

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: 227p166

Luminaire Tested: **MBF-232-NB-UNV-EB81-U**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: 227p166  
Test Lab: METALUX RESEARCH LABS  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: MBF-232-NB-UNV-EB81-U  
Description: MICROBAY, 2 LAMP T8, WITH SPECULAR NORMAL BEAM REFLECTOR  
(90352NB2L), TALL SOCKETS  
Light Source: TWO T8 LINEAR FLUORESCENT LAMPS  
F32T8 32 WATTS  
Ballast/Driver: -

**Summary**

Lumens per Lamp: 3100 (2 lamps)  
Luminaire Lumens: 6102.5 lumens  
Efficiency: 98.4%  
Efficacy: 100.0 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.15 / 1.26  
Luminous Opening: Rectangular (W 0.67' x L: 4' x H: 0')  
CIE Type: Direct

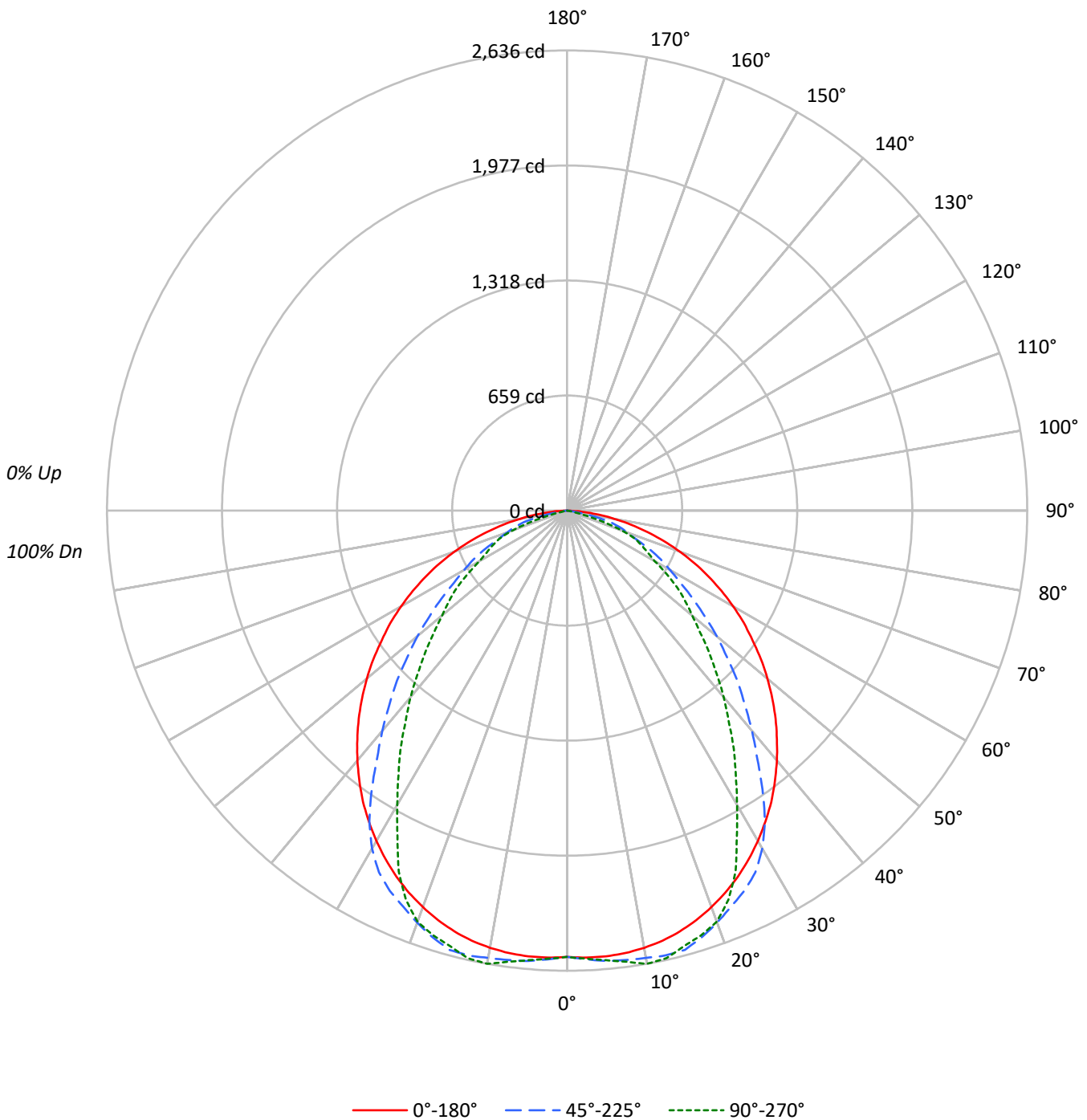
Input Watts (W): 61  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: 227p166

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### Luminous Intensity Polar Plot





TEST NUMBER: 227p166

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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	117	117	117	117	114	114	114	114	109	109	109	105	105	105	100	100	100	98
1	108	104	101	97	106	102	99	96	98	95	93	94	92	90	91	89	87	85
2	99	92	86	81	97	90	85	80	87	82	78	84	80	76	81	78	75	73
3	91	82	75	69	89	80	74	68	77	72	67	75	70	66	72	68	65	63
4	84	73	65	59	82	72	64	59	70	63	58	67	62	57	65	60	56	54
5	78	66	58	52	76	65	57	51	63	56	51	61	55	50	59	54	50	48
6	72	60	51	45	70	59	51	45	57	50	45	55	49	45	54	48	44	42
7	67	54	46	41	65	54	46	40	52	45	40	51	45	40	50	44	40	38
8	63	50	42	36	61	49	42	36	48	41	36	47	40	36	46	40	36	34
9	59	46	38	33	57	45	38	33	44	38	33	43	37	33	42	37	32	31
10	55	43	35	30	54	42	35	30	41	34	30	40	34	30	39	34	30	28

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

	0°	45°	90°
0°	10321	10321	10321
5°	10385	10494	10478
10°	10423	10665	10804
15°	10430	10886	10798
20°	10382	10790	10765
25°	10306	10702	10163
30°	10184	10417	9070
35°	10047	9614	8195
40°	9848	8678	7356
45°	9642	7866	6565
50°	9407	7027	5865
55°	9120	6186	5433
60°	8872	5490	4674
65°	8539	4928	4489
70°	8084	4284	3954
75°	7439	4008	1794
80°	6439	1511	0
85°	4631	371	0



TEST NUMBER: 227p166

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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	247.0	4.0	4.0	0°	2557	2557	2557	2557	2557	
10°-20°	724.5	11.9	11.7	5°	2563	2576	2590	2593	2586	244
20°-30°	1081.9	17.7	17.4	15°	2496	2541	2605	2597	2584	704
30°-40°	1193.3	19.6	19.2	25°	2314	2410	2403	2345	2282	1066
40°-50°	1103.2	18.1	17.8	35°	2039	2113	1951	1725	1663	1274
50°-60°	868.9	14.2	14.0	45°	1689	1737	1378	1197	1150	1302
60°-70°	579.0	9.5	9.3	55°	1296	1179	879	787	772	1162
70°-80°	265.0	4.3	4.3	65°	894	670	516	464	470	884
80°-90°	39.0	0.6	0.6	75°	477	302	257	153	115	504
90°-100°	0.7	0.0	0.0	85°	100	45	8	1	0	119
100°-110°	0.0	0.0	0.0	90°	2	14	4	1	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°	2053.4	33.6	33.1	165°	0	0	0	0	0	0
0°-40°	3246.7	53.2	52.4	175°	0	0	0	0	0	0
0°-60°	5218.8	85.5	84.2	180°	0	0	0	0	0	0
0°-90°	6101.8	100.0	98.4							
90°-120°	0.7	0.0	0.0							
90°-150°	0.7	0.0	0.0							
90°-180°	1.0	0.0	0.0							
0°-180°	6102.5	100.0	98.4							



TEST NUMBER: 227p166

CATALOG NUMBER: MBF-232-NB-UNV-EB81-U

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2557	2557	2557	2557	2557
2.5°	2563	2567	2573	2576	2570
5°	2563	2576	2590	2593	2586
7.5°	2557	2579	2597	2611	2607
10°	2543	2570	2602	2636	2636
12.5°	2524	2557	2610	2641	2626
15°	2496	2541	2605	2597	2584
17.5°	2460	2515	2563	2551	2551
20°	2417	2488	2512	2514	2506
22.5°	2369	2452	2455	2451	2413
25°	2314	2410	2403	2345	2282
27.5°	2252	2353	2336	2199	2104
30°	2185	2278	2235	2020	1946
32.5°	2113	2198	2109	1871	1798
35°	2039	2113	1951	1725	1663
37.5°	1955	2024	1787	1591	1519
40°	1869	1937	1647	1450	1396
42.5°	1779	1841	1506	1326	1266
45°	1689	1737	1378	1197	1150
47.5°	1594	1612	1240	1080	1034
50°	1498	1480	1119	965	934
52.5°	1400	1330	992	867	853
55°	1296	1179	879	787	772
57.5°	1201	1042	769	707	675
60°	1099	912	680	612	579
62.5°	996	791	603	517	519
65°	894	670	516	464	470
67.5°	790	555	425	417	422
70°	685	452	363	360	335
72.5°	580	369	317	262	224
75°	477	302	257	153	115
77.5°	375	223	159	54	27
80°	277	173	65	3	0
82.5°	185	121	11	1	0
85°	100	45	8	1	0
87.5°	32	21	6	1	0
90°	2	14	4	1	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



TEST NUMBER: 227p166

CATALOG NUMBER: MBF-232-NB-UNV-EB81-U

**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)