

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: 175P216

Luminaire Tested: **HBL-654T5-N-UNV-EBT2-UPL-U**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-41-14  
Report Number: 175P216  
Test Lab: METALUX RESEARCH LABS  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: HBL-654T5-N-UNV-EBT2-UPL-U  
Description: OPEN HIGH BAY LUMINAIRE WITH SPECULAR REFLECTOR, NARROW DISTRIBUTION  
WITH UPLIGHT  
Light Source: SIX 54 WATT T5HO - 4400 LUMENS EA  
Ballast/Driver: -

**Summary**

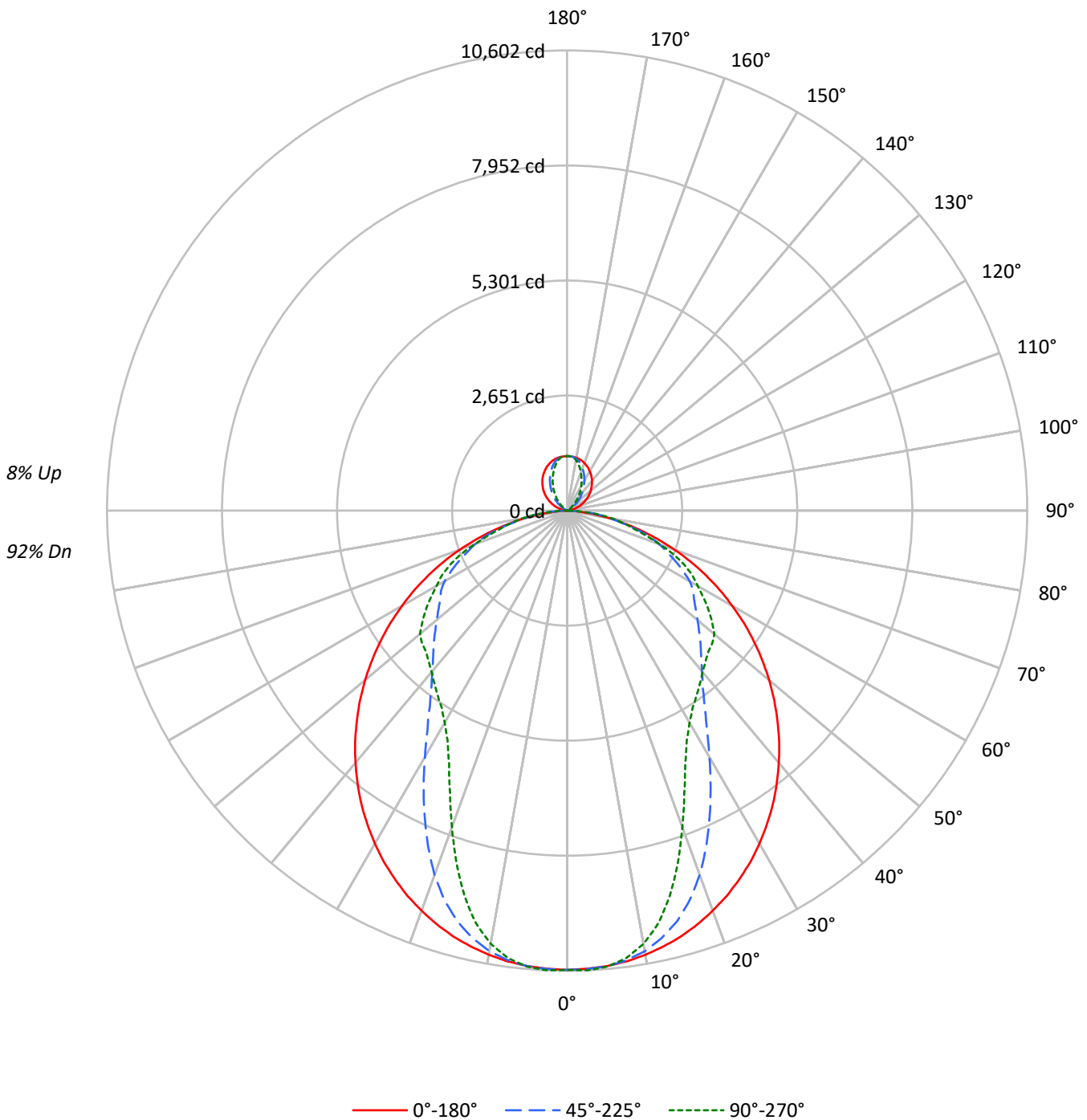
Lumens per Lamp: 4400 (6 lamps)  
Luminaire Lumens: 25623.0 lumens  
Efficiency: 97.1%  
Efficacy: 74.5 lumens/watt  
Spacing Criteria (0/90/45): 1.24 / 0.86 / 1.07  
Luminous Opening: Rectangular (W 1.58' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 344  
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	50	30	10	0	
RCR																						
0	114	114	114	114	110	110	110	110	103	103	103	97	97	97	92	92	92	89				
1	104	99	95	92	100	96	93	89	91	88	85	86	83	81	81	79	77	75				
2	95	87	80	75	91	84	78	73	80	75	71	75	71	68	71	68	65	63				
3	86	77	69	63	83	74	67	62	70	64	60	67	62	57	63	59	56	53				
4	79	68	60	53	77	66	59	53	63	56	51	60	54	50	57	52	48	46				
5	73	61	53	46	71	60	52	46	57	50	45	54	48	43	51	46	42	40				
6	68	55	47	41	65	54	46	40	51	44	39	49	43	38	47	41	37	35				
7	63	50	42	36	61	49	41	36	47	40	35	45	39	34	43	38	33	31				
8	59	46	38	33	57	45	37	32	43	36	32	41	35	31	40	34	30	28				
9	55	42	35	29	53	42	34	29	40	33	29	38	32	28	37	31	27	26				
10	52	39	32	27	50	38	31	27	37	31	26	36	30	26	34	29	25	23				

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

	0°	45°	90°
0°	17987	17987	17987
5°	17972	17973	17999
10°	17933	17786	17489
15°	17866	17229	16133
20°	17741	16153	14040
25°	17584	14576	12064
30°	17392	12862	11063
35°	17142	11449	10787
40°	16833	10714	10771
45°	16472	10446	11049
50°	16060	10362	11700
55°	15562	10566	11772
60°	14953	11098	11805
65°	14164	11075	12040
70°	13079	11230	11280
75°	11524	10677	10316
80°	9141	9533	10433
85°	5168	9087	8190



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	997.5	3.9	3.8	0°	10583	10583	10583	10583	10583	
10°-20°	2719.1	10.6	10.3	5°	10534	10533	10535	10522	10550	###
20°-30°	3624.3	14.1	13.7	15°	10154	10096	9792	9347	9169	2864
30°-40°	3897.0	15.2	14.8	25°	9377	9074	7773	6719	6433	4321
40°-50°	3838.6	15.0	14.5	35°	8262	7399	5518	5195	5199	5165
50°-60°	3481.1	13.6	13.2	45°	6853	5274	4346	4499	4597	5286
60°-70°	2779.7	10.8	10.5	55°	5252	3437	3566	3919	3973	4693
70°-80°	1678.0	6.5	6.4	65°	3522	2309	2754	2964	2994	3482
80°-90°	472.1	1.8	1.8	75°	1755	1447	1626	1560	1571	1859
90°-100°	37.5	0.1	0.1	85°	265	387	466	445	420	362
100°-110°	66.1	0.3	0.3	90°	4	6	11	14	14	15
110°-120°	128.1	0.5	0.5	95°	37	37	40	29	16	49
120°-130°	235.8	0.9	0.9	105°	198	43	41	40	38	212
130°-140°	362.3	1.4	1.4	115°	400	184	54	43	42	397
140°-150°	439.5	1.7	1.7	125°	608	398	201	102	80	543
150°-160°	429.6	1.7	1.6	135°	799	631	421	299	259	617
160°-170°	318.7	1.2	1.2	145°	971	859	667	551	510	607
170°-180°	117.8	0.5	0.4	155°	1110	1058	919	819	787	511
0°-30°	7340.9	28.6	27.8	165°	1207	1193	1140	1081	1063	340
0°-40°	11237.9	43.9	42.6	175°	1249	1249	1248	1243	1248	119
0°-60°	18557.6	72.4	70.3	180°	1254	1254	1254	1254	1254	
0°-90°	23487.5	91.7	89.0							
90°-120°	231.7	0.9	0.9							
90°-150°	1269.4	5.0	4.8							
90°-180°	2136.0	8.3	8.1							
0°-180°	25623.0	100.0	97.1							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	10583	10583	10583	10583	10583
2.5°	10564	10572	10573	10570	10602
5°	10534	10533	10535	10522	10550
7.5°	10476	10471	10451	10396	10400
10°	10391	10382	10306	10172	10134
12.5°	10284	10257	10085	9825	9734
15°	10154	10096	9792	9347	9169
17.5°	9993	9902	9404	8738	8490
20°	9809	9662	8931	8066	7763
22.5°	9609	9387	8373	7373	7052
25°	9377	9074	7773	6719	6433
27.5°	9133	8718	7156	6159	5968
30°	8862	8323	6554	5749	5637
32.5°	8570	7882	5991	5435	5383
35°	8262	7399	5518	5195	5199
37.5°	7933	6889	5134	5009	5025
40°	7587	6357	4829	4828	4855
42.5°	7231	5813	4567	4648	4718
45°	6853	5274	4346	4499	4597
47.5°	6472	4743	4125	4365	4533
50°	6074	4255	3919	4283	4425
52.5°	5668	3812	3735	4147	4207
55°	5252	3437	3566	3919	3973
57.5°	4830	3108	3447	3678	3721
60°	4399	2820	3265	3412	3473
62.5°	3964	2551	3010	3178	3263
65°	3522	2309	2754	2964	2994
67.5°	3077	2082	2483	2673	2667
70°	2632	1882	2260	2321	2270
72.5°	2186	1699	1982	1928	1884
75°	1755	1447	1626	1560	1571
77.5°	1330	1192	1257	1292	1319
80°	934	958	974	1048	1066
82.5°	568	650	738	773	775
85°	265	387	466	445	420
87.5°	62	165	122	98	89
90°	4	6	11	14	14
92.5°	42	49	49	30	14
95°	37	37	40	29	16
97.5°	67	34	40	34	22
100°	111	33	40	36	31
102.5°	153	33	40	39	35
105°	198	43	41	40	38
107.5°	248	65	40	40	39
110°	299	99	41	42	41



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	351	140	45	43	43
115°	400	184	54	43	42
117.5°	454	235	78	46	44
120°	504	286	109	54	48
122.5°	557	342	153	74	60
125°	608	398	201	102	80
127.5°	657	454	252	140	111
130°	707	513	306	188	152
132.5°	755	573	363	242	203
135°	799	631	421	299	259
137.5°	845	689	480	358	318
140°	889	746	541	419	379
142.5°	933	805	606	485	444
145°	971	859	667	551	510
147.5°	1008	912	730	617	579
150°	1043	964	794	684	648
152.5°	1078	1013	856	751	718
155°	1110	1058	919	819	787
157.5°	1137	1100	979	887	857
160°	1163	1136	1036	953	926
162.5°	1188	1167	1091	1018	997
165°	1207	1193	1140	1081	1063
167.5°	1223	1214	1180	1139	1125
170°	1235	1230	1213	1187	1180
172.5°	1244	1241	1234	1223	1222
175°	1249	1249	1248	1243	1248
177.5°	1252	1253	1253	1251	1255
180°	1254	1254	1254	1254	1254

(END OF REPORT)