

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: 165P122

Luminaire Tested: **P410-254T5-TBW-UPL-Curved Specular Reflector**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-41-14  
Report Number: 165P122  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: P410-254T5-TBW-UPL-Curved Specular Reflector  
Description: P410 Series Surface Linear Luminaire with a white thin blade baffle; eight lensed upright apertures; a Curved Specular Reflector and tall lamp sockets.  
Light Source: Two - 54/T5/HO/830 - 4400 Lumens ea. - 54 Watts ea.  
Ballast/Driver: Energy Savings ES-2-T5-54-UNV-K Electronic - L.O.B.F. = Unk

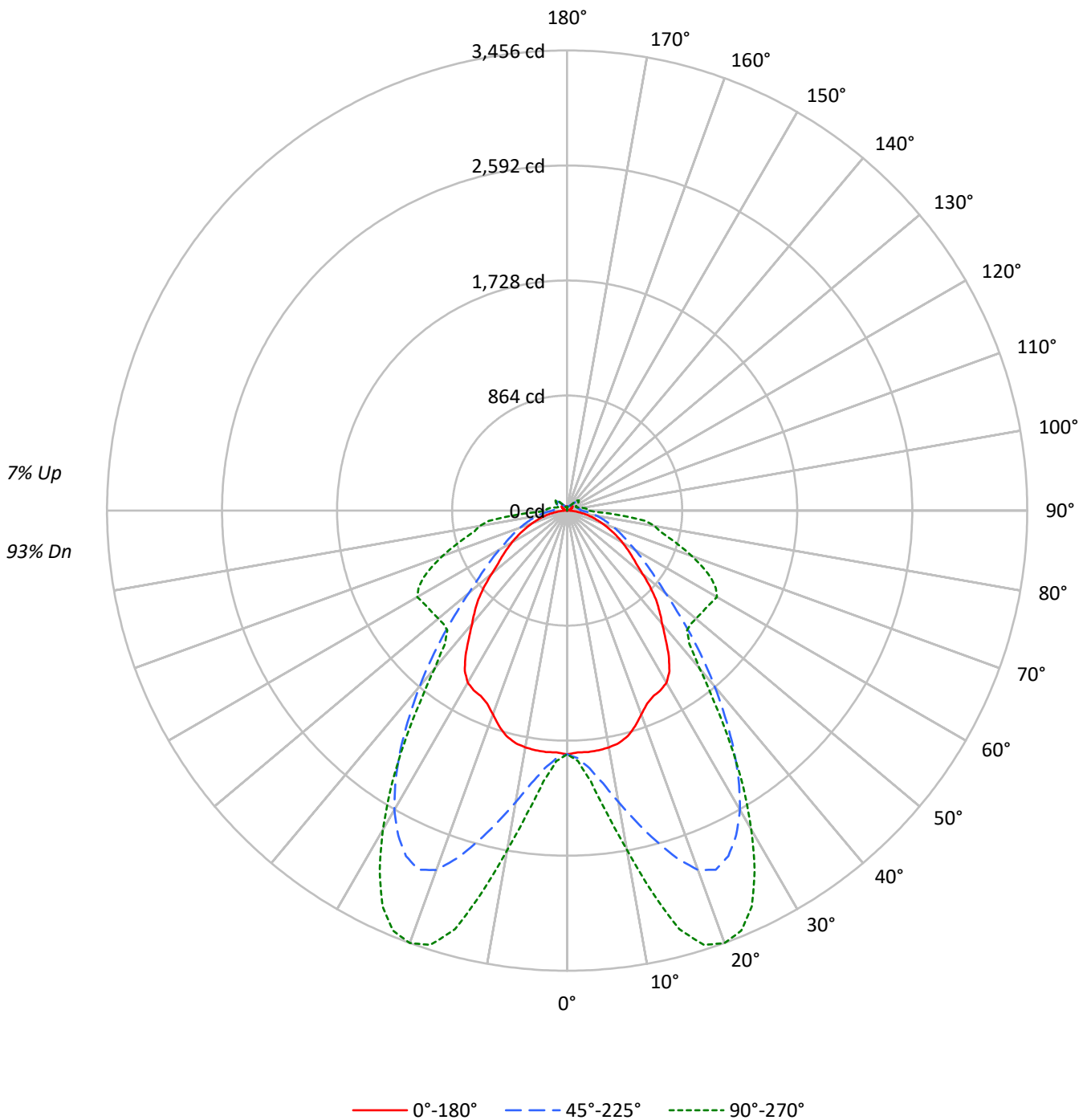
**Summary**

Lumens per Lamp: 4400 (2 lamps)  
Luminaire Lumens: 6716.0 lumens  
Efficiency: 76.3%  
Efficacy: 55.0 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.53 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.83' x L: 4' x H: 0.13')  
CIE Type: Direct  
  
Input Watts (W): 122  
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	90	90	90	90	87	87	87	87	82	82	82	77	77	77	73	73	73	71																				
1	82	78	75	72	79	76	73	71	72	70	67	68	66	65	65	63	62	60																				
2	75	69	64	60	73	67	62	59	64	60	56	60	57	54	57	55	53	51																				
3	69	61	55	50	66	60	54	50	57	52	48	54	50	47	51	48	45	43																				
4	63	55	48	43	61	53	47	43	51	46	42	48	44	41	46	43	40	38																				
5	58	49	43	38	57	48	42	37	46	41	37	44	39	36	42	38	35	33																				
6	54	45	38	33	52	44	37	33	42	36	32	40	35	32	38	34	31	29																				
7	50	41	34	30	49	40	34	29	38	33	29	37	32	28	35	31	28	26																				
8	47	37	31	27	46	36	31	26	35	30	26	34	29	26	32	28	25	24																				
9	44	34	28	24	43	34	28	24	32	27	24	31	27	23	30	26	23	21																				
10	41	32	26	22	40	31	26	22	30	25	21	29	24	21	28	24	21	20																				

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

	0°	45°	90°
0°	5933	5933	5933
5°	5906	6250	6553
10°	5912	7150	8285
15°	5840	8315	10485
20°	5551	9449	11281
25°	5413	9641	10938
30°	5483	9019	9500
35°	5147	7879	7619
40°	4573	6553	5779
45°	4183	5278	5042
50°	3584	4194	5364
55°	3198	3550	5885
60°	2940	3096	6626
65°	2675	2796	6840
70°	2428	2613	6608
75°	2190	2465	6261
80°	1892	2400	6605
85°	1383	2383	5133



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	193.8	2.9	2.2	0°	1830	1830	1830	1830	1830	
10°-20°	717.7	10.7	8.2	5°	1820	1860	1943	2019	2041	173
20°-30°	1194.2	17.8	13.6	15°	1755	2017	2566	3078	3255	491
30°-40°	1243.1	18.5	14.1	25°	1536	2032	2863	3184	3281	714
40°-50°	958.9	14.3	10.9	35°	1330	1938	2177	2180	2136	823
50°-60°	757.9	11.3	8.6	45°	942	1253	1305	1228	1272	719
60°-70°	614.4	9.1	7.0	55°	592	634	748	1037	1274	534
70°-80°	389.6	5.8	4.4	65°	373	391	469	857	1191	371
80°-90°	203.8	3.0	2.3	75°	196	214	295	444	792	208
90°-100°	102.8	1.5	1.2	85°	51	78	162	285	385	56
100°-110°	72.7	1.1	0.8	90°	0	32	107	211	162	3
110°-120°	66.0	1.0	0.7	95°	2	32	95	176	149	3
120°-130°	77.5	1.2	0.9	105°	11	35	80	104	88	12
130°-140°	64.0	1.0	0.7	115°	31	44	78	87	72	30
140°-150°	31.5	0.5	0.4	125°	50	68	99	109	100	44
150°-160°	16.6	0.2	0.2	135°	52	59	91	108	105	40
160°-170°	9.2	0.1	0.1	145°	46	45	50	50	46	29
170°-180°	2.5	0.0	0.0	155°	37	39	37	34	29	17
0°-30°	2105.7	31.4	23.9	165°	34	36	33	29	27	10
0°-40°	3348.8	49.9	38.1	175°	32	34	31	28	29	3
0°-60°	5065.6	75.4	57.6	180°	0	0	0	0	0	
0°-90°	6273.3	93.4	71.3							
90°-120°	241.4	3.6	2.7							
90°-150°	414.4	6.2	4.7							
90°-180°	443.0	6.6	5.0							
0°-180°	6716.0	100.0	76.3							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1830	1830	1830	1830	1830
2.5°	1818	1836	1862	1883	1883
5°	1820	1860	1943	2019	2041
7.5°	1816	1898	2065	2231	2291
10°	1806	1939	2223	2486	2586
12.5°	1789	1980	2392	2778	2927
15°	1755	2017	2566	3078	3255
17.5°	1698	2039	2735	3277	3420
20°	1628	2041	2872	3320	3456
22.5°	1569	2035	2919	3288	3415
25°	1536	2032	2863	3184	3281
27.5°	1521	2037	2749	2997	3049
30°	1492	2038	2595	2745	2767
32.5°	1430	2011	2398	2469	2461
35°	1330	1938	2177	2180	2136
37.5°	1212	1810	1945	1890	1815
40°	1110	1639	1722	1614	1545
42.5°	1027	1448	1507	1389	1358
45°	942	1253	1305	1228	1272
47.5°	843	1066	1120	1143	1259
50°	738	887	964	1103	1262
52.5°	654	735	842	1070	1268
55°	592	634	748	1037	1274
57.5°	534	565	664	1003	1285
60°	479	503	588	971	1299
62.5°	424	445	522	927	1258
65°	373	391	469	857	1191
67.5°	325	341	422	763	1098
70°	279	296	377	652	997
72.5°	236	254	335	543	891
75°	196	214	295	444	792
77.5°	156	177	259	368	711
80°	120	142	226	325	668
82.5°	84	109	194	316	593
85°	51	78	162	285	385
87.5°	20	49	130	237	212
90°	0	32	107	211	162
92.5°	1	32	100	196	157
95°	2	32	95	176	149
97.5°	4	32	91	155	135
100°	6	33	87	134	119
102.5°	8	34	84	117	102
105°	11	35	80	104	88
107.5°	15	36	78	95	79
110°	19	38	77	89	74



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	24	41	77	87	72
115°	31	44	78	87	72
117.5°	37	50	80	90	77
120°	43	55	85	95	84
122.5°	47	63	93	102	91
125°	50	68	99	109	100
127.5°	51	70	104	117	108
130°	51	68	104	119	114
132.5°	52	64	100	117	113
135°	52	59	91	108	105
137.5°	51	54	78	95	93
140°	49	51	67	79	77
142.5°	48	48	58	63	60
145°	46	45	50	50	46
147.5°	43	44	45	43	36
150°	41	42	41	38	32
152.5°	38	40	38	35	30
155°	37	39	37	34	29
157.5°	35	38	35	33	27
160°	35	37	34	31	27
162.5°	34	37	33	30	27
165°	34	36	33	29	27
167.5°	33	36	32	29	28
170°	33	35	31	28	29
172.5°	33	34	31	29	29
175°	32	34	31	28	29
177.5°	0	0	0	0	0
180°	0	0	0	0	0

(END OF REPORT)