

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: 165P126

Luminaire Tested: **P410-354T5-TBW-UPL NO LENS-LR-TALL SOCKETS**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-41-14  
Report Number: 165P126  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: P410-354T5-TBW-UPL NO LENS-LR-TALL SOCKETS  
Description: P410 Series Luminaire with TBW, reflector with turned up legs, tall sockets, and 16 unlensed upright apertures.  
Light Source: Three - F54T5/HO/830 - 4400 Lumens ea. - 54 Watts ea.  
Ballast/Driver: Two - Triad B254PUNV-D Electronic - L.O.B.F. = Unknown

**Summary**

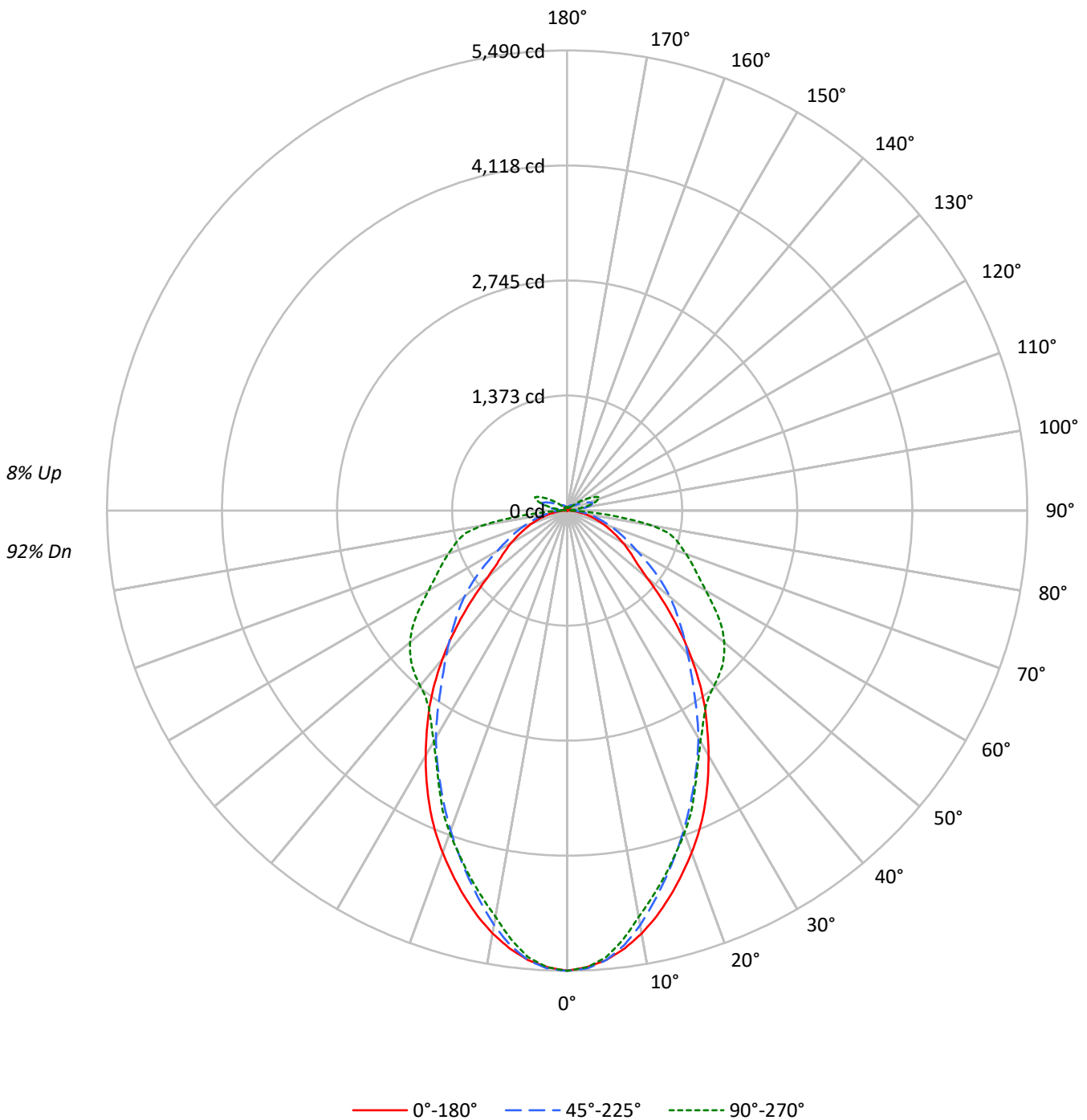
Lumens per Lamp: 4400 (3 lamps)  
Luminaire Lumens: 10572.0 lumens  
Efficiency: 80.1%  
Efficacy: 58.7 lumens/watt  
Spacing Criteria (0/90/45): 0.98 / 0.92 / 1.02  
Luminous Opening: Rectangular w/ Sides (W: 0.72' x L: 4' x H: 0.16')  
CIE Type: Direct

Input Watts (W): 180  
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	94	94	94	94	91	91	91	91	86	86	86	81	81	81	76	76	76	74
1	86	83	79	76	83	80	77	75	76	73	71	72	70	68	68	66	65	63
2	79	73	68	63	76	71	66	62	67	63	60	64	60	58	60	58	56	54
3	73	65	59	54	70	63	57	53	60	55	51	57	53	50	54	51	48	46
4	67	58	51	46	65	57	51	46	54	49	45	51	47	43	49	45	42	40
5	62	52	46	41	60	51	45	40	49	43	39	47	42	38	45	41	37	36
6	58	48	41	36	56	47	40	36	45	39	35	43	38	34	41	37	33	32
7	54	44	37	32	52	43	36	32	41	35	31	39	34	31	38	33	30	29
8	50	40	34	29	49	39	33	29	38	32	28	36	31	28	35	31	27	26
9	47	37	31	27	46	36	30	26	35	30	26	34	29	26	32	28	25	24
10	44	34	28	24	43	34	28	24	33	27	24	31	27	23	30	26	23	22

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

	0°	45°	90°
0°	20519	20519	20519
5°	20118	19866	19678
10°	19302	18452	17972
15°	18211	16735	16463
20°	17026	15142	15068
25°	15736	13611	13523
30°	14232	12206	12159
35°	12716	10649	11343
40°	10923	9457	11222
45°	8919	8481	11326
50°	6860	7615	11249
55°	5899	6563	10882
60°	5369	5432	10309
65°	4838	4689	10110
70°	4371	4047	10245
75°	3895	3414	10609
80°	3333	2822	9770
85°	2413	2172	4264



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	501.7	4.7	3.8	0°	5490	5490	5490	5490	5490	
10°-20°	1288.2	12.2	9.8	5°	5381	5385	5381	5373	5347	505
20°-30°	1682.6	15.9	12.7	15°	4757	4685	4540	4520	4508	1335
30°-40°	1721.0	16.3	13.0	25°	3887	3688	3586	3634	3619	1781
40°-50°	1569.4	14.8	11.9	35°	2865	2691	2637	2773	2873	1780
50°-60°	1270.5	12.0	9.6	45°	1755	1718	1902	2322	2619	1352
60°-70°	923.2	8.7	7.0	55°	957	979	1274	1838	2200	867
70°-80°	585.0	5.5	4.4	65°	594	617	741	1217	1688	592
80°-90°	219.5	2.1	1.7	75°	310	332	400	640	1344	330
90°-100°	108.6	1.0	0.8	85°	82	105	158	258	352	89
100°-110°	236.1	2.2	1.8	90°	0	30	82	143	34	5
110°-120°	213.0	2.0	1.6	95°	5	93	108	119	25	5
120°-130°	114.4	1.1	0.9	105°	19	109	310	345	307	20
130°-140°	58.4	0.6	0.4	115°	32	85	222	353	388	32
140°-150°	39.8	0.4	0.3	125°	43	88	112	180	194	38
150°-160°	24.2	0.2	0.2	135°	49	80	92	67	46	38
160°-170°	12.4	0.1	0.1	145°	52	65	78	61	44	32
170°-180°	4.0	0.0	0.0	155°	49	55	54	52	46	23
0°-30°	3472.5	32.8	26.3	165°	46	49	46	37	33	13
0°-40°	5193.5	49.1	39.3	175°	42	43	42	40	37	4
0°-60°	8033.4	76.0	60.9	180°	41	41	41	41	41	
0°-90°	9761.1	92.3	73.9							
90°-120°	557.8	5.3	4.2							
90°-150°	770.4	7.3	5.8							
90°-180°	811.0	7.7	6.1							
0°-180°	10572.0	100.0	80.1							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5490	5490	5490	5490	5490
2.5°	5451	5461	5469	5472	5453
5°	5381	5385	5381	5373	5347
7.5°	5268	5263	5227	5188	5155
10°	5122	5105	5021	4953	4921
12.5°	4951	4909	4783	4731	4715
15°	4757	4685	4540	4520	4508
17.5°	4552	4447	4301	4298	4294
20°	4343	4200	4064	4077	4095
22.5°	4125	3947	3822	3874	3877
25°	3887	3688	3586	3634	3619
27.5°	3633	3429	3360	3376	3380
30°	3374	3173	3131	3142	3179
32.5°	3115	2928	2882	2944	3017
35°	2865	2691	2637	2773	2873
37.5°	2595	2456	2426	2622	2783
40°	2314	2213	2240	2509	2729
42.5°	2033	1962	2066	2416	2677
45°	1755	1718	1902	2322	2619
47.5°	1481	1497	1751	2222	2540
50°	1236	1292	1599	2102	2447
52.5°	1065	1109	1440	1974	2337
55°	957	979	1274	1838	2200
57.5°	860	880	1108	1685	2047
60°	768	788	960	1524	1910
62.5°	678	701	841	1370	1789
65°	594	617	741	1217	1688
67.5°	516	539	648	1063	1597
70°	444	465	559	901	1510
72.5°	375	397	476	754	1422
75°	310	332	400	640	1344
77.5°	249	269	331	564	1239
80°	190	211	269	478	1026
82.5°	134	156	211	362	680
85°	82	105	158	258	352
87.5°	33	57	111	185	125
90°	0	30	82	143	34
92.5°	1	43	81	124	20
95°	5	93	108	119	25
97.5°	8	128	177	168	80
100°	12	135	237	237	165
102.5°	15	123	283	297	239
105°	19	109	310	345	307
107.5°	22	95	311	381	361
110°	26	86	283	402	397



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	29	84	252	393	415
115°	32	85	222	353	388
117.5°	35	86	191	310	341
120°	38	86	160	266	292
122.5°	40	88	133	222	243
125°	43	88	112	180	194
127.5°	44	87	102	140	147
130°	46	85	99	105	106
132.5°	48	83	97	79	71
135°	49	80	92	67	46
137.5°	51	77	88	67	38
140°	51	74	85	68	43
142.5°	52	70	81	64	47
145°	52	65	78	61	44
147.5°	51	62	72	59	44
150°	51	59	66	58	45
152.5°	51	57	60	56	46
155°	49	55	54	52	46
157.5°	49	54	50	45	42
160°	49	53	47	40	36
162.5°	48	51	46	38	34
165°	46	49	46	37	33
167.5°	45	48	45	39	35
170°	44	46	45	41	38
172.5°	43	44	43	41	39
175°	42	43	42	40	37
177.5°	41	42	41	39	37
180°	41	41	41	41	41

(END OF REPORT)