

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: 236p273

Luminaire Tested: **HBL-454T5-W-UNV-EBT1-UPL-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-41-14
Report Number: 236p273
Test Lab: METALUX RESEARCH LABS
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: HBL-454T5-W-UNV-EBT1-UPL-U
Description: OPEN HIGH BAY 4 LAMP T5 LUMINAIRE WITH WIDE DISTRIBUTION
WHITE REFLECTOR, WITH UPLIGHT
Light Source: FOUR 54 WATT T5HO - 4400 LUMENS EA
Ballast/Driver: -

Summary

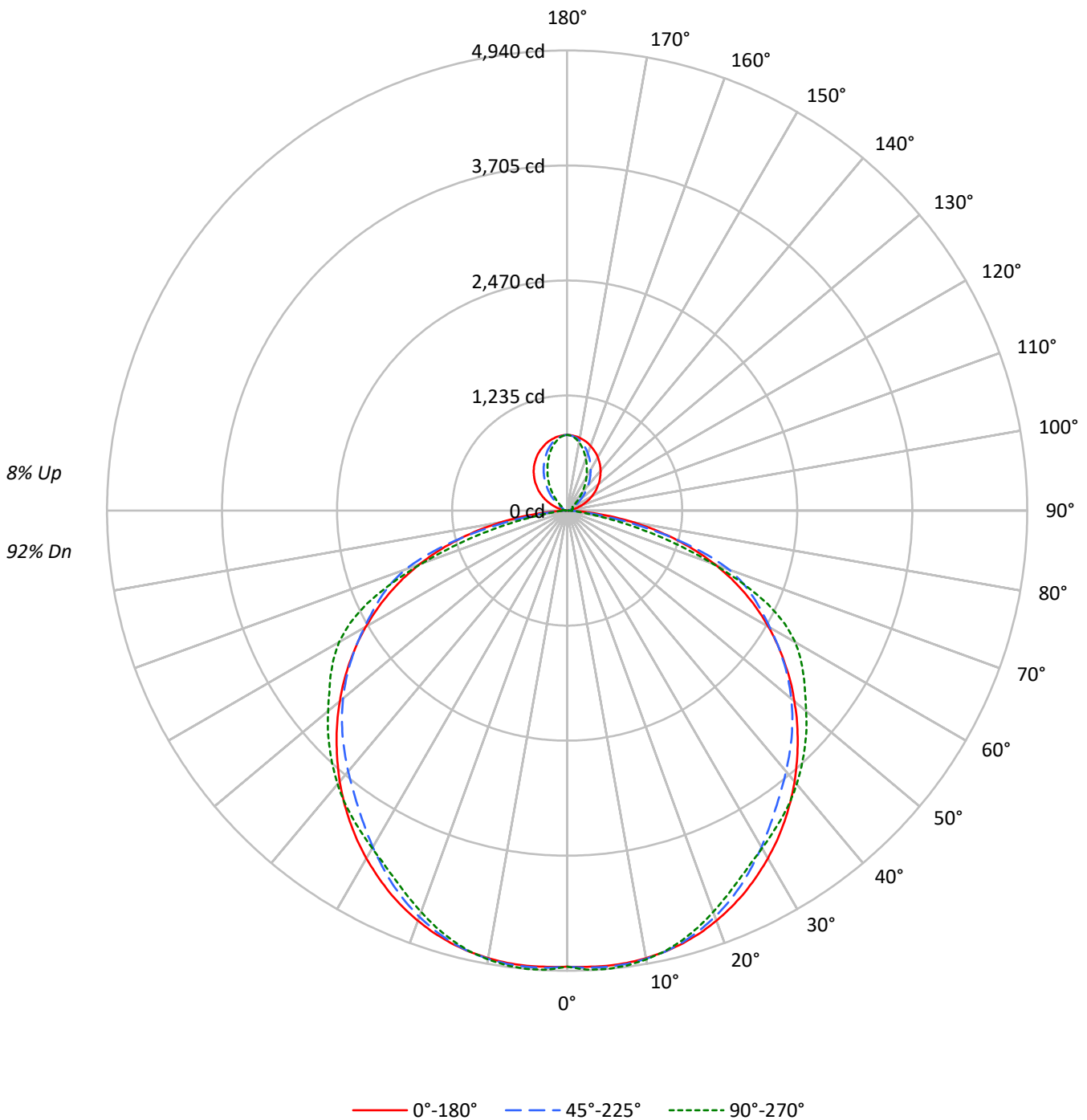
Lumens per Lamp: 4400 (4 lamps)
Luminaire Lumens: 16535.7 lumens
Efficiency: 94.0%
Efficacy: 71.6 lumens/watt
Spacing Criteria (0/90/45): 1.3 / 1.28 / 1.41
Luminous Opening: Rectangular (W 1.62' x L: 3.75' x H: 0')
CIE Type: Direct

Input Watts (W): 231
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	110	110	110	110	107	107	107	107	100	100	100		94	94	94		89	89	89	86
1	100	96	92	88	97	93	89	86	87	84	82		82	80	78		78	76	74	72
2	91	83	76	71	88	80	75	69	76	71	67		72	68	64		68	64	61	59
3	82	72	65	58	79	70	63	57	66	60	55		63	58	53		59	55	52	49
4	75	64	55	49	72	62	54	48	59	52	47		56	50	45		53	48	44	42
5	69	57	48	42	66	55	47	41	52	45	40		50	44	39		47	42	38	36
6	64	51	42	36	61	50	42	36	47	40	35		45	39	34		43	37	33	31
7	59	46	38	32	57	45	37	32	43	36	31		41	35	30		39	33	29	27
8	55	42	34	28	53	41	33	28	39	32	27		37	31	27		36	30	26	24
9	51	38	31	25	49	38	30	25	36	29	25		34	28	24		33	27	24	22
10	48	35	28	23	46	35	27	23	33	27	22		32	26	22		30	25	21	20

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8650	8650	8650
5°	8699	8717	8759
10°	8751	8764	8774
15°	8792	8774	8732
20°	8809	8726	8621
25°	8807	8634	8515
30°	8793	8509	8538
35°	8776	8416	8673
40°	8758	8430	8843
45°	8746	8521	9010
50°	8752	8631	9203
55°	8783	8746	9550
60°	8821	8885	9994
65°	8823	9233	9935
70°	8723	9549	8568
75°	8333	8442	6361
80°	7314	5707	3428
85°	4905	2351	1966



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	468.3	2.8	2.7	0°	4897	4897	4897	4897	4897	
10°-20°	1351.8	8.2	7.7	5°	4906	4910	4916	4921	4940	467
20°-30°	2046.0	12.4	11.6	15°	4808	4808	4798	4776	4775	1358
30°-40°	2495.8	15.1	14.2	25°	4519	4501	4430	4375	4369	2083
40°-50°	2677.6	16.2	15.2	35°	4070	4006	3903	3985	4022	2547
50°-60°	2563.7	15.5	14.6	45°	3501	3352	3411	3564	3607	2702
60°-70°	2142.3	13.0	12.2	55°	2852	2617	2840	3023	3101	2550
70°-80°	1186.1	7.2	6.7	65°	2111	1909	2209	2390	2377	2083
80°-90°	220.9	1.3	1.3	75°	1221	1152	1237	1017	932	1281
90°-100°	23.8	0.1	0.1	85°	242	224	116	103	97	300
100°-110°	55.3	0.3	0.3	90°	4	9	10	13	13	11
110°-120°	94.1	0.6	0.5	95°	13	15	23	26	29	18
120°-130°	154.3	0.9	0.9	105°	100	27	43	55	59	109
130°-140°	230.5	1.4	1.3	115°	235	113	51	57	63	233
140°-150°	278.7	1.7	1.6	125°	374	250	130	77	73	333
150°-160°	270.9	1.6	1.5	135°	500	396	270	192	169	386
160°-170°	200.8	1.2	1.1	145°	612	538	426	353	331	382
170°-180°	75.1	0.5	0.4	155°	701	659	580	519	502	323
0°-30°	3866.1	23.4	22.0	165°	769	750	715	680	672	217
0°-40°	6361.9	38.5	36.1	175°	806	803	798	791	793	76
0°-60°	11603.1	70.2	65.9	180°	813	813	813	813	813	
0°-90°	15152.3	91.6	86.1							
90°-120°	173.1	1.0	1.0							
90°-150°	836.5	5.1	4.8							
90°-180°	1383.0	8.4	7.9							
0°-180°	16535.7	100.0	94.0							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	4897	4897	4897	4897	4897
2.5°	4903	4906	4913	4918	4933
5°	4906	4910	4916	4921	4940
7.5°	4899	4903	4910	4912	4926
10°	4879	4883	4886	4885	4892
12.5°	4851	4853	4852	4839	4845
15°	4808	4808	4798	4776	4775
17.5°	4754	4750	4726	4694	4688
20°	4686	4679	4642	4595	4586
22.5°	4608	4595	4542	4487	4477
25°	4519	4501	4430	4375	4369
27.5°	4418	4393	4303	4263	4270
30°	4311	4274	4172	4163	4186
32.5°	4195	4145	4037	4074	4103
35°	4070	4006	3903	3985	4022
37.5°	3938	3855	3777	3892	3935
40°	3798	3694	3656	3794	3835
42.5°	3651	3527	3534	3685	3724
45°	3501	3352	3411	3564	3607
47.5°	3347	3168	3280	3438	3484
50°	3185	2981	3141	3302	3349
52.5°	3024	2796	2994	3160	3219
55°	2852	2617	2840	3023	3101
57.5°	2677	2440	2679	2896	2974
60°	2497	2265	2515	2760	2829
62.5°	2307	2091	2358	2605	2634
65°	2111	1909	2209	2390	2377
67.5°	1905	1720	2046	2102	2038
70°	1689	1529	1849	1747	1659
72.5°	1460	1335	1574	1378	1288
75°	1221	1152	1237	1017	932
77.5°	972	983	888	677	601
80°	719	778	561	389	337
82.5°	471	494	285	188	169
85°	242	224	116	103	97
87.5°	64	56	49	45	41
90°	4	9	10	13	13
92.5°	5	10	18	20	21
95°	13	15	23	26	29
97.5°	28	17	32	31	33
100°	49	18	37	43	45
102.5°	74	23	43	51	56
105°	100	27	43	55	59
107.5°	133	39	43	58	64
110°	167	60	45	59	65



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	202	86	48	59	65
115°	235	113	51	57	63
117.5°	271	146	60	60	63
120°	305	180	77	62	66
122.5°	340	215	101	68	68
125°	374	250	130	77	73
127.5°	406	286	161	96	85
130°	438	323	196	125	105
132.5°	471	361	235	158	137
135°	500	396	270	192	169
137.5°	530	432	309	231	207
140°	558	468	347	270	246
142.5°	586	504	387	311	288
145°	612	538	426	353	331
147.5°	635	570	466	394	372
150°	659	602	505	436	415
152.5°	682	632	543	478	458
155°	701	659	580	519	502
157.5°	720	684	617	561	545
160°	737	708	652	602	587
162.5°	755	730	685	642	631
165°	769	750	715	680	672
167.5°	781	766	742	715	710
170°	791	781	764	745	742
172.5°	800	793	784	771	770
175°	806	803	798	791	793
177.5°	811	809	808	805	807
180°	813	813	813	813	813

(END OF REPORT)