

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: 134p138

Luminaire Tested: **WN-228T5A-UNV-EBT1-U**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-41-14  
Report Number: 134p138  
Test Lab: METALUX RESEARCH LABS  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: WN-228T5A-UNV-EBT1-U  
Description: WRAPAROUND SERIES, 2 LAMP T5, WITH PRISMATIC WRAP LENS  
Light Source: TWO LINEAR FLUORESCENT LAMPS, F28T5 28 W - 2600 LUMENS EA  
Ballast/Driver: -

**Summary**

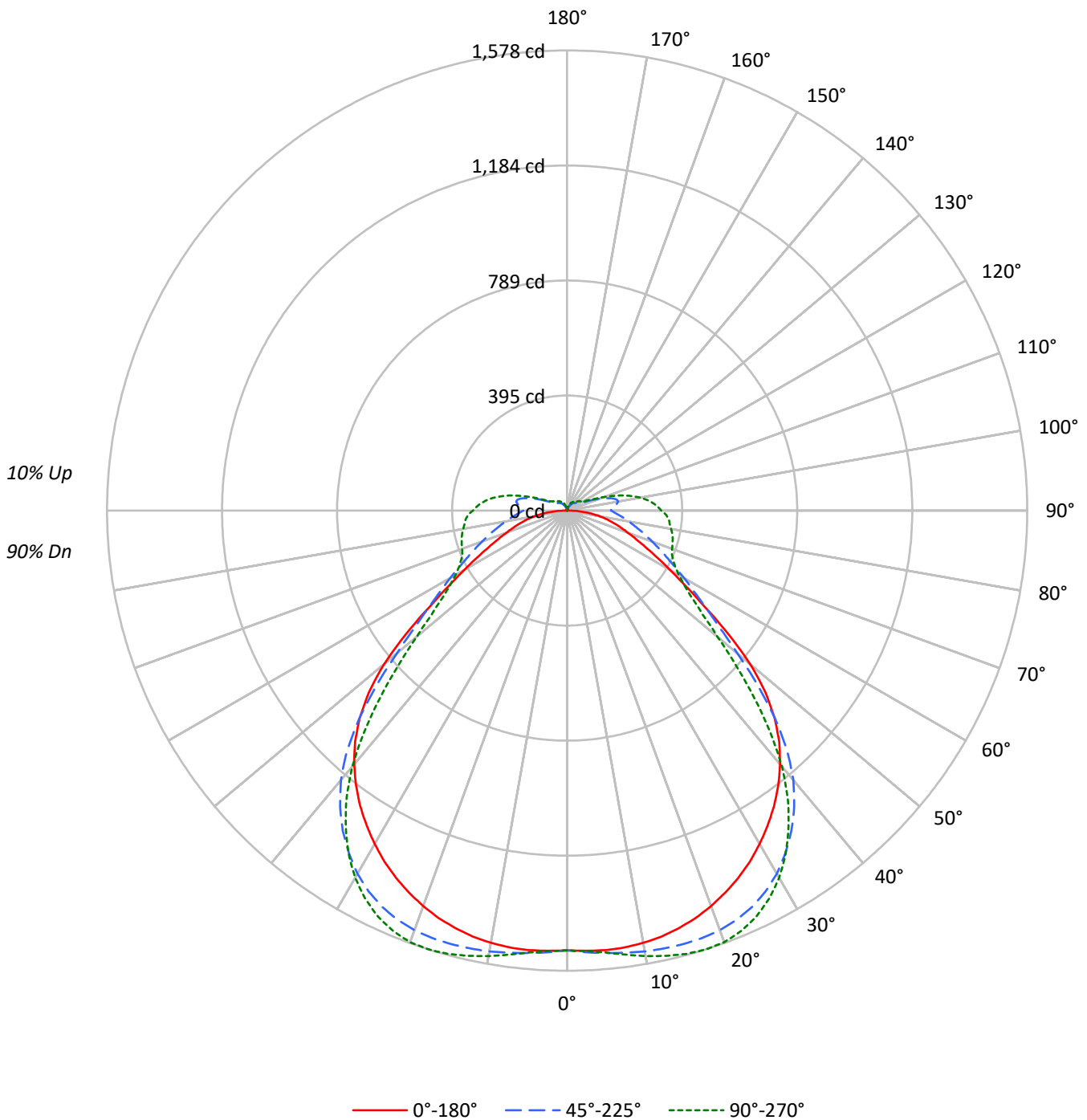
Lumens per Lamp: 2600 (2 lamps)  
Luminaire Lumens: 4656.9 lumens  
Efficiency: 89.6%  
Efficacy: 71.6 lumens/watt  
Spacing Criteria (0/90/45): 1.29 / 1.37 / 1.38  
Luminous Opening: Rectangular (W 0.62' x L: 3.98' x H: 0')  
CIE Type: Direct

Input Watts (W): 65  
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	105	105	105	105	101	101	101	101	95	95	95		89	89	89		83	83	83	81
1	95	90	87	83	92	88	84	81	82	79	77		77	75	73		73	71	69	67
2	87	79	73	68	84	77	71	67	72	68	64		68	64	61		64	61	58	56
3	79	70	63	57	76	68	62	56	64	59	54		61	56	52		57	53	50	48
4	73	63	55	49	70	61	54	48	57	52	47		54	49	45		52	47	44	42
5	67	56	48	43	65	55	47	42	52	46	41		49	44	40		47	42	38	36
6	62	51	43	38	60	50	42	37	47	41	36		45	39	35		43	38	34	32
7	58	46	39	33	56	45	38	33	43	37	32		41	35	31		39	34	30	29
8	54	42	35	30	52	41	34	29	39	33	29		38	32	28		36	31	27	26
9	50	39	32	27	49	38	31	27	36	30	26		35	29	25		33	28	25	23
10	47	36	29	24	46	35	28	24	34	28	24		32	27	23		31	26	23	21

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

	0°	45°	90°
0°	6527	6527	6527
5°	6573	6617	6608
10°	6614	6746	6816
15°	6641	6896	7053
20°	6646	7052	7254
25°	6633	7163	7335
30°	6597	7187	7267
35°	6536	7085	6996
40°	6418	6819	6475
45°	6158	6176	5552
50°	5521	5138	4538
55°	4354	4369	3939
60°	3523	3999	3826
65°	3031	3840	4107
70°	2797	3923	4847
75°	2776	4298	6271
80°	2866	5334	9023
85°	2930	8889	17381



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	145.5	3.1	2.8	0°	1508	1508	1508	1508	1508	
10°-20°	434.0	9.3	8.3	5°	1513	1518	1523	1525	1521	144
20°-30°	682.3	14.7	13.1	15°	1482	1503	1539	1568	1574	418
30°-40°	818.1	17.6	15.7	25°	1389	1436	1500	1533	1536	640
40°-50°	752.4	16.2	14.5	35°	1237	1295	1341	1340	1324	773
50°-60°	520.0	11.2	10.0	45°	1006	1030	1009	940	907	768
60°-70°	361.5	7.8	7.0	55°	577	611	579	544	522	528
70°-80°	276.3	5.9	5.3	65°	296	325	375	392	401	300
80°-90°	209.7	4.5	4.0	75°	166	184	257	330	375	176
90°-100°	171.9	3.7	3.3	85°	59	96	179	288	350	60
100°-110°	134.3	2.9	2.6	90°	4	54	150	279	323	5
110°-120°	65.3	1.4	1.3	95°	0	51	161	274	295	0
120°-130°	34.6	0.7	0.7	105°	2	60	161	194	200	2
130°-140°	24.4	0.5	0.5	115°	3	45	77	86	87	3
140°-150°	15.5	0.3	0.3	125°	4	24	44	55	55	3
150°-160°	7.9	0.2	0.2	135°	4	20	37	44	44	3
160°-170°	2.9	0.1	0.1	145°	5	14	29	35	36	3
170°-180°	0.2	0.0	0.0	155°	5	10	17	25	27	2
0°-30°	1261.9	27.1	24.3	165°	5	7	10	13	15	1
0°-40°	2079.9	44.7	40.0	175°	0	0	0	0	0	0
0°-60°	3352.2	72.0	64.5	180°	0	0	0	0	0	
0°-90°	4199.7	90.2	80.8							
90°-120°	371.6	8.0	7.1							
90°-150°	446.2	9.6	8.6							
90°-180°	457.0	9.8	8.8							
0°-180°	4656.9	100.0	89.6							



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1508	1508	1508	1508	1508
2.5°	1511	1515	1516	1516	1512
5°	1513	1518	1523	1525	1521
7.5°	1511	1518	1529	1538	1536
10°	1505	1516	1535	1550	1551
12.5°	1496	1511	1538	1561	1564
15°	1482	1503	1539	1568	1574
17.5°	1465	1492	1537	1571	1578
20°	1443	1477	1531	1568	1575
22.5°	1418	1458	1519	1554	1560
25°	1389	1436	1500	1533	1536
27.5°	1357	1409	1473	1500	1500
30°	1320	1378	1438	1458	1454
32.5°	1280	1340	1393	1404	1395
35°	1237	1295	1341	1340	1324
37.5°	1189	1242	1279	1262	1243
40°	1136	1181	1207	1171	1146
42.5°	1076	1111	1117	1062	1031
45°	1006	1030	1009	940	907
47.5°	922	933	886	816	783
50°	820	824	763	704	674
52.5°	698	712	658	612	586
55°	577	611	579	544	522
57.5°	481	520	515	491	476
60°	407	443	462	450	442
62.5°	347	379	415	417	418
65°	296	325	375	392	401
67.5°	255	280	341	371	389
70°	221	243	310	354	383
72.5°	193	211	282	341	379
75°	166	184	257	330	375
77.5°	140	161	234	318	369
80°	115	139	214	307	362
82.5°	88	117	195	296	355
85°	59	96	179	288	350
87.5°	31	75	163	283	340
90°	4	54	150	279	323
92.5°	0	50	153	279	311
95°	0	51	161	274	295
97.5°	1	53	171	261	277
100°	1	56	178	243	255
102.5°	1	58	174	221	229
105°	2	60	161	194	200
107.5°	2	61	142	164	168
110°	2	58	119	134	136



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	2	53	96	107	109
115°	3	45	77	86	87
117.5°	3	36	62	70	72
120°	3	30	52	61	63
122.5°	3	26	46	57	58
125°	4	24	44	55	55
127.5°	4	24	42	52	53
130°	4	23	40	48	50
132.5°	4	22	39	46	46
135°	4	20	37	44	44
137.5°	4	19	35	43	44
140°	4	17	33	40	42
142.5°	4	16	31	38	39
145°	5	14	29	35	36
147.5°	5	13	26	32	34
150°	5	12	23	30	31
152.5°	4	10	20	28	29
155°	5	10	17	25	27
157.5°	5	9	15	22	24
160°	5	8	13	18	20
162.5°	5	8	11	15	17
165°	5	7	10	13	15
167.5°	5	7	9	11	12
170°	5	6	8	9	10
172.5°	0	0	0	0	0
175°	0	0	0	0	0
177.5°	0	0	0	0	0
180°	0	0	0	0	0

(END OF REPORT)