

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: 236P270

Luminaire Tested: **HBE-454T5-N-UNV-EBT1-UPL-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-41-14
Report Number: 236P270
Test Lab: METALUX RESEARCH LABS
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: HBE-454T5-N-UNV-EBT1-UPL-U
Description: OPEN HIGH BAY LUMINAIRE WITH SIDE ENCLOSURES AND SPECULAR REFLECTOR, NARROW DISTRIBUTION WITH UPLIGHT
Light Source: -
FOUR 54 WATT T5HO - 4400 LUMENS EA
Ballast/Driver: -

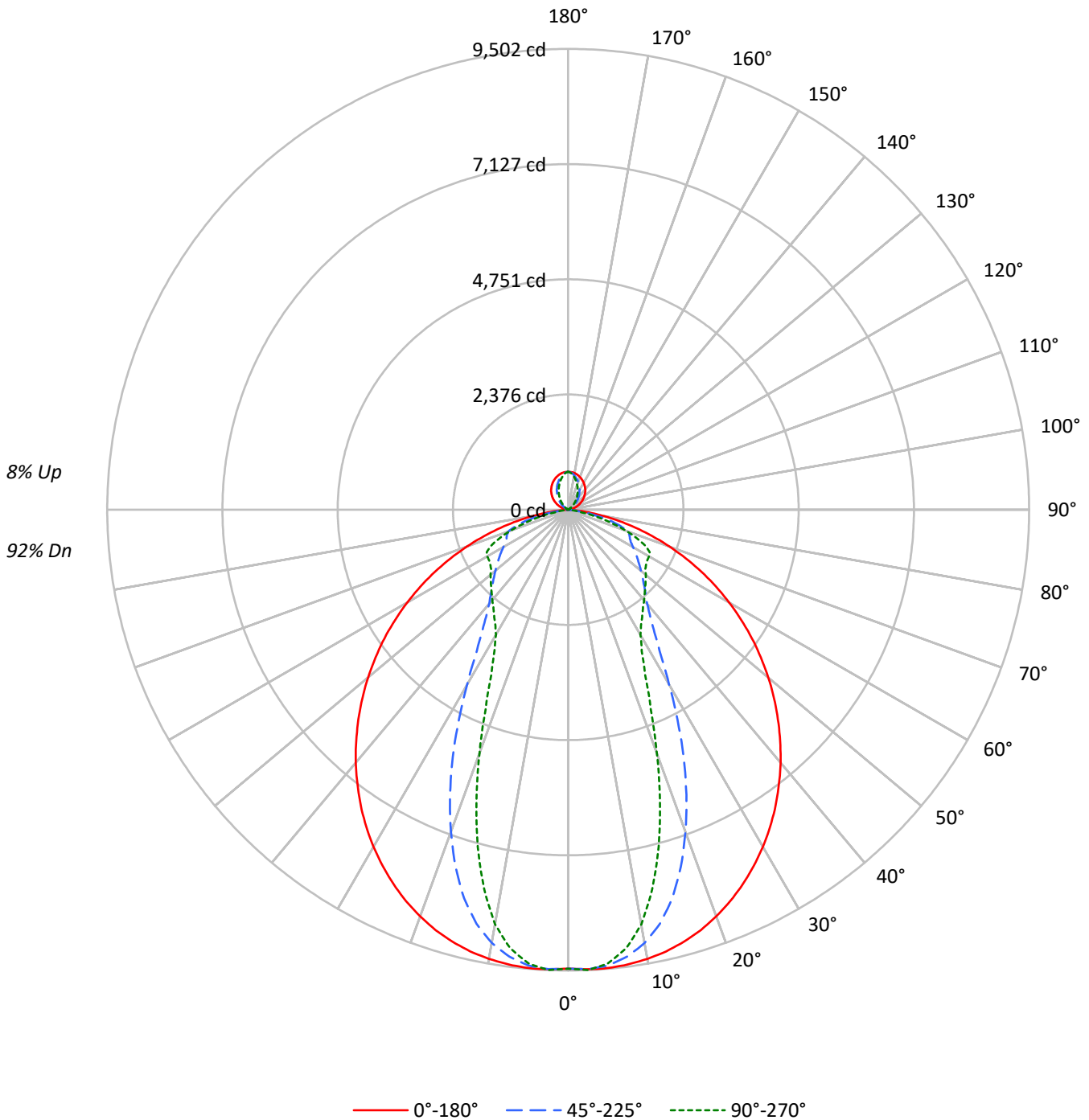
Summary

Lumens per Lamp: 4400 (4 lamps)
Luminaire Lumens: 16787.3 lumens
Efficiency: 95.4%
Efficacy: 75.6 lumens/watt
Spacing Criteria (0/90/45): 1.26 / 0.7 / 0.86
Luminous Opening: Rectangular (W 1.56' x L: 3.75' x H: 0')
CIE Type: Direct

Input Watts (W): 222
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

TEST NUMBER: 236P270
CATALOG NUMBER: HBE-454T5-N-UNV-EBT1-UPL-U

Luminous Intensity Polar Plot





TEST NUMBER: 236P270

CATALOG NUMBER: HBE-454T5-N-UNV-EBT1-UPL-U

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	108	108	108	108	102	102	102	96	96	96	91	91	91	88
1	103	99	95	92	100	96	93	90	91	88	86	86	84	82	81	80	78	76
2	95	88	82	77	92	85	80	75	81	76	72	77	73	70	73	70	67	65
3	87	78	71	65	84	76	69	64	72	67	62	69	64	60	65	62	58	56
4	80	70	62	56	78	68	61	56	65	59	54	62	57	53	59	55	51	49
5	74	63	55	50	72	62	54	49	59	53	48	56	51	47	54	49	46	44
6	69	58	50	44	67	56	49	44	54	48	43	52	46	42	50	45	41	39
7	65	53	45	40	63	52	44	39	50	43	39	48	42	38	46	41	37	35
8	61	49	41	36	59	48	41	36	46	40	35	44	39	34	43	38	34	32
9	57	45	38	33	55	44	37	33	43	36	32	41	36	32	40	35	31	29
10	54	42	35	30	52	41	35	30	40	34	30	39	33	29	37	32	29	27

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	17384	17384	17384
5°	17495	17397	17318
10°	17544	16923	16188
15°	17539	15774	13689
20°	17442	13816	10449
25°	17268	11408	7589
30°	17027	8822	6317
35°	16716	6952	5970
40°	16336	6065	5837
45°	15887	5752	5838
50°	15393	5599	5967
55°	14806	5570	6277
60°	14083	5669	7073
65°	13175	6099	7607
70°	11924	7052	6778
75°	10207	6473	4968
80°	7691	4200	2169
85°	3815	717	232



TEST NUMBER: 236P270

CATALOG NUMBER: HBE-454T5-N-UNV-EBT1-UPL-U

ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	888.3	5.3	5.0	0°	9463	9463	9463	9463	9463	
10°-20°	2292.2	13.7	13.0	5°	9487	9475	9434	9382	9391	903
20°-30°	2721.3	16.2	15.5	15°	9222	8988	8294	7494	7198	2601
30°-40°	2607.8	15.5	14.8	25°	8519	7739	5628	4119	3744	3923
40°-50°	2340.6	13.9	13.3	35°	7454	5750	3100	2697	2662	4659
50°-60°	1975.3	11.8	11.2	45°	6115	3468	2214	2244	2247	4716
60°-70°	1630.6	9.7	9.3	55°	4623	1849	1739	1879	1960	4129
70°-80°	912.8	5.4	5.2	65°	3031	1147	1403	1730	1750	2996
80°-90°	138.9	0.8	0.8	75°	1438	716	912	762	700	1529
90°-100°	22.9	0.1	0.1	85°	181	148	34	15	11	268
100°-110°	39.3	0.2	0.2	90°	2	4	6	7	7	10
110°-120°	77.8	0.5	0.4	95°	22	24	23	18	11	27
120°-130°	143.7	0.9	0.8	105°	113	27	24	25	22	121
130°-140°	219.7	1.3	1.2	115°	244	117	30	28	27	240
140°-150°	262.1	1.6	1.5	125°	372	240	127	61	43	332
150°-160°	253.9	1.5	1.4	135°	491	371	256	185	160	379
160°-170°	188.6	1.1	1.1	145°	595	500	396	332	309	372
170°-180°	71.6	0.4	0.4	155°	681	617	539	486	466	313
0°-30°	5901.8	35.2	33.5	165°	743	712	663	632	619	210
0°-40°	8509.6	50.7	48.3	175°	778	774	763	753	750	74
0°-60°	12825.5	76.4	72.9	180°	783	783	783	783	783	
0°-90°	15507.8	92.4	88.1							
90°-120°	140.0	0.8	0.8							
90°-150°	765.4	4.6	4.3							
90°-180°	1279.0	7.6	7.3							
0°-180°	16787.3	100.0	95.4							



TEST NUMBER: 236P270

CATALOG NUMBER: HBE-454T5-N-UNV-EBT1-UPL-U

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	9463	9463	9463	9463	9463
2.5°	9484	9484	9482	9476	9502
5°	9487	9475	9434	9382	9391
7.5°	9458	9422	9297	9158	9126
10°	9405	9327	9072	8792	8678
12.5°	9328	9181	8742	8217	8011
15°	9222	8988	8294	7494	7198
17.5°	9088	8750	7722	6672	6292
20°	8922	8464	7067	5798	5345
22.5°	8734	8128	6364	4905	4447
25°	8519	7739	5628	4119	3744
27.5°	8283	7293	4873	3523	3286
30°	8027	6810	4159	3136	2978
32.5°	7750	6291	3547	2862	2796
35°	7454	5750	3100	2697	2662
37.5°	7136	5181	2774	2563	2534
40°	6812	4610	2529	2441	2434
42.5°	6468	4031	2358	2345	2334
45°	6115	3468	2214	2244	2247
47.5°	5754	2942	2077	2136	2164
50°	5386	2489	1959	2049	2088
52.5°	5004	2129	1843	1963	2005
55°	4623	1849	1739	1879	1960
57.5°	4233	1621	1641	1832	1935
60°	3833	1441	1543	1803	1925
62.5°	3435	1287	1457	1790	1893
65°	3031	1147	1403	1730	1750
67.5°	2622	1020	1367	1547	1527
70°	2220	907	1313	1309	1262
72.5°	1822	801	1143	1039	980
75°	1438	716	912	762	700
77.5°	1071	657	653	488	429
80°	727	553	397	248	205
82.5°	424	358	173	83	57
85°	181	148	34	15	11
87.5°	36	17	7	9	7
90°	2	4	6	7	7
92.5°	32	33	30	23	12
95°	22	24	23	18	11
97.5°	34	21	22	19	14
100°	57	21	22	20	17
102.5°	84	21	23	22	20
105°	113	27	24	25	22
107.5°	145	44	24	25	24
110°	178	65	24	25	23



TEST NUMBER: 236P270

CATALOG NUMBER: HBE-454T5-N-UNV-EBT1-UPL-U

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	208	89	24	27	25
115°	244	117	30	28	27
117.5°	274	145	44	26	26
120°	307	176	69	28	26
122.5°	340	208	97	41	28
125°	372	240	127	61	43
127.5°	402	274	159	88	67
130°	433	306	190	118	94
132.5°	463	339	224	152	127
135°	491	371	256	185	160
137.5°	521	405	291	222	198
140°	546	435	325	257	233
142.5°	571	469	362	295	270
145°	595	500	396	332	309
147.5°	617	530	431	370	347
150°	640	560	468	408	386
152.5°	660	588	503	446	426
155°	681	617	539	486	466
157.5°	698	641	572	523	505
160°	714	666	603	561	542
162.5°	729	690	635	596	580
165°	743	712	663	632	619
167.5°	755	732	692	665	655
170°	766	750	719	697	688
172.5°	773	764	743	727	720
175°	778	774	763	753	750
177.5°	782	781	776	774	772
180°	783	783	783	783	783

(END OF REPORT)