

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: P20017

Luminaire Tested: **WSC-232-EB81-U**

Issue Date: 3/3/2020

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



**Test Information**

Test Method: LM-41-14  
Report Number: P20017  
Test Lab: PTC RESEARCH  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: WSC-232-EB81-U  
Description: 4FT SURFACE MOUNT WRAP, 2 LAMP T8, WITH WHITE PLASTIC DIFFUSER  
Light Source: TWO LINEAR FLUORESCENT LAMPS, F32T8 32W - 2800 LUMENS EA  
Ballast/Driver: ONE ELECTRONIC BALLAST

Luminaire Equipment: Sample No.   Condition   Description

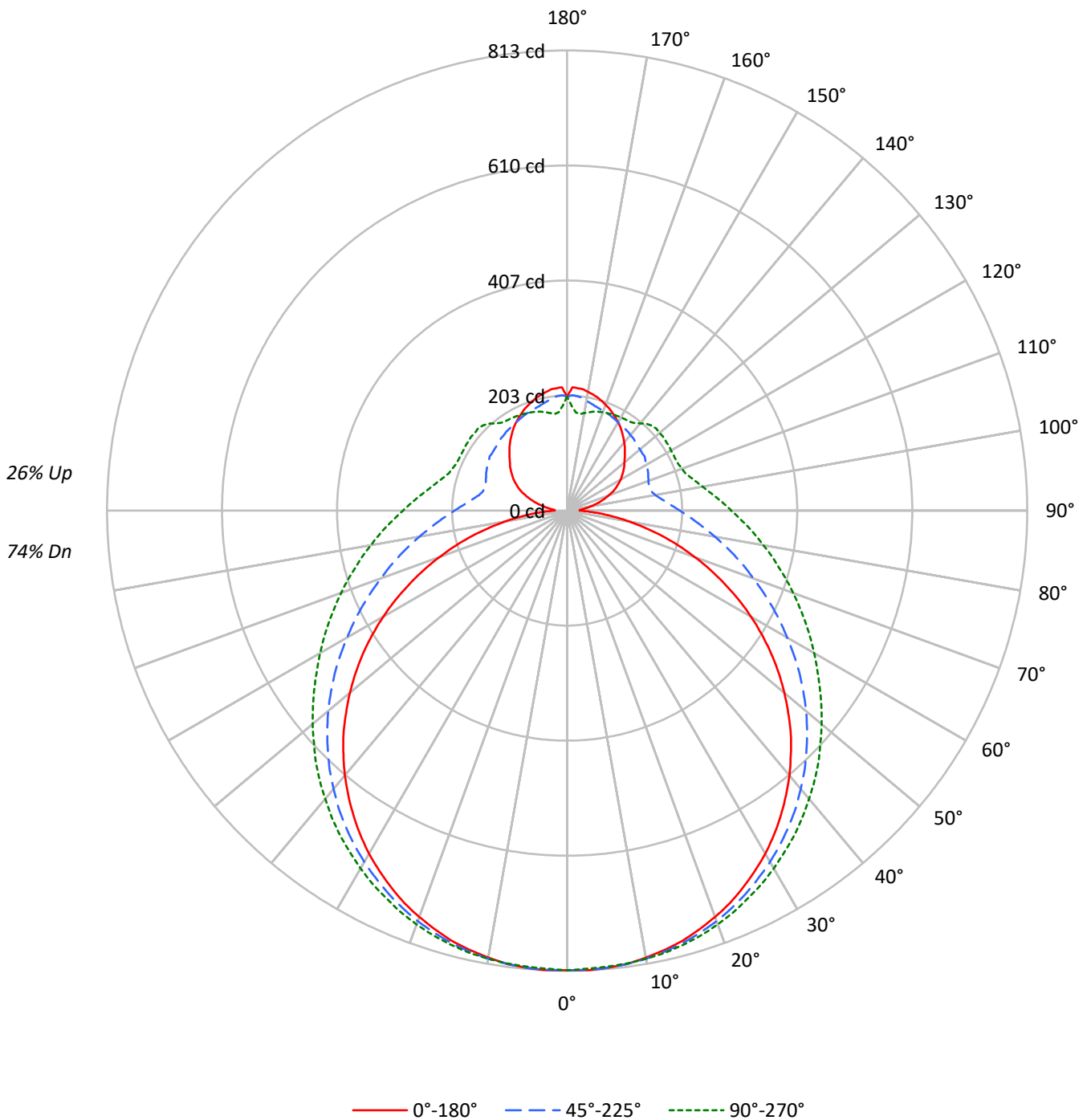
**Summary**

Lumens per Lamp: 2800 (2 lamps)  
Luminaire Lumens: 3946.9 lumens  
Efficiency: 70.5%  
Efficacy: 72.6 lumens/watt  
Spacing Criteria (0/90/45): 1.28 / 1.34 / 1.45  
Luminous Opening: Rectangular w/ Sides (W: 0.96' x L: 4.33' x H: 0.38')  
CIE Type: Semi-Direct

Input Watts (W): 54.4  
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	79	79	79	79	75	75	75	75	68	68	68	61	61	61	55	55	55	52
1	71	67	63	60	67	64	60	58	57	55	52	51	49	47	46	44	43	40
2	64	58	52	48	60	55	50	46	49	45	42	44	41	38	39	37	35	32
3	58	50	44	39	55	48	42	38	43	38	35	38	35	32	34	31	29	27
4	53	44	38	33	50	42	36	32	38	33	29	34	30	27	30	27	24	22
5	48	39	33	28	46	37	31	27	34	29	25	30	26	23	27	24	21	19
6	45	35	29	24	42	33	27	23	30	25	22	27	23	20	25	21	18	16
7	41	32	25	21	39	30	24	20	27	22	19	25	21	18	22	19	16	14
8	38	29	23	19	36	27	22	18	25	20	17	23	19	16	20	17	14	13
9	36	26	20	17	34	25	20	16	23	18	15	21	17	14	19	15	13	11
10	33	24	19	15	31	23	18	14	21	17	13	19	15	13	17	14	12	10

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

	0°	45°	90°
0°	2105	2105	2105
5°	2094	2050	2035
10°	2079	1997	1980
15°	2064	1946	1928
20°	2043	1896	1878
25°	2021	1846	1828
30°	1995	1796	1782
35°	1963	1745	1739
40°	1927	1692	1694
45°	1886	1638	1655
50°	1831	1584	1614
55°	1770	1527	1580
60°	1691	1468	1557
65°	1593	1419	1547
70°	1469	1376	1552
75°	1317	1355	1575
80°	1111	1356	1632
85°	867	1401	1739



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	77.1	2.0	1.4	0°	812	812	812	812	812	
10°-20°	223.3	5.7	4.0	5°	811	810	811	811	809	77
20°-30°	344.1	8.7	6.1	15°	787	786	791	795	794	222
30°-40°	425.7	10.8	7.6	25°	735	737	747	755	756	339
40°-50°	459.5	11.6	8.2	35°	658	664	682	695	700	412
50°-60°	444.5	11.3	7.9	45°	559	570	598	620	628	431
60°-70°	389.4	9.9	7.0	55°	440	461	501	533	545	393
70°-80°	311.3	7.9	5.6	65°	308	340	399	446	464	305
80°-90°	231.8	5.9	4.1	75°	174	223	306	366	387	184
90°-100°	177.7	4.5	3.2	85°	58	130	229	297	320	58
100°-110°	157.0	4.0	2.8	90°	22	100	199	267	290	14
110°-120°	154.1	3.9	2.8	95°	27	83	175	241	265	25
120°-130°	148.5	3.8	2.7	105°	60	90	151	205	226	63
130°-140°	134.0	3.4	2.4	115°	95	113	158	196	212	93
140°-150°	111.5	2.8	2.0	125°	121	130	167	200	213	108
150°-160°	84.8	2.1	1.5	135°	144	145	171	199	212	112
160°-170°	53.9	1.4	1.0	145°	169	160	177	192	192	106
170°-180°	18.8	0.5	0.3	155°	190	179	184	182	188	88
0°-30°	644.6	16.3	11.5	165°	207	199	191	178	181	58
0°-40°	1070.2	27.1	19.1	175°	217	213	203	179	174	21
0°-60°	1974.2	50.0	35.3	180°	201	201	201	201	201	
0°-90°	2906.8	73.6	51.9							
90°-120°	488.7	12.4	8.7							
90°-150°	882.7	22.4	15.8							
90°-180°	1040.0	26.3	18.6							
0°-180°	3946.9	100.0	70.5							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	812	812	812	812	812
2.5°	813	811	812	812	810
5°	811	810	811	811	809
7.5°	808	806	808	809	807
10°	802	801	804	806	804
12.5°	795	795	798	801	800
15°	787	786	791	795	794
17.5°	776	776	782	787	787
20°	764	765	772	778	778
22.5°	751	752	760	767	768
25°	735	737	747	755	756
27.5°	718	721	732	741	744
30°	700	703	717	727	730
32.5°	680	684	700	712	715
35°	658	664	682	695	700
37.5°	635	642	663	678	683
40°	611	619	642	659	665
42.5°	585	595	621	640	647
45°	559	570	598	620	628
47.5°	530	544	575	599	607
50°	501	517	551	577	587
52.5°	471	489	526	555	566
55°	440	461	501	533	545
57.5°	408	431	475	511	524
60°	375	401	449	489	504
62.5°	342	371	424	467	484
65°	308	340	399	446	464
67.5°	274	310	374	425	444
70°	240	280	350	405	425
72.5°	207	251	328	385	406
75°	174	223	306	366	387
77.5°	142	196	285	348	370
80°	111	172	265	330	352
82.5°	83	149	246	313	336
85°	58	130	229	297	320
87.5°	36	114	213	281	304
90°	22	100	199	267	290
92.5°	22	90	186	253	277
95°	27	83	175	241	265
97.5°	34	80	166	230	253
100°	42	81	158	220	243
102.5°	51	85	153	212	234
105°	60	90	151	205	226
107.5°	69	96	151	200	219
110°	78	103	153	198	216



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	87	109	155	196	213
115°	95	113	158	196	212
117.5°	102	118	160	197	212
120°	109	122	162	198	212
122.5°	115	126	164	199	213
125°	121	130	167	200	213
127.5°	127	134	167	201	214
130°	132	138	168	201	213
132.5°	138	142	169	201	214
135°	144	145	171	199	212
137.5°	151	149	173	197	208
140°	157	153	174	196	201
142.5°	163	156	176	194	195
145°	169	160	177	192	192
147.5°	175	165	178	189	191
150°	180	170	180	186	190
152.5°	185	174	182	184	189
155°	190	179	184	182	188
157.5°	195	184	186	180	186
160°	199	189	187	179	185
162.5°	203	194	189	178	183
165°	207	199	191	178	181
167.5°	210	204	194	177	178
170°	213	208	197	177	175
172.5°	216	211	201	177	172
175°	217	213	203	179	174
177.5°	218	214	204	180	185
180°	201	201	201	201	201

(END OF REPORT)