

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: 121P113

Luminaire Tested: **WS-A-232A**

Issue Date: 3/3/2020



Test Information

Test Method: LM-41-14
Report Number: 121P113
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: WS-A-232A
Description: WS Series (Wide housing) wraparound with
an acrylic lens
Light Source: Two - FO32T8/35K - 2850 Lumens ea. - 32 Watts ea.
Ballast/Driver: Magnetek B232I120RH Electronic - L.O.B.F. = 86.4

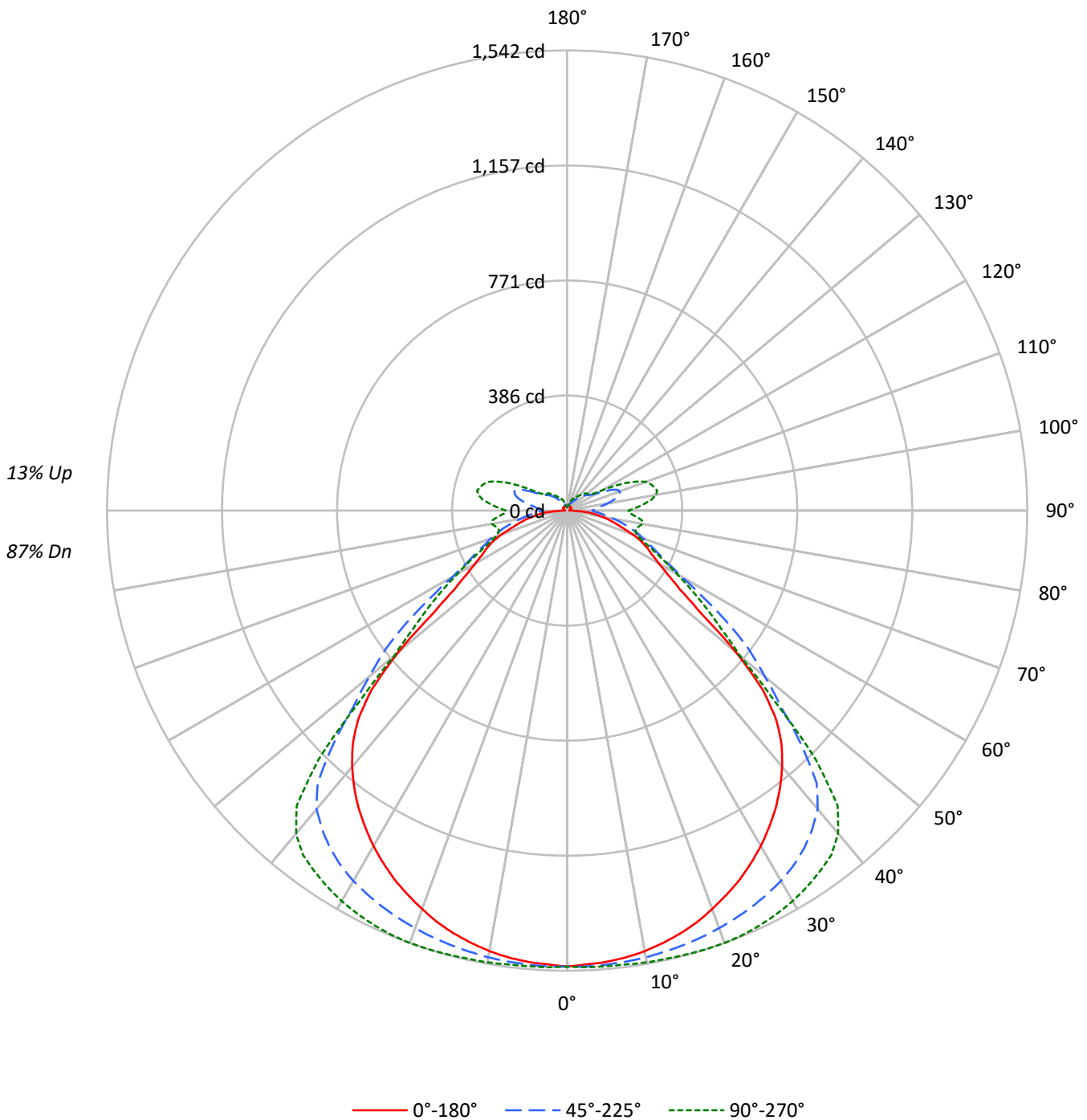
Summary

Lumens per Lamp: 2850 (2 lamps)
Luminaire Lumens: 4780.3 lumens
Efficiency: 83.9%
Efficacy: 81.7 lumens/watt
Spacing Criteria (0/90/45): 1.26 / 1.47 / 1.43
Luminous Opening: Rectangular w/ Sides (W: 1.28' x L: 3.97' x H: 0.17')
CIE Type: Semi-Direct

Input Watts (W): 58.5
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									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0													
RCR																																					
0	97	97	97	97	94	94	94	94	87	87	87	81	81	81	76	76	76	73																			
1	89	85	82	78	86	82	79	76	77	74	72	72	70	68	67	65	64	62																			
2	81	75	69	65	78	72	67	63	68	64	60	63	60	57	59	57	55	52																			
3	75	66	60	55	72	64	58	53	60	55	51	57	52	49	53	50	47	45																			
4	69	59	52	47	66	57	51	46	54	48	44	51	46	42	48	44	41	39																			
5	63	53	46	41	61	51	45	40	48	43	38	46	41	37	43	39	36	34																			
6	58	48	41	36	56	46	40	35	44	38	34	42	37	33	39	35	32	30																			
7	54	43	36	31	52	42	36	31	40	34	30	38	33	29	36	32	28	26																			
8	50	40	33	28	49	39	32	28	37	31	27	35	30	26	33	29	25	24																			
9	47	36	30	25	45	35	29	25	34	28	24	32	27	24	31	26	23	21																			
10	44	33	27	23	43	33	27	23	31	26	22	30	25	21	28	24	21	19																			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3230	3230	3230
5°	3209	3206	3214
10°	3194	3194	3225
15°	3175	3194	3257
20°	3149	3208	3312
25°	3125	3234	3369
30°	3093	3268	3431
35°	3054	3289	3491
40°	2988	3270	3515
45°	2843	2958	3114
50°	2315	2485	2150
55°	1606	2069	1765
60°	1399	1540	1463
65°	1358	1325	1251
70°	1297	1251	1152
75°	1186	1208	1309
80°	1160	1145	1793
85°	1164	1136	2263



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	145.4	3.0	2.6	0°	1528	1528	1528	1528	1528	
10°-20°	425.8	8.9	7.5	5°	1518	1522	1527	1529	1532	144
20°-30°	672.3	14.1	11.8	15°	1467	1480	1507	1529	1540	414
30°-40°	853.3	17.9	15.0	25°	1366	1397	1465	1515	1532	629
40°-50°	828.9	17.3	14.5	35°	1218	1276	1383	1455	1476	761
50°-60°	539.0	11.3	9.5	45°	991	1057	1110	1152	1177	746
60°-70°	343.5	7.2	6.0	55°	462	634	659	568	568	440
70°-80°	224.9	4.7	3.9	65°	296	353	334	376	320	292
80°-90°	148.4	3.1	2.6	75°	168	179	215	242	238	180
90°-100°	132.5	2.8	2.3	85°	71	99	112	190	232	66
100°-110°	170.5	3.6	3.0	90°	8	33	84	167	205	8
110°-120°	137.5	2.9	2.4	95°	7	35	102	213	259	6
120°-130°	68.5	1.4	1.2	105°	11	51	174	272	302	12
130°-140°	44.2	0.9	0.8	115°	14	82	164	206	219	14
140°-150°	25.4	0.5	0.4	125°	16	51	91	97	96	14
150°-160°	13.5	0.3	0.2	135°	16	36	67	77	80	12
160°-170°	5.3	0.1	0.1	145°	17	26	42	54	57	11
170°-180°	1.2	0.0	0.0	155°	16	20	28	39	42	7
0°-30°	1243.5	26.0	21.8	165°	13	15	18	21	23	4
0°-40°	2096.8	43.9	36.8	175°	12	12	12	12	14	1
0°-60°	3464.8	72.5	60.8	180°	11	11	11	11	11	
0°-90°	4181.6	87.5	73.4							
90°-120°	440.6	9.2	7.7							
90°-150°	578.7	12.1	10.2							
90°-180°	599.0	12.5	10.5							
0°-180°	4780.3	100.0	83.9							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1528	1528	1528	1528	1528
2.5°	1522	1526	1529	1529	1532
5°	1518	1522	1527	1529	1532
7.5°	1510	1516	1524	1530	1534
10°	1499	1507	1520	1529	1537
12.5°	1484	1495	1514	1529	1538
15°	1467	1480	1507	1529	1540
17.5°	1446	1463	1499	1528	1542
20°	1421	1443	1489	1526	1542
22.5°	1394	1421	1478	1522	1539
25°	1366	1397	1465	1515	1532
27.5°	1333	1371	1450	1503	1523
30°	1298	1343	1433	1491	1511
32.5°	1259	1312	1411	1474	1495
35°	1218	1276	1383	1455	1476
37.5°	1172	1236	1348	1430	1454
40°	1121	1190	1306	1389	1413
42.5°	1064	1135	1237	1309	1341
45°	991	1057	1110	1152	1177
47.5°	889	942	970	949	937
50°	739	821	865	768	755
52.5°	565	724	771	639	651
55°	462	634	659	568	568
57.5°	401	551	539	521	492
60°	355	479	441	472	424
62.5°	321	414	378	423	368
65°	296	353	334	376	320
67.5°	269	295	299	334	282
70°	234	248	270	300	253
72.5°	196	211	244	268	240
75°	168	179	215	242	238
77.5°	144	151	185	221	246
80°	118	137	159	206	256
82.5°	96	124	135	199	253
85°	71	99	112	190	232
87.5°	35	61	94	176	210
90°	8	33	84	167	205
92.5°	7	34	92	186	232
95°	7	35	102	213	259
97.5°	8	36	116	241	286
100°	9	38	136	260	302
102.5°	10	42	157	270	309
105°	11	51	174	272	302
107.5°	12	64	184	267	294
110°	13	76	188	260	281



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	13	83	182	238	254
115°	14	82	164	206	219
117.5°	15	72	139	169	180
120°	15	62	114	130	136
122.5°	15	55	100	106	107
125°	16	51	91	97	96
127.5°	16	47	85	92	91
130°	16	44	80	88	88
132.5°	16	40	74	82	85
135°	16	36	67	77	80
137.5°	16	33	59	71	73
140°	17	31	52	66	67
142.5°	17	28	46	60	62
145°	17	26	42	54	57
147.5°	17	25	38	50	52
150°	17	23	35	46	48
152.5°	16	22	31	42	44
155°	16	20	28	39	42
157.5°	15	19	25	34	38
160°	15	18	22	30	33
162.5°	14	16	20	25	28
165°	13	15	18	21	23
167.5°	13	14	16	17	18
170°	12	13	14	14	16
172.5°	12	13	13	13	15
175°	12	12	12	12	14
177.5°	12	12	11	11	12
180°	11	11	11	11	11

(END OF REPORT)