

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: 227p160

Luminaire Tested: **MBF-154NB-UNV-EB81-U**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: 227p160  
Test Lab: METALUX RESEARCH LABS  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: MBF-154NB-UNV-EB81-U  
Description: MICROBAY, 1 LAMP T5, WITH SPECULAR NARROW BEAM REFLECTOR,  
TALL SOCKETS  
Light Source: ONE T5 HIGH OUTPUT LINEAR FLUORESCENT LAMP  
F54T5 54 WATTS  
Ballast/Driver: -

**Summary**

Lumens per Lamp: 4400 (1 lamp)  
Luminaire Lumens: 4246.6 lumens  
Efficiency: 96.5%  
Efficacy: 67.4 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.19 / 1.28  
Luminous Opening: Rectangular (W 0.54' x L: 3.83' x H: 0')  
CIE Type: Direct

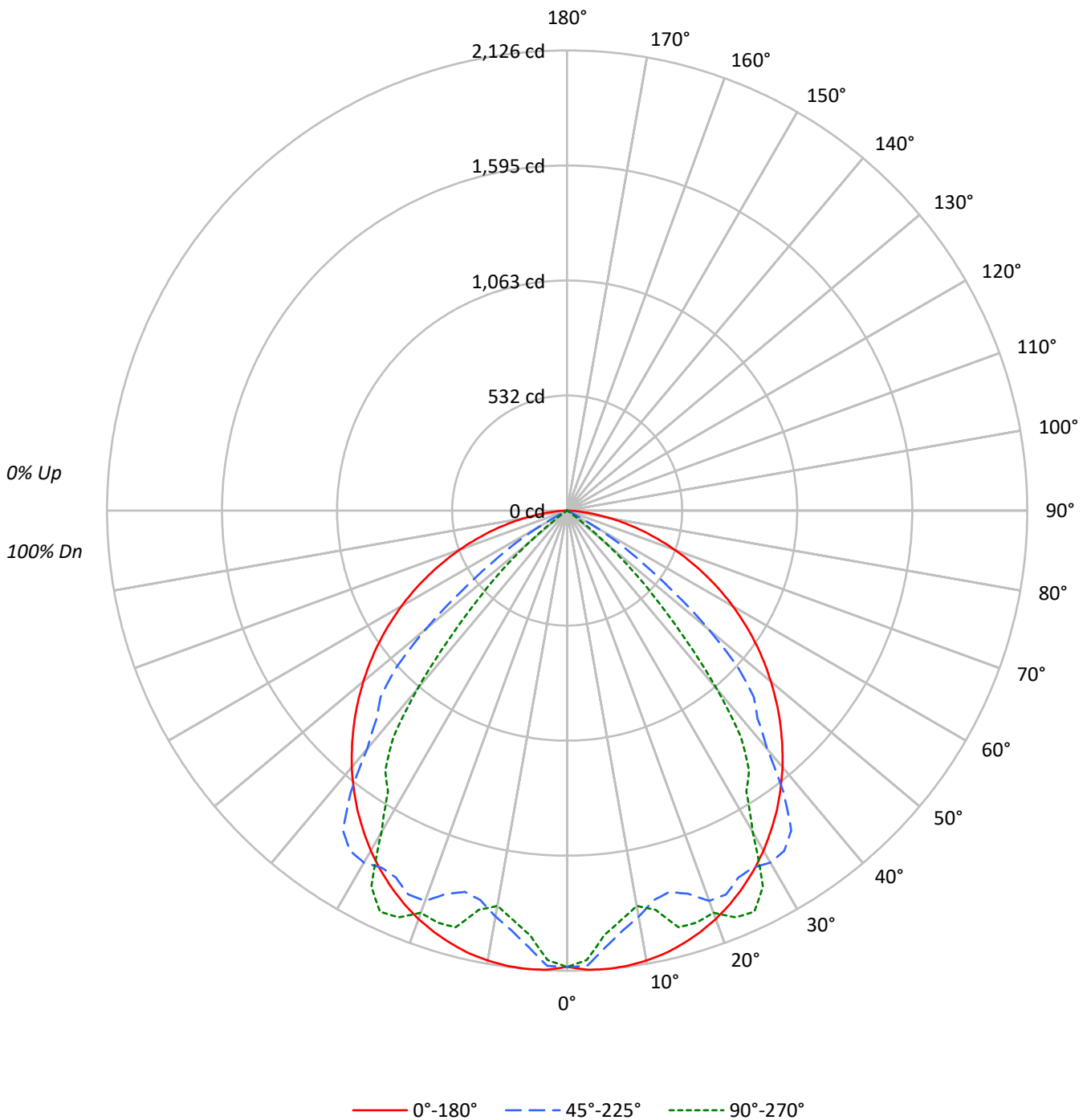
Input Watts (W): 63  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				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	115	115	115	115	112	112	112	112	107	107	107	103	103	103	98	98	98	97
1	107	104	101	98	105	102	99	96	98	95	93	94	92	90	91	89	88	86
2	100	93	88	83	97	91	86	82	88	84	80	85	82	79	82	79	77	75
3	92	84	77	72	90	82	76	71	80	74	70	77	73	69	75	71	68	66
4	85	76	68	63	83	74	68	62	72	66	62	70	65	61	68	64	60	58
5	79	68	61	55	77	67	60	55	65	59	54	64	58	54	62	57	53	52
6	74	62	55	49	72	61	54	49	60	53	49	58	53	48	57	52	48	46
7	69	57	49	44	67	56	49	44	55	48	44	53	48	43	52	47	43	41
8	64	52	45	40	63	52	45	40	50	44	39	49	43	39	48	43	39	37
9	60	48	41	36	59	48	41	36	47	40	36	46	40	36	45	39	35	34
10	56	45	38	33	55	44	37	33	43	37	33	42	37	33	42	36	32	31

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

	0°	45°	90°
0°	10928	10928	10928
5°	11063	10543	10246
10°	11112	10028	9759
15°	11115	9789	10696
20°	11077	10586	10906
25°	10988	10702	11697
30°	10858	11242	10272
35°	10689	11423	9271
40°	10476	9731	7295
45°	10212	8937	4296
50°	9912	6879	1863
55°	9571	3977	81
60°	9165	1503	10
65°	8648	98	0
70°	8003	91	0
75°	7170	80	0
80°	5971	119	0
85°	4104	238	0



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	191.4	4.5	4.4	0°	2108	2108	2108	2108	2108	
10°-20°	544.6	12.8	12.4	5°	2126	2090	2026	1989	1969	202
20°-30°	867.5	20.4	19.7	15°	2071	1895	1824	1945	1993	584
30°-40°	1005.9	23.7	22.9	25°	1921	1693	1871	2013	2045	885
40°-50°	842.4	19.8	19.1	35°	1689	1631	1805	1485	1465	1056
50°-60°	490.0	11.5	11.1	45°	1393	1421	1219	757	586	1074
60°-70°	221.0	5.2	5.0	55°	1059	1082	440	65	9	946
70°-80°	66.7	1.6	1.5	65°	705	516	8	1	0	698
80°-90°	16.5	0.4	0.4	75°	358	32	4	0	0	380
90°-100°	0.6	0.0	0.0	85°	69	15	4	1	0	84
100°-110°	0.0	0.0	0.0	90°	2	12	3	1	1	4
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°	1603.5	37.8	36.4	165°	0	0	0	0	0	0
0°-40°	2609.4	61.4	59.3	175°	0	0	0	0	0	0
0°-60°	3941.8	92.8	89.6	180°	0	0	0	0	0	0
0°-90°	4246.0	100.0	96.5							
90°-120°	0.6	0.0	0.0							
90°-150°	0.6	0.0	0.0							
90°-180°	1.0	0.0	0.0							
0°-180°	4246.6	100.0	96.5							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2108	2108	2108	2108	2108
2.5°	2123	2117	2105	2091	2078
5°	2126	2090	2026	1989	1969
7.5°	2122	2041	1957	1924	1908
10°	2111	1988	1905	1858	1854
12.5°	2095	1940	1844	1857	1889
15°	2071	1895	1824	1945	1993
17.5°	2042	1845	1856	1993	1995
20°	2008	1787	1919	1956	1977
22.5°	1967	1733	1919	1973	2034
25°	1921	1693	1871	2013	2045
27.5°	1870	1666	1859	1998	1959
30°	1814	1659	1878	1871	1716
32.5°	1753	1656	1865	1635	1540
35°	1689	1631	1805	1485	1465
37.5°	1620	1579	1642	1410	1319
40°	1548	1510	1438	1248	1078
42.5°	1471	1454	1302	1009	815
45°	1393	1421	1219	757	586
47.5°	1312	1378	1068	535	409
50°	1229	1317	853	366	231
52.5°	1145	1227	631	199	82
55°	1059	1082	440	65	9
57.5°	972	916	290	5	2
60°	884	789	145	2	1
62.5°	795	683	39	1	1
65°	705	516	8	1	0
67.5°	616	343	7	1	0
70°	528	209	6	0	0
72.5°	442	107	5	0	0
75°	358	32	4	0	0
77.5°	277	21	4	1	0
80°	200	19	4	0	0
82.5°	129	16	5	1	0
85°	69	15	4	1	0
87.5°	24	14	4	1	1
90°	2	12	3	1	1
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)