

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: 121P110

Luminaire Tested: **WS-232A**

Issue Date: 3/3/2020



Test Information

Test Method: LM-41-14
Report Number: 121P110
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: WS-232A
Description: WS Series Wraparound Luminaire
Light Source: Two-F32T8/35K - 2850 Lumens ea. - 32 Watts ea.
Ballast/Driver: Triad-Utrad B2321120RH Electronic

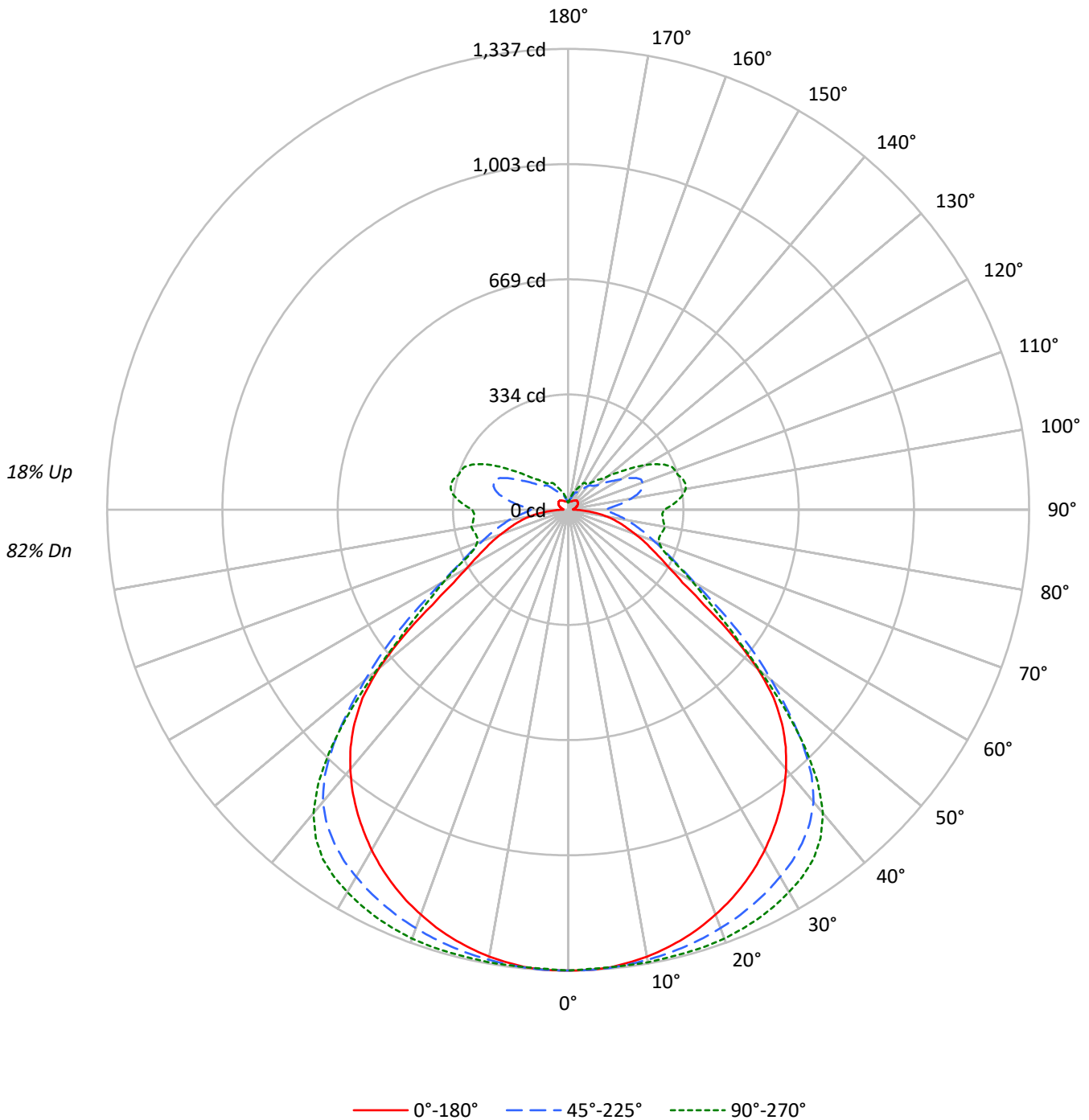
Summary

Lumens per Lamp: 2850 (2 lamps)
Luminaire Lumens: 4588.6 lumens
Efficiency: 80.5%
Efficacy: 76.0 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.42 / 1.42
Luminous Opening: Rectangular w/ Sides (W: 0.83' x L: 4' x H: 0.17')
CIE Type: Semi-Direct

Input Watts (W): 60.4
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	92	92	92	92	88	88	88	88	81	81	81	75	75	75	69	69	69	66
1	84	80	77	74	80	77	74	71	71	68	66	65	63	61	60	58	57	54
2	77	70	65	60	73	67	63	59	62	58	55	57	54	52	53	51	48	46
3	70	62	56	51	67	60	54	49	55	50	47	51	47	44	47	44	41	39
4	64	55	48	43	61	53	47	42	49	44	40	46	41	38	42	39	36	34
5	59	49	42	37	57	48	41	37	44	39	35	41	37	33	38	35	31	29
6	55	45	38	33	52	43	37	32	40	35	31	37	33	29	35	31	28	26
7	51	40	34	29	49	39	33	28	36	31	27	34	29	26	32	28	25	23
8	47	37	30	26	45	36	29	25	33	28	24	31	27	23	29	25	22	21
9	44	34	27	23	42	33	27	23	31	25	22	29	24	21	27	23	20	19
10	41	31	25	21	40	30	24	20	28	23	20	27	22	19	25	21	18	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4318	4318	4318
5°	4309	4264	4247
10°	4287	4221	4222
15°	4262	4194	4220
20°	4232	4180	4241
25°	4198	4175	4263
30°	4151	4175	4282
35°	4091	4162	4284
40°	4004	4081	4147
45°	3845	3752	3688
50°	3432	3210	2941
55°	2556	2643	2343
60°	2042	2108	1986
65°	1859	1840	1711
70°	1754	1696	1712
75°	1717	1638	1979
80°	1700	1643	2483
85°	1556	1668	3100



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	127.1	2.8	2.2	0°	1337	1337	1337	1337	1337	
10°-20°	370.7	8.1	6.5	5°	1334	1334	1335	1336	1333	127
20°-30°	581.4	12.7	10.2	15°	1289	1296	1312	1326	1330	364
30°-40°	728.5	15.9	12.8	25°	1201	1221	1265	1299	1308	553
40°-50°	716.9	15.6	12.6	35°	1068	1107	1182	1227	1239	668
50°-60°	502.6	11.0	8.8	45°	877	922	962	962	969	669
60°-70°	321.4	7.0	5.6	55°	481	584	584	542	535	446
70°-80°	228.6	5.0	4.0	65°	265	306	329	343	320	265
80°-90°	170.5	3.7	3.0	75°	159	173	215	252	277	168
90°-100°	172.2	3.8	3.0	85°	62	98	133	225	275	61
100°-110°	207.6	4.5	3.6	90°	14	49	108	228	278	11
110°-120°	190.3	4.1	3.3	95°	14	50	142	273	320	13
120°-130°	118.2	2.6	2.1	105°	22	76	219	315	344	23
130°-140°	69.6	1.5	1.2	115°	30	109	218	287	309	29
140°-150°	44.4	1.0	0.8	125°	34	81	140	180	199	31
150°-160°	25.0	0.5	0.4	135°	36	62	98	116	123	28
160°-170°	10.9	0.2	0.2	145°	33	54	72	92	91	21
170°-180°	2.5	0.1	0.0	155°	28	42	56	66	71	13
0°-30°	1079.2	23.5	18.9	165°	25	32	38	44	47	7
0°-40°	1807.7	39.4	31.7	175°	23	25	25	24	24	2
0°-60°	3027.2	66.0	53.1	180°	22	22	22	22	22	
0°-90°	3747.8	81.7	65.8							
90°-120°	570.1	12.4	10.0							
90°-150°	802.4	17.5	14.1							
90°-180°	841.0	18.3	14.8							
0°-180°	4588.6	100.0	80.5							



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1337	1337	1337	1337	1337
2.5°	1337	1337	1337	1336	1334
5°	1334	1334	1335	1336	1333
7.5°	1326	1328	1331	1334	1333
10°	1317	1319	1326	1332	1333
12.5°	1304	1309	1320	1329	1331
15°	1289	1296	1312	1326	1330
17.5°	1271	1281	1303	1322	1328
20°	1250	1263	1292	1317	1324
22.5°	1227	1243	1280	1309	1317
25°	1201	1221	1265	1299	1308
27.5°	1172	1197	1249	1286	1296
30°	1140	1170	1230	1270	1281
32.5°	1105	1140	1209	1251	1263
35°	1068	1107	1182	1227	1239
37.5°	1028	1071	1150	1193	1202
40°	983	1030	1107	1143	1149
42.5°	934	982	1045	1069	1071
45°	877	922	962	962	969
47.5°	809	845	865	832	849
50°	717	756	769	706	725
52.5°	602	666	677	608	619
55°	481	584	584	542	535
57.5°	393	507	496	490	468
60°	339	432	423	437	414
62.5°	299	365	370	386	364
65°	265	306	329	343	320
67.5°	236	259	294	312	294
70°	207	224	264	288	281
72.5°	180	196	239	268	276
75°	159	173	215	252	277
77.5°	137	151	193	240	282
80°	113	134	174	232	285
82.5°	87	118	152	225	279
85°	62	98	133	225	275
87.5°	36	71	117	222	273
90°	14	49	108	228	278
92.5°	14	49	121	252	301
95°	14	50	142	273	320
97.5°	16	52	163	292	337
100°	18	57	185	308	346
102.5°	20	64	205	315	348
105°	22	76	219	315	344
107.5°	24	90	227	309	334
110°	26	103	229	307	331



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	28	109	229	303	325
115°	30	109	218	287	309
117.5°	31	104	198	265	286
120°	32	97	176	238	260
122.5°	34	90	156	208	230
125°	34	81	140	180	199
127.5°	35	73	125	158	174
130°	36	69	110	140	151
132.5°	36	65	103	127	133
135°	36	62	98	116	123
137.5°	36	60	96	104	112
140°	35	59	91	98	101
142.5°	34	57	82	93	95
145°	33	54	72	92	91
147.5°	31	51	65	90	92
150°	30	48	60	81	90
152.5°	29	45	57	72	80
155°	28	42	56	66	71
157.5°	27	39	53	61	64
160°	26	36	48	57	59
162.5°	25	34	43	52	55
165°	25	32	38	44	47
167.5°	24	30	34	37	40
170°	24	28	30	32	33
172.5°	24	26	27	28	28
175°	23	25	25	24	24
177.5°	23	24	23	21	21
180°	22	22	22	22	22

(END OF REPORT)