	0	0	0
107.5°	0	0	0	0	0	0
110°	0	0	0	0	0	0





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**CANDELA DISTRIBUTION (continued):**

	67.5°	90°	112.5°	135°	157.5°	180°
112.5°	0	0	0	0	0	0
115°	0	0	0	0	0	0
117.5°	0	0	0	0	0	0
120°	0	0	0	0	0	0
122.5°	0	0	0	0	0	0
125°	0	0	0	0	0	0
127.5°	0	0	0	0	0	0
130°	0	0	0	0	0	0
132.5°	0	0	0	0	0	0
135°	0	0	0	0	0	0
137.5°	0	0	0	0	0	0
140°	0	0	0	0	0	0
142.5°	0	0	0	0	0	0
145°	0	0	0	0	0	0
147.5°	0	0	0	0	0	0
150°	0	0	0	0	0	0
152.5°	0	0	0	0	0	0
155°	0	0	0	0	0	0
157.5°	0	0	0	0	0	0
160°	0	0	0	0	0	0
162.5°	0	0	0	0	0	0
165°	0	0	0	0	0	0
167.5°	0	0	0	0	0	0
170°	0	0	0	0	0	0
172.5°	0	0	0	0	0	0
175°	0	0	0	0	0	0
177.5°	0	0	0	0	0	0
180°	0	0	0	0	0	0

(END OF REPORT)