

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: 175P213

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

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-41-14  
Report Number: 175P213  
Test Lab: METALUX RESEARCH LABS  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: HBL-654T5-M-UNV-EBT2-UPL-U  
Description: OPEN HIGH BAY LUMINAIRE WITH MATTE REFLECTOR, MEDIUM  
DISTRIBUTION WITH UPLIGHT  
Light Source: SIX 54 WATT T5HO - 4400 LUMENS EA  
Ballast/Driver: -

**Summary**

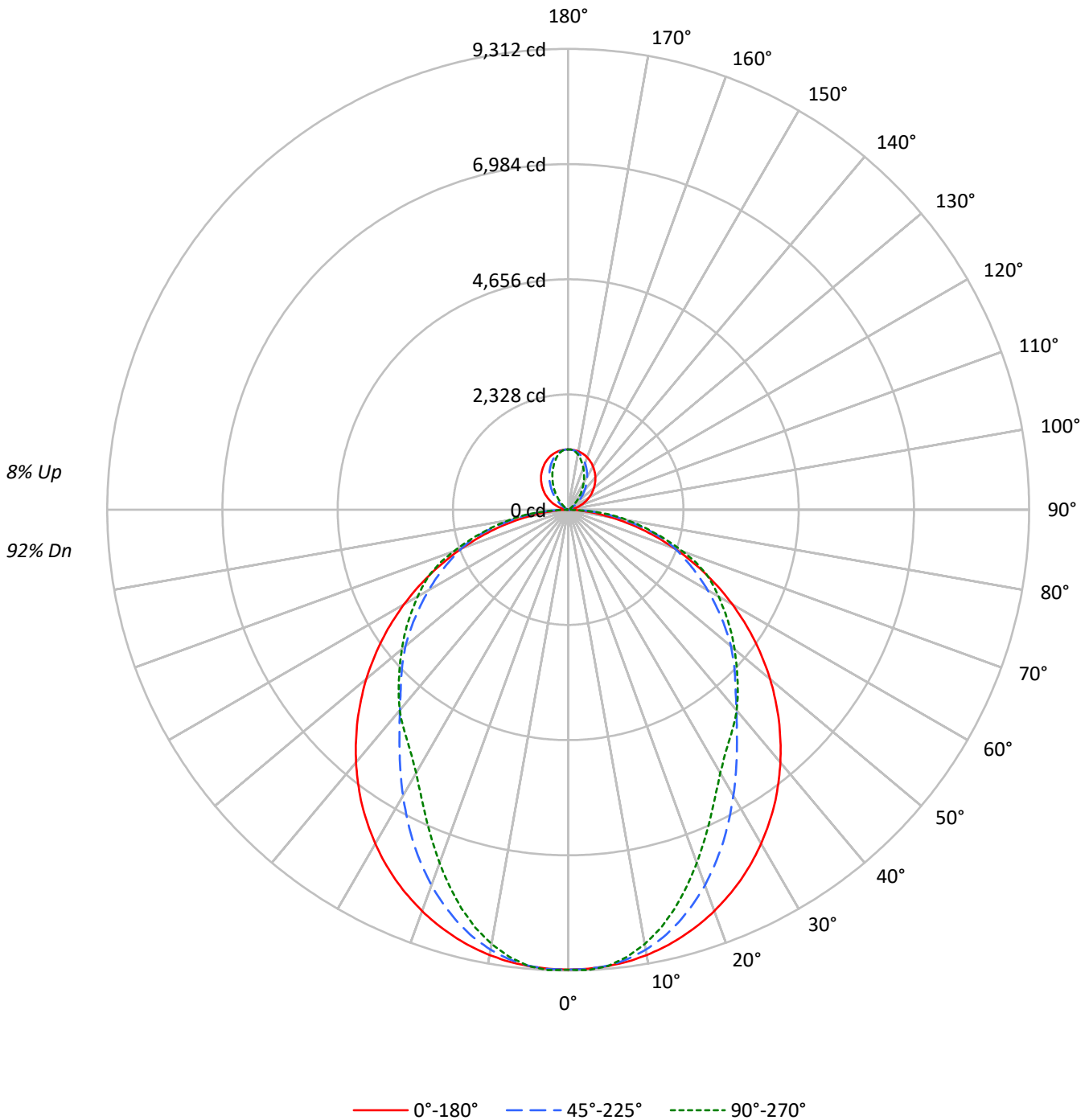
Lumens per Lamp: 4400 (6 lamps)  
Luminaire Lumens: 25270.8 lumens  
Efficiency: 95.7%  
Efficacy: 73.7 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.01 / 1.2  
Luminous Opening: Rectangular (W 1.58' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 343  
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	112	112	112	112	109	109	109	109	102	102	102	96	96	96	91	91	91	88
1	102	98	93	90	99	95	91	87	89	86	83	84	82	79	79	77	76	73
2	93	85	78	73	90	83	77	72	78	73	69	74	70	66	70	66	63	61
3	85	75	67	61	82	73	65	60	69	63	58	65	60	56	62	57	54	51
4	78	66	58	52	75	64	57	51	61	55	49	58	52	48	55	50	46	44
5	71	59	51	45	69	58	50	44	55	48	43	52	46	42	50	45	40	38
6	66	53	45	39	64	52	44	38	50	43	38	47	41	37	45	40	36	34
7	61	49	40	35	59	47	40	34	45	38	33	43	37	33	41	36	32	30
8	57	44	36	31	55	43	36	31	41	35	30	40	34	29	38	33	29	27
9	53	41	33	28	52	40	33	28	38	32	27	37	31	26	35	30	26	24
10	50	38	30	25	49	37	30	25	35	29	25	34	28	24	33	27	24	22

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

	0°	45°	90°
0°	15796	15796	15796
5°	15793	15779	15788
10°	15770	15584	15378
15°	15707	15185	14667
20°	15610	14607	13737
25°	15477	13894	12791
30°	15296	13096	12056
35°	15080	12320	11776
40°	14794	11725	11750
45°	14465	11453	11619
50°	14080	11348	11597
55°	13607	11147	11695
60°	13022	11054	11921
65°	12310	11087	12378
70°	11365	11419	12229
75°	10159	11511	11833
80°	8525	11001	11931
85°	6123	11408	11564



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	875.4	3.5	3.3	0°	9294	9294	9294	9294	9294	
10°-20°	2424.9	9.6	9.2	5°	9257	9254	9249	9228	9254	880
20°-30°	3438.7	13.6	13.0	15°	8927	8850	8630	8403	8336	2519
30°-40°	3892.3	15.4	14.7	25°	8253	7992	7409	6957	6821	3801
40°-50°	3916.6	15.5	14.8	35°	7268	6756	5938	5682	5676	4542
50°-60°	3515.2	13.9	13.3	45°	6018	5273	4765	4831	4834	4639
60°-70°	2811.9	11.1	10.7	55°	4592	3774	3762	3897	3947	4101
70°-80°	1771.1	7.0	6.7	65°	3061	2568	2757	3004	3078	3027
80°-90°	571.1	2.3	2.2	75°	1547	1476	1753	1791	1802	1643
90°-100°	41.0	0.2	0.2	85°	314	467	585	598	593	374
100°-110°	69.8	0.3	0.3	90°	5	14	12	14	13	22
110°-120°	124.6	0.5	0.5	95°	36	45	44	32	17	47
120°-130°	221.9	0.9	0.8	105°	188	43	49	48	45	202
130°-140°	342.9	1.4	1.3	115°	381	173	55	49	51	377
140°-150°	420.1	1.7	1.6	125°	580	377	185	92	74	517
150°-160°	412.9	1.6	1.6	135°	767	604	398	277	238	591
160°-170°	306.7	1.2	1.2	145°	932	822	638	522	483	583
170°-180°	113.8	0.5	0.4	155°	1069	1014	883	787	757	492
0°-30°	6739.1	26.7	25.5	165°	1166	1147	1092	1039	1022	329
0°-40°	10631.3	42.1	40.3	175°	1211	1212	1207	1200	1204	115
0°-60°	18063.1	71.5	68.4	180°	1219	1219	1219	1219	1219	
0°-90°	23217.2	91.9	87.9							
90°-120°	235.3	0.9	0.9							
90°-150°	1220.2	4.8	4.6							
90°-180°	2054.0	8.1	7.8							
0°-180°	25270.8	100.0	95.7							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	9294	9294	9294	9294	9294
2.5°	9284	9283	9288	9284	9312
5°	9257	9254	9249	9228	9254
7.5°	9211	9192	9163	9111	9114
10°	9138	9110	9030	8931	8911
12.5°	9045	8995	8852	8690	8652
15°	8927	8850	8630	8403	8336
17.5°	8790	8678	8367	8072	7972
20°	8631	8477	8076	7712	7595
22.5°	8450	8244	7752	7336	7206
25°	8253	7992	7409	6957	6821
27.5°	8032	7712	7043	6580	6457
30°	7794	7409	6673	6234	6143
32.5°	7537	7091	6301	5931	5884
35°	7268	6756	5938	5682	5676
37.5°	6970	6398	5594	5468	5491
40°	6668	6034	5285	5272	5296
42.5°	6347	5656	5010	5066	5071
45°	6018	5273	4765	4831	4834
47.5°	5673	4889	4532	4582	4607
50°	5325	4508	4292	4345	4386
52.5°	4960	4135	4030	4116	4170
55°	4592	3774	3762	3897	3947
57.5°	4213	3442	3504	3663	3719
60°	3831	3133	3252	3425	3507
62.5°	3448	2844	3007	3211	3297
65°	3061	2568	2757	3004	3078
67.5°	2671	2284	2516	2767	2792
70°	2287	1998	2298	2458	2461
72.5°	1910	1728	2061	2119	2125
75°	1547	1476	1753	1791	1802
77.5°	1197	1236	1431	1475	1491
80°	871	1014	1124	1191	1219
82.5°	570	743	848	933	943
85°	314	467	585	598	593
87.5°	109	229	239	193	171
90°	5	14	12	14	13
92.5°	41	52	52	31	12
95°	36	45	44	32	17
97.5°	64	42	46	35	24
100°	106	41	48	42	34
102.5°	146	36	48	43	39
105°	188	43	49	48	45
107.5°	237	62	49	51	49
110°	282	92	45	50	49



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	332	130	46	50	51
115°	381	173	55	49	51
117.5°	431	221	73	50	50
120°	479	270	101	55	49
122.5°	531	323	140	69	57
125°	580	377	185	92	74
127.5°	626	432	233	127	100
130°	674	489	285	171	138
132.5°	721	545	340	221	184
135°	767	604	398	277	238
137.5°	811	660	456	334	295
140°	854	715	516	395	354
142.5°	895	770	577	458	420
145°	932	822	638	522	483
147.5°	970	875	701	590	553
150°	1005	925	762	655	620
152.5°	1038	971	824	721	688
155°	1069	1014	883	787	757
157.5°	1098	1054	942	854	826
160°	1124	1090	996	919	894
162.5°	1148	1122	1048	981	959
165°	1166	1147	1092	1039	1022
167.5°	1184	1171	1133	1093	1082
170°	1195	1189	1165	1138	1133
172.5°	1206	1202	1190	1175	1175
175°	1211	1212	1207	1200	1204
177.5°	1217	1217	1217	1215	1218
180°	1219	1219	1219	1219	1219

(END OF REPORT)