

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: METALUX

Report Number: 132P116

Luminaire Tested: **2M-232A**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-41-14  
Report Number: 132P116  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 2M-232A  
Description: 2 X 4 Surface Modular luminaire with a  
.095 pattern 12 acrylic lens  
Light Source: Two - FO32T8/35K - 2850 Lumens ea. - 32 Watts ea.  
Ballast/Driver: Magnetek B232I120RH Electronic - L.O.B.F. = 87.16

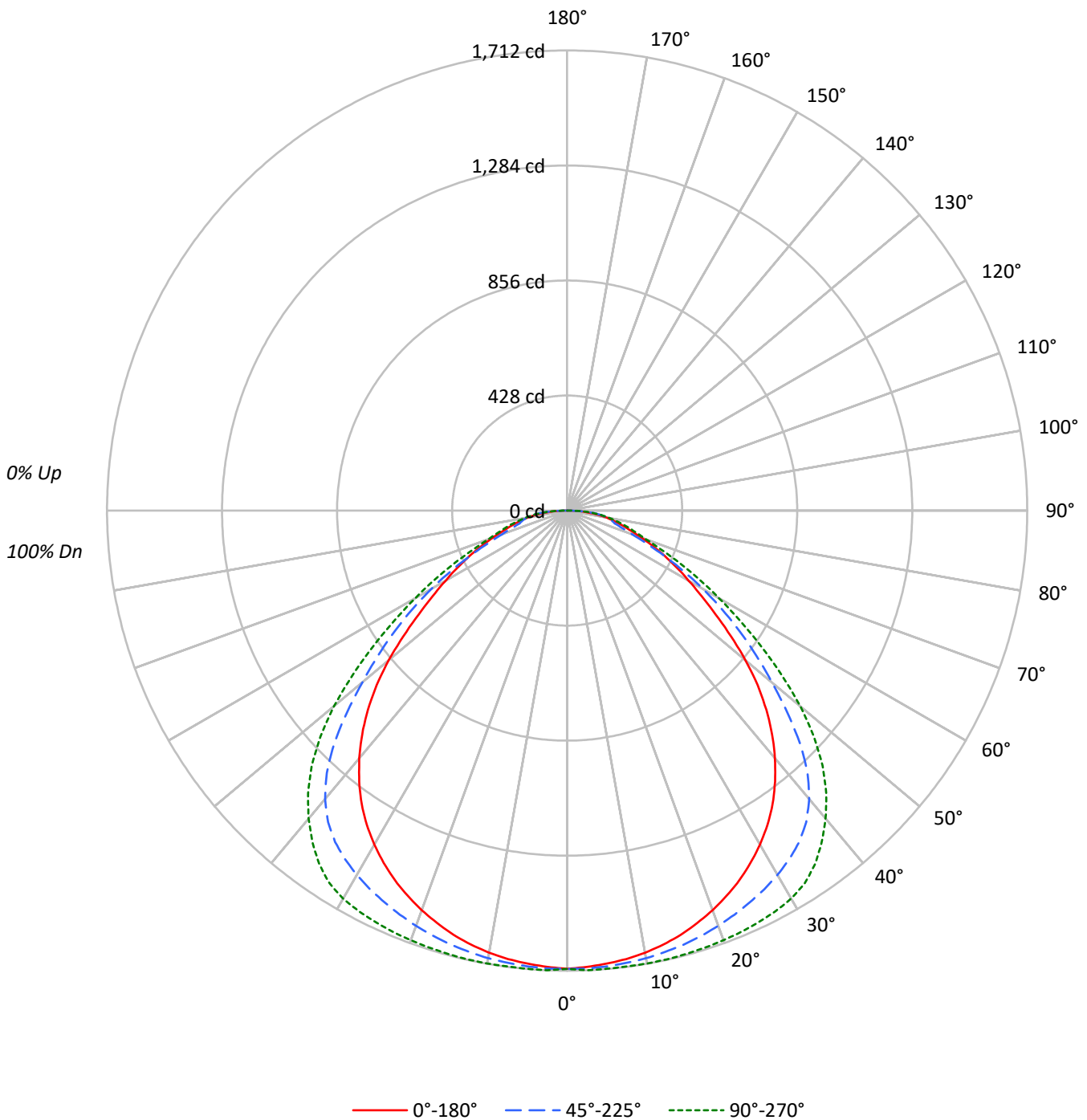
**Summary**

Lumens per Lamp: 2850 (2 lamps)  
Luminaire Lumens: 4657.0 lumens  
Efficiency: 81.7%  
Efficacy: 78.9 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.44 / 1.43  
Luminous Opening: Rectangular (W 1.79' x L: 3.81' x H: 0')  
CIE Type: Direct

Input Watts (W): 59  
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: 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										
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	0														
RCR																																						
0	97	97	97	97	95	95	95	95	91	91	91	87	87	87	83	83	83	82																				
1	89	86	82	79	87	84	81	78	80	78	76	77	75	73	74	73	71	70																				
2	82	75	70	66	80	74	69	65	71	67	64	68	65	62	66	63	61	59																				
3	75	67	60	55	73	66	60	55	63	58	54	61	57	53	59	55	52	50																				
4	69	59	53	47	67	58	52	47	56	51	46	55	50	46	53	49	45	43																				
5	63	53	46	41	62	52	46	41	51	45	40	49	44	40	48	43	40	38																				
6	59	48	41	36	57	47	41	36	46	40	36	45	39	35	43	39	35	33																				
7	54	44	37	32	53	43	36	32	42	36	32	41	35	31	40	35	31	29																				
8	51	40	33	28	49	39	33	28	38	32	28	37	32	28	36	31	28	26																				
9	47	37	30	26	46	36	30	26	35	29	25	34	29	25	34	29	25	24																				
10	44	34	27	23	43	33	27	23	33	27	23	32	27	23	31	26	23	21																				

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

	0°	45°	90°
0°	2698	2698	2698
5°	2688	2704	2718
10°	2684	2717	2749
15°	2677	2739	2798
20°	2664	2769	2865
25°	2649	2808	2949
30°	2622	2860	3046
35°	2575	2908	3105
40°	2485	2894	3090
45°	2345	2744	3008
50°	2132	2447	2787
55°	1860	2163	2433
60°	1655	1845	2067
65°	1502	1487	1723
70°	1356	1189	1444
75°	1290	1119	1400
80°	1331	1403	1467
85°	1344	1725	1670



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	162.0	3.5	2.8	0°	1705	1705	1705	1705	1705	
10°-20°	472.4	10.1	8.3	5°	1692	1697	1702	1705	1711	161
20°-30°	741.0	15.9	13.0	15°	1634	1646	1672	1694	1708	461
30°-40°	926.2	19.9	16.2	25°	1517	1546	1608	1665	1689	699
40°-50°	926.8	19.9	16.3	35°	1333	1391	1505	1576	1607	831
50°-60°	702.5	15.1	12.3	45°	1048	1117	1226	1313	1344	804
60°-70°	418.1	9.0	7.3	55°	674	718	784	855	882	609
70°-80°	217.3	4.7	3.8	65°	401	394	397	443	460	399
80°-90°	90.6	1.9	1.6	75°	211	189	183	207	229	227
90°-100°	0.0	0.0	0.0	85°	74	83	95	94	92	75
100°-110°	0.0	0.0	0.0	90°	0	0	0	0	0	5
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°	1375.5	29.5	24.1	165°	0	0	0	0	0	0
0°-40°	2301.7	49.4	40.4	175°	0	0	0	0	0	0
0°-60°	3931.0	84.4	69.0	180°	0	0	0	0	0	0
0°-90°	4657.0	100.0	81.7							
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°	4657.0	100.0	81.7							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1705	1705	1705	1705	1705
2.5°	1699	1701	1705	1705	1712
5°	1692	1697	1702	1705	1711
7.5°	1683	1688	1697	1703	1710
10°	1670	1677	1691	1701	1711
12.5°	1654	1663	1682	1698	1710
15°	1634	1646	1672	1694	1708
17.5°	1609	1625	1659	1689	1705
20°	1582	1602	1644	1683	1701
22.5°	1551	1575	1627	1674	1696
25°	1517	1546	1608	1665	1689
27.5°	1478	1513	1588	1653	1680
30°	1435	1477	1565	1637	1667
32.5°	1387	1437	1538	1615	1645
35°	1333	1391	1505	1576	1607
37.5°	1271	1340	1461	1524	1556
40°	1203	1279	1401	1464	1496
42.5°	1129	1206	1324	1397	1427
45°	1048	1117	1226	1313	1344
47.5°	961	1013	1111	1207	1245
50°	866	905	994	1088	1132
52.5°	768	806	887	968	1007
55°	674	718	784	855	882
57.5°	593	632	683	743	762
60°	523	550	583	635	653
62.5°	460	470	487	535	554
65°	401	394	397	443	460
67.5°	345	324	319	364	377
70°	293	266	257	298	312
72.5°	248	221	211	246	265
75°	211	189	183	207	229
77.5°	180	163	170	178	194
80°	146	140	154	155	161
82.5°	110	114	130	130	128
85°	74	83	95	94	92
87.5°	38	42	46	51	49
90°	0	0	0	0	0
92.5°	0	0	0	0	0
95°	0	0	0	0	0
97.5°	0	0	0	0	0
100°	0	0	0	0	0
102.5°	0	0	0	0	0
105°	0	0	0	0	0
107.5°	0	0	0	0	0
110°	0	0	0	0	0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	0	0	0	0	0
115°	0	0	0	0	0
117.5°	0	0	0	0	0
120°	0	0	0	0	0
122.5°	0	0	0	0	0
125°	0	0	0	0	0
127.5°	0	0	0	0	0
130°	0	0	0	0	0
132.5°	0	0	0	0	0
135°	0	0	0	0	0
137.5°	0	0	0	0	0
140°	0	0	0	0	0
142.5°	0	0	0	0	0
145°	0	0	0	0	0
147.5°	0	0	0	0	0
150°	0	0	0	0	0
152.5°	0	0	0	0	0
155°	0	0	0	0	0
157.5°	0	0	0	0	0
160°	0	0	0	0	0
162.5°	0	0	0	0	0
165°	0	0	0	0	0
167.5°	0	0	0	0	0
170°	0	0	0	0	0
172.5°	0	0	0	0	0
175°	0	0	0	0	0
177.5°	0	0	0	0	0
180°	0	0	0	0	0

(END OF REPORT)