

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: P30499

Luminaire Tested: **HBI-454T5-N-A-UNV-EHT1-SDF-UPL**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-41-14  
Report Number: P30499  
Test Lab: METALUX RESEARCH LABS  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: HBI-454T5-N-A-UNV-EHT1-SDF-UPL  
Description: HBI SERIES, FULL BODY STEEL HOUSING, WITH FOUR T5HO LAMPS,  
NARROW DISTRIBUTION SPECULAR REFLECTOR AND PRISMATIC ACRYLIC LENS  
IN SLOTTED DOORFRAME, WITH UPLIGHT  
Light Source: FOUR T5 HIGH OUTPUT LINEAR FLUORESCENT LAMPS - 4400 LUMENS EA  
Ballast/Driver: ADVANCE ELECTRONIC BALLAST  
ICN455490C2LSG

**Summary**

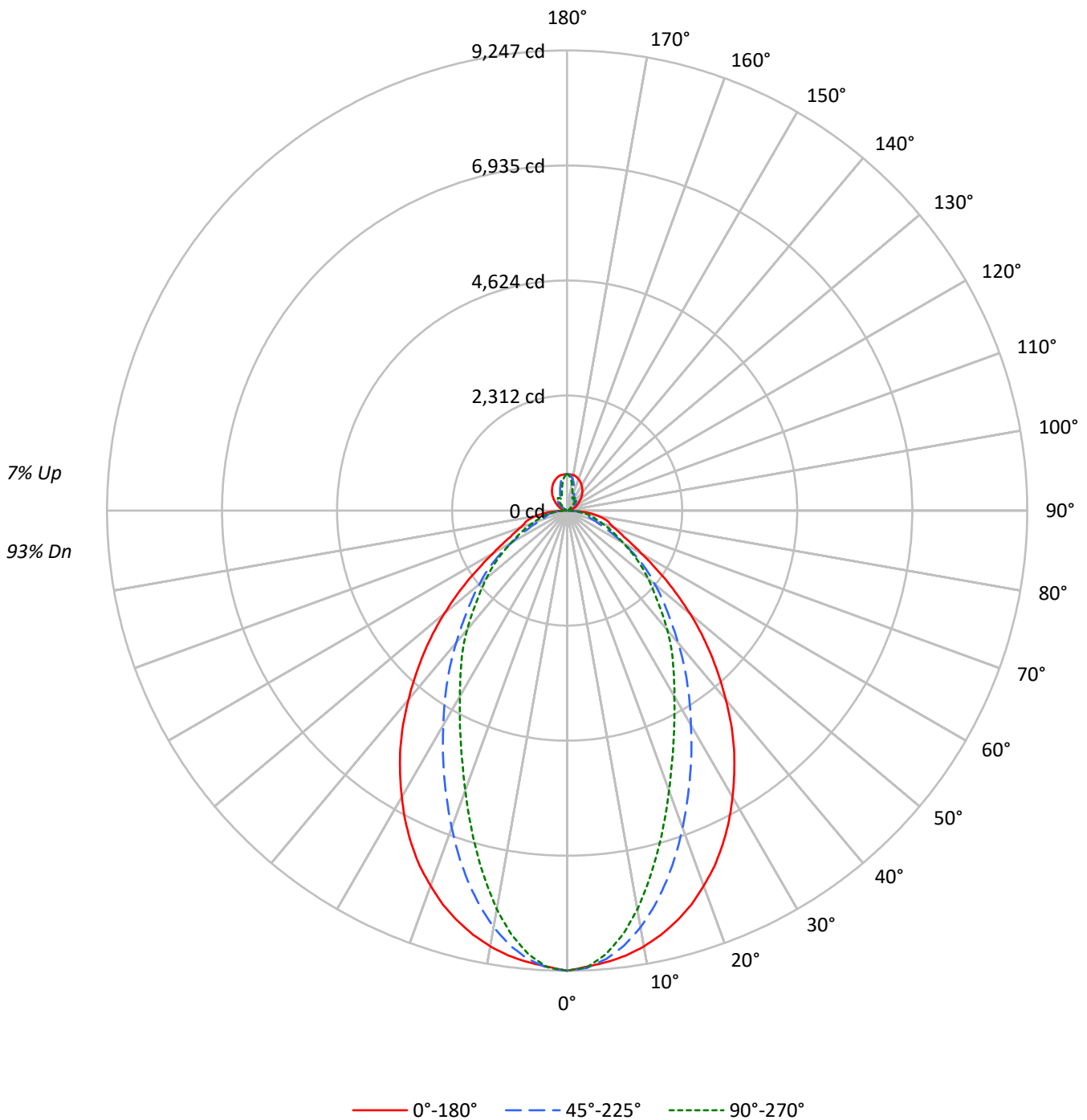
Lumens per Lamp: 4400 (4 lamps)  
Luminaire Lumens: 15631.1 lumens  
Efficiency: 88.8%  
Efficacy: 73.0 lumens/watt  
Spacing Criteria (0/90/45): 1.09 / 0.78 / 0.98  
Luminous Opening: Rectangular (W 1.21' x L: 3.71' x H: 0')  
CIE Type: Direct

Input Watts (W): 214  
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	104	104	104	104	101	101	101	101	95	95	95	90	90	90	85	85	85	83
1	96	93	89	87	93	90	87	85	85	83	81	81	79	77	77	75	74	72
2	89	83	77	73	86	81	76	72	76	73	69	73	70	67	69	67	64	62
3	82	74	68	63	80	72	66	62	69	64	60	66	62	58	63	59	57	54
4	76	67	60	55	74	65	59	54	62	57	53	60	55	51	57	53	50	48
5	71	61	54	48	69	59	53	48	57	51	47	55	50	46	52	48	45	43
6	66	55	48	43	64	54	48	43	52	46	42	50	45	41	48	44	40	39
7	62	51	44	39	60	50	43	39	48	42	38	46	41	37	45	40	37	35
8	58	47	40	35	56	46	39	35	44	39	34	43	38	34	41	37	33	32
9	54	43	37	32	53	43	36	32	41	36	32	40	35	31	39	34	31	29
10	51	40	34	30	50	40	34	29	38	33	29	37	32	29	36	32	28	27

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

	0°	45°	90°
0°	22213	22213	22213
5°	21963	21808	21577
10°	21692	20741	19846
15°	21216	19172	17558
20°	20510	17332	15302
25°	19611	15511	13420
30°	18435	13805	11944
35°	17141	12314	10871
40°	15551	10872	9812
45°	13867	9607	8710
50°	12041	8603	7915
55°	10085	7585	7136
60°	8273	6174	6226
65°	7213	4854	5667
70°	7045	4017	5275
75°	7973	4056	5123
80°	9033	4994	5492
85°	10005	5319	5678



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	846.2	5.4	4.8	0°	9247	9247	9247	9247	9247	
10°-20°	2170.2	13.9	12.3	5°	9108	9106	9044	8986	8948	863
20°-30°	2777.0	17.8	15.8	15°	8531	8286	7709	7245	7060	2399
30°-40°	2795.7	17.9	15.9	25°	7399	6834	5852	5260	5063	3396
40°-50°	2367.0	15.1	13.4	35°	5845	5123	4199	3804	3707	3641
50°-60°	1712.1	11.0	9.7	45°	4082	3429	2828	2635	2564	3147
60°-70°	1025.4	6.6	5.8	55°	2408	2092	1811	1687	1704	2166
70°-80°	609.6	3.9	3.5	65°	1269	1156	854	906	997	1294
80°-90°	247.4	1.6	1.4	75°	859	640	437	516	552	886
90°-100°	30.1	0.2	0.2	85°	363	281	193	201	206	352
100°-110°	53.9	0.3	0.3	90°	14	13	16	18	9	30
110°-120°	90.5	0.6	0.5	95°	30	23	35	35	13	31
120°-130°	127.9	0.8	0.7	105°	95	53	44	40	36	106
130°-140°	184.3	1.2	1.0	115°	185	119	74	60	39	186
140°-150°	200.7	1.3	1.1	125°	288	146	133	97	71	260
150°-160°	177.3	1.1	1.0	135°	416	200	264	214	166	318
160°-170°	150.5	1.0	0.9	145°	525	320	239	302	309	331
170°-180°	65.2	0.4	0.4	155°	631	474	324	270	269	291
0°-30°	5793.4	37.1	32.9	165°	702	629	521	448	407	198
0°-40°	8589.2	54.9	48.8	175°	729	720	711	692	672	69
0°-60°	12668.3	81.0	72.0	180°	732	732	732	732	732	
0°-90°	14550.8	93.1	82.7							
90°-120°	174.5	1.1	1.0							
90°-150°	687.3	4.4	3.9							
90°-180°	1080.0	6.9	6.1							
0°-180°	15631.1	100.0	88.8							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	9247	9247	9247	9247	9247
2.5°	9173	9202	9199	9199	9183
5°	9108	9106	9044	8986	8948
7.5°	9020	8969	8810	8659	8588
10°	8893	8790	8503	8245	8136
12.5°	8731	8563	8127	7759	7604
15°	8531	8286	7709	7245	7060
17.5°	8302	7965	7255	6720	6511
20°	8023	7603	6780	6196	5986
22.5°	7735	7221	6306	5705	5495
25°	7399	6834	5852	5260	5063
27.5°	7040	6412	5406	4844	4666
30°	6646	5972	4977	4467	4306
32.5°	6252	5546	4580	4124	3993
35°	5845	5123	4199	3804	3707
37.5°	5415	4707	3833	3501	3425
40°	4959	4265	3467	3191	3129
42.5°	4523	3843	3133	2903	2839
45°	4082	3429	2828	2635	2564
47.5°	3656	3057	2560	2395	2333
50°	3222	2708	2302	2155	2118
52.5°	2800	2394	2063	1927	1915
55°	2408	2092	1811	1687	1704
57.5°	2036	1821	1549	1457	1496
60°	1722	1563	1285	1239	1296
62.5°	1478	1343	1055	1057	1135
65°	1269	1156	854	906	997
67.5°	1125	1000	698	793	875
70°	1003	859	572	683	751
72.5°	908	735	480	587	634
75°	859	640	437	516	552
77.5°	761	558	402	435	477
80°	653	472	361	355	397
82.5°	520	381	281	276	301
85°	363	281	193	201	206
87.5°	171	131	83	98	91
90°	14	13	16	18	9
92.5°	22	23	32	30	13
95°	30	23	35	35	13
97.5°	43	25	37	32	13
100°	62	30	38	38	20
102.5°	79	43	38	40	31
105°	95	53	44	40	36
107.5°	123	63	49	41	28
110°	145	80	61	46	28



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	167	94	67	51	33
115°	185	119	74	60	39
117.5°	211	135	87	71	59
120°	232	140	88	75	49
122.5°	265	144	112	85	66
125°	288	146	133	97	71
127.5°	317	148	170	111	93
130°	352	161	215	137	115
132.5°	379	176	243	163	137
135°	416	200	264	214	166
137.5°	444	220	256	264	209
140°	471	247	252	297	264
142.5°	504	284	248	311	312
145°	525	320	239	302	309
147.5°	558	357	249	295	301
150°	584	393	265	277	283
152.5°	610	431	287	267	267
155°	631	474	324	270	269
157.5°	655	526	371	293	277
160°	668	563	420	333	296
162.5°	689	599	468	392	348
165°	702	629	521	448	407
167.5°	717	662	587	506	469
170°	725	687	639	582	545
172.5°	726	708	681	642	614
175°	729	720	711	692	672
177.5°	732	730	734	729	714
180°	732	732	732	732	732

(END OF REPORT)