

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: RSA

Report Number: P14872

Luminaire Tested: **MRZ-1-REC-X-3-L27-97-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P14872  
Test Lab: INNOVATION CENTER (G1)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: RSA  
Catalog Number: MRZ-1-REC-X-3-L27-97-NFL-UNV-X-STD-LSL  
Description: MRZ INTEGRAL LED DOWNLIGHT  
25 DEGREE NARROW FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 3  
Light Source: (1) 2700K CCT, 97 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 707.9 lumens  
Efficiency: N/A  
Efficacy: 59.5 lumens/watt  
Spacing Criteria (0/90/45): 0.4 / 0.87 / 0.54  
Luminous Opening: Circular (Dia: 0.17' x H: 0')  
CIE Type: Direct

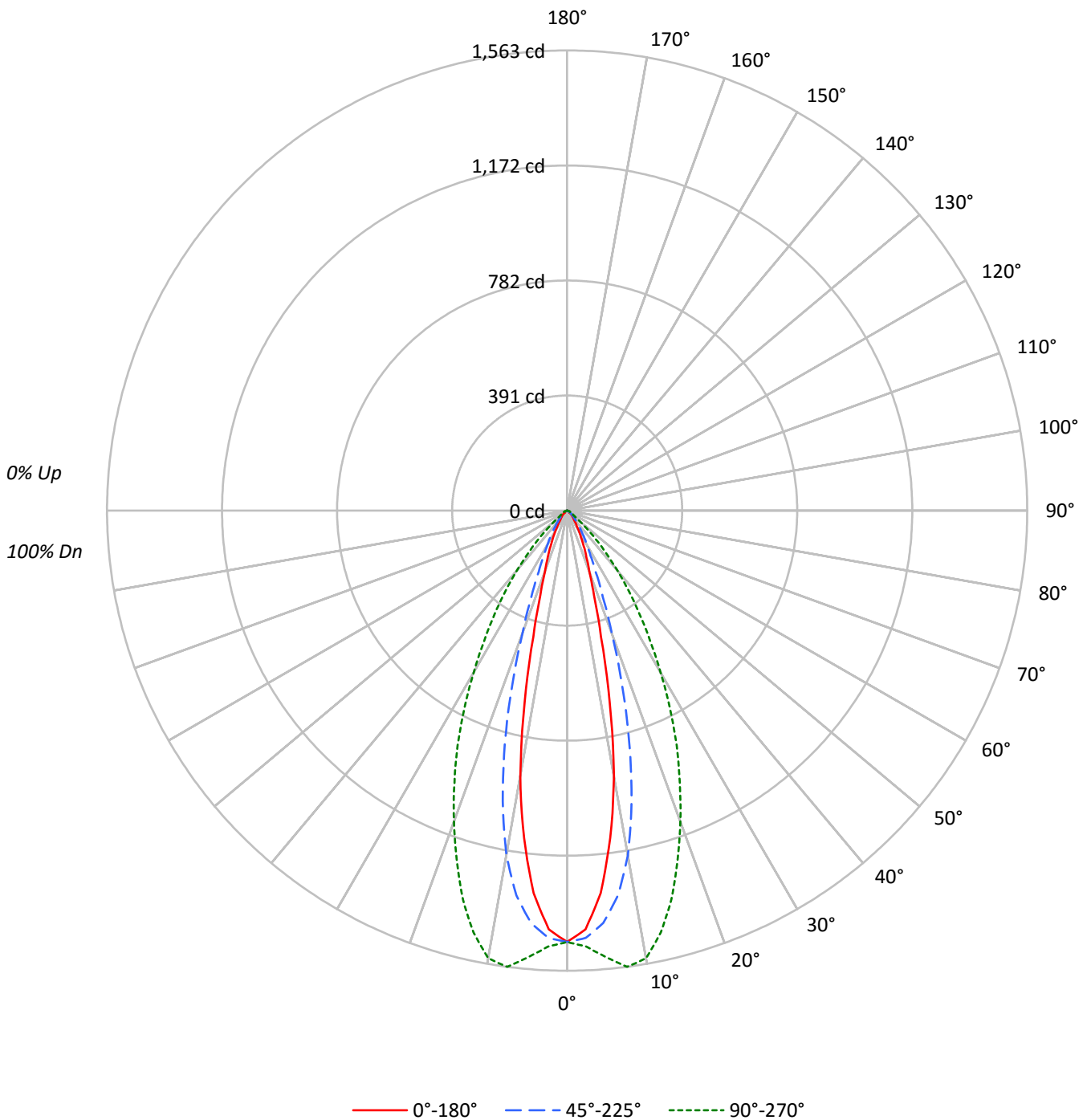
Input Watts (W): 11.9  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	114	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	109	104	100	97	106	102	99	96	99	96	94	96	94	92	93	92	90	88
3	104	98	93	89	102	96	92	89	94	90	87	91	88	86	89	87	84	83
4	99	92	87	83	97	91	86	82	89	85	81	87	83	80	85	82	80	78
5	95	87	81	77	93	86	81	77	84	80	76	83	79	76	81	78	75	74
6	90	82	77	73	89	81	76	72	80	75	72	79	75	72	77	74	71	70
7	87	78	73	69	85	77	72	68	76	71	68	75	71	68	74	70	67	66
8	83	74	69	65	82	74	68	65	73	68	65	72	67	64	71	67	64	63
9	80	71	65	62	79	70	65	62	69	65	61	69	64	61	68	64	61	60
10	77	68	62	59	76	67	62	59	66	62	59	66	61	58	65	61	58	57

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

	0°	45°	90°
0°	722801	722801	722801
5°	645824	696341	754287
10°	458908	595177	773530
15°	226788	416800	698753
20°	116035	232069	590674
25°	72947	124664	479058
30°	43867	76341	361763
35°	28308	49389	258389
40°	19966	32203	170676
45°	15350	22328	95591
50°	9211	15351	40681
55°	6881	10322	21505
60°	5921	6907	13815
65°	5837	5837	11674
70°	5770	4328	15868
75°	5719	3813	11438
80°	2841	2841	5683
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	128.3	18.1
10°-20°	239.2	33.8
20°-30°	179.6	25.4
30°-40°	98.8	14.0
40°-50°	40.1	5.7
50°-60°	12.8	1.8
60°-70°	6.1	0.9
70°-80°	2.9	0.4
80°-90°	0.2	0.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	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°	547.2	77.3
0°-40°	646.0	91.2
0°-60°	698.8	98.7
0°-90°	707.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	707.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1465	1465	1465	1465	1465	
5°	1304	1334	1406	1489	1523	112
15°	444	522	816	1214	1368	130
25°	134	150	229	668	880	62
35°	47	56	82	248	429	30
45°	22	21	32	61	137	16
55°	8	9	12	15	25	8
65°	5	6	5	6	10	5
75°	3	2	2	2	6	3
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1465	1465	1465	1465	1465	1465	1465	1465	1465	1465	1465
2.5°	1424	1424	1423	1426	1432	1432	1435	1438	1441	1447	1453
5°	1304	1306	1305	1316	1324	1334	1337	1354	1367	1387	1406
7.5°	1122	1123	1132	1145	1165	1176	1191	1215	1244	1282	1319
10°	916	916	930	949	965	987	998	1037	1079	1132	1188
12.5°	667	667	691	705	734	753	769	814	869	937	1011
15°	444	452	461	480	506	522	533	579	644	720	816
17.5°	302	307	313	328	341	349	359	398	445	519	620
20°	221	226	231	238	246	250	257	277	311	363	442
22.5°	171	175	179	183	189	192	196	209	227	260	317
25°	134	134	139	142	147	150	155	164	178	197	229
27.5°	102	103	106	110	114	117	122	130	139	152	172
30°	77	79	81	84	89	92	95	102	110	120	134
32.5°	59	61	62	65	69	71	74	80	87	97	106
35°	47	47	49	50	54	56	58	62	69	75	82
37.5°	37	38	39	40	43	44	45	48	52	58	64
40°	31	32	32	32	33	33	34	36	40	44	50
42.5°	26	26	26	26	26	26	27	28	31	35	40
45°	22	21	21	21	21	21	21	23	25	28	32
47.5°	16	17	17	17	17	17	18	18	20	23	25
50°	12	13	13	14	14	14	14	15	17	19	20
52.5°	10	10	10	11	11	11	11	12	14	15	16
55°	8	8	8	8	9	9	10	11	12	12	12
57.5°	7	7	7	7	7	8	8	9	10	9	9
60°	6	6	6	6	6	7	7	8	7	7	7
62.5°	6	6	5	5	6	6	6	6	6	6	5
65°	5	5	5	5	5	6	6	5	5	4	5
67.5°	5	5	4	5	5	5	5	4	4	4	4
70°	4	4	4	4	4	4	4	3	3	3	3
72.5°	3	3	3	4	3	3	3	3	3	3	3
75°	3	3	3	3	3	2	2	2	2	2	2
77.5°	2	2	2	2	2	2	2	2	2	1	1
80°	1	1	1	1	1	1	1	1	1	1	1
82.5°	0	1	0	0	0	0	0	0	0	0	0
85°	0	0	0	0	0	0	0	0	0	0	0
87.5°	0	0	0	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (continued):**

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	1465	1465	1465	1465	1465	1465	1465	1465	1465	1465
2.5°	1458	1462	1467	1472	1474	1476	1479	1481	1482	1482
5°	1426	1446	1465	1481	1489	1496	1508	1516	1523	1523
7.5°	1358	1400	1439	1473	1488	1504	1529	1548	1558	1563
10°	1247	1310	1369	1421	1445	1465	1501	1526	1538	1544
12.5°	1096	1179	1254	1319	1348	1372	1409	1442	1459	1468
15°	920	1018	1107	1181	1214	1244	1293	1333	1357	1368
17.5°	734	855	956	1041	1071	1104	1161	1207	1239	1247
20°	562	693	808	896	931	964	1028	1077	1112	1125
22.5°	409	536	663	757	797	833	897	950	987	1000
25°	292	395	521	628	668	704	768	822	860	880
27.5°	213	283	394	504	547	585	644	700	736	755
30°	156	202	285	392	439	476	539	586	625	635
32.5°	119	145	202	289	337	376	437	482	513	524
35°	91	107	141	207	248	288	346	392	419	429
37.5°	71	82	102	146	178	213	270	308	330	343
40°	57	65	78	104	126	152	200	236	258	265
42.5°	46	52	59	74	89	108	147	172	190	194
45°	36	40	48	55	61	71	98	121	132	137
47.5°	29	34	34	38	42	49	66	79	87	89
50°	22	23	25	27	29	31	40	48	53	53
52.5°	16	17	17	18	19	21	26	30	33	34
55°	12	12	13	14	15	16	19	23	24	25
57.5°	9	9	10	11	12	12	15	17	19	21
60°	7	7	8	8	9	10	13	14	14	14
62.5°	6	6	6	7	7	7	9	12	13	13
65°	5	5	5	5	6	6	7	8	10	10
67.5°	4	4	4	4	5	5	7	8	10	11
70°	3	3	3	4	4	5	6	8	10	11
72.5°	2	2	3	3	3	4	5	6	7	7
75°	2	2	2	2	2	2	3	5	5	6
77.5°	2	2	1	2	2	2	2	3	4	4
80°	1	1	1	1	1	1	1	1	1	2
82.5°	0	0	0	0	0	0	0	0	0	0
85°	0	0	0	0	0	0	0	0	0	0
87.5°	0	0	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0	0	0

(END OF REPORT)