

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: 165P110

Luminaire Tested: **P410-232-SPEC-UPL**

Issue Date: 3/3/2020



Test Information

Test Method: LM-41-14
Report Number: 165P110
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: P410-232-SPEC-UPL
Description: P410 Series Surface Linear Luminaire with a 3/4" specular parabolic louver and eight lensed upright apertures running the length of each side.
Light Source: Two - FO32T8/35K - 2800 Lumens ea. - 32 Watts ea.
Ballast/Driver: Magnetek B2321120RH Electronic - L.O.B.F. = 88.22

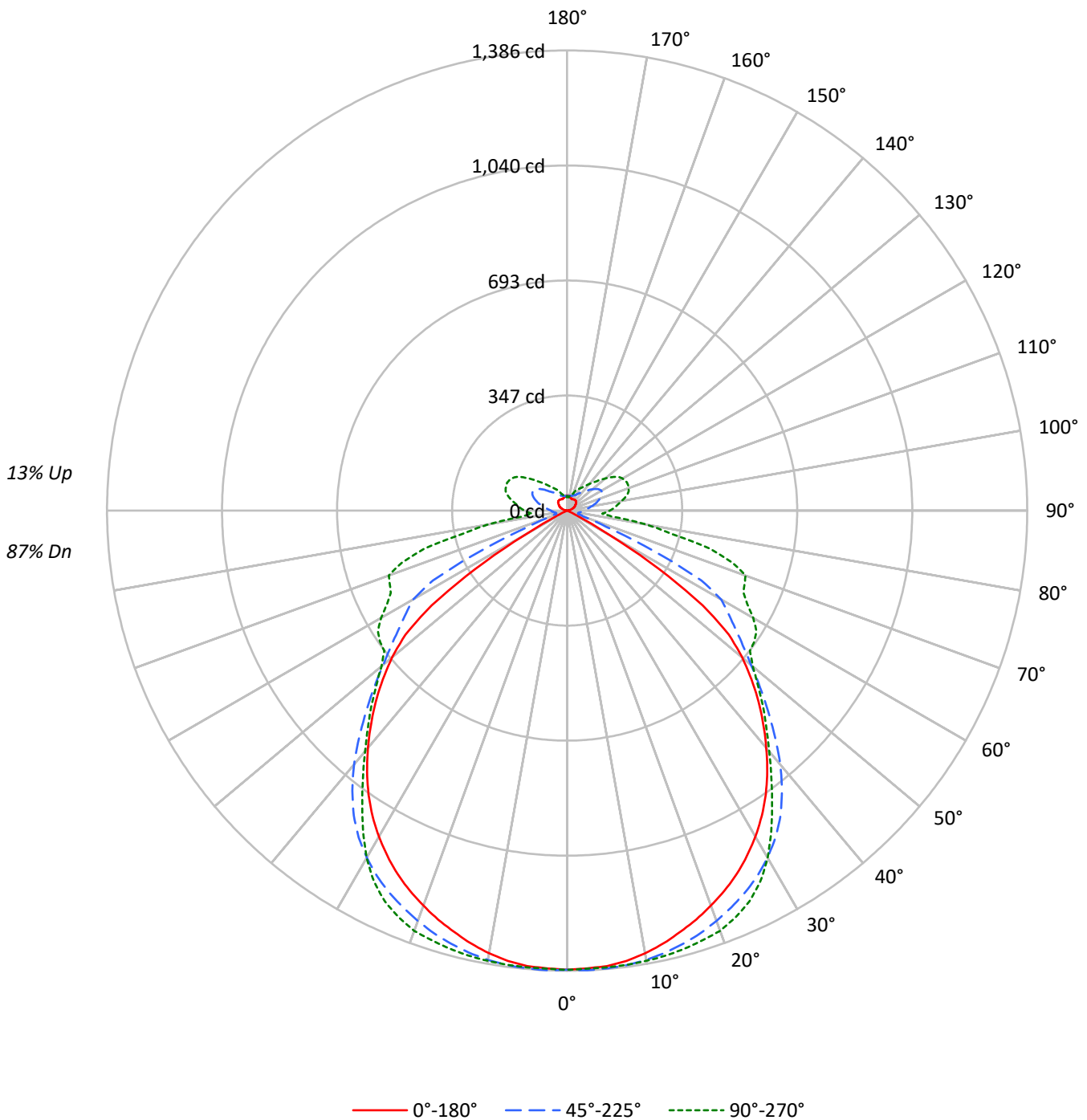
Summary

Lumens per Lamp: 2800 (2 lamps)
Luminaire Lumens: 3981.2 lumens
Efficiency: 71.1%
Efficacy: 68.3 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.27 / 1.34
Luminous Opening: Rectangular (W 0.7' x L: 4' x H: 0')
CIE Type: Semi-Direct

Input Watts (W): 58.3
Input Voltage (V): NR
Input Current (A_{in}): 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: 165P110
CATALOG NUMBER: P410-232-SPEC-UPL

Luminous Intensity Polar Plot





TEST NUMBER: 165P110

CATALOG NUMBER: P410-232-SPEC-UPL

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	82	82	82	82	79	79	79	79	74	74	74		69	69	69		64	64	64	62
1	76	73	70	68	73	70	68	66	66	64	62		61	60	58		57	56	55	53
2	70	64	60	56	67	62	58	55	58	55	52		54	52	50		51	49	47	45
3	64	57	52	47	61	55	50	46	52	48	44		49	45	42		46	43	41	39
4	59	51	45	41	56	49	44	40	46	42	38		44	40	37		41	38	35	34
5	54	45	40	35	52	44	39	35	42	37	33		39	35	32		37	34	31	29
6	50	41	35	31	48	40	34	30	38	33	29		36	32	28		34	30	27	26
7	46	37	31	27	45	36	31	27	34	30	26		33	28	25		31	27	24	23
8	43	34	28	24	42	33	28	24	31	27	23		30	26	23		28	25	22	21
9	40	31	26	22	39	30	25	22	29	24	21		28	23	20		26	23	20	19
10	38	29	23	20	36	28	23	20	27	22	19		26	22	19		24	21	18	17

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5293	5293	5293
5°	5290	5317	5306
10°	5262	5340	5352
15°	5206	5353	5413
20°	5156	5356	5486
25°	5101	5359	5486
30°	5012	5334	5339
35°	4873	5238	5027
40°	4661	4991	4731
45°	4417	4633	4514
50°	4097	4305	4347
55°	3323	4117	4591
60°	1141	4103	4953
65°	82	2590	5307
70°	56	604	6401
75°	44	503	6610
80°	44	793	5334
85°	88	1888	4655



TEST NUMBER: 165P110

CATALOG NUMBER: P410-232-SPEC-UPL

ZONAL LUMENS:

CANDELA DISTRIBUTION:

Zone	Lumens	% Fixture	% Lamp		0°	22.5°	45°	67.5°	90°	Flux
0°-10°	131.5	3.3	2.3	0°	1383	1383	1383	1383	1383	
10°-20°	380.1	9.5	6.8	5°	1377	1377	1384	1384	1381	131
20°-30°	580.9	14.6	10.4	15°	1314	1325	1351	1367	1366	371
30°-40°	680.2	17.1	12.1	25°	1208	1230	1269	1299	1299	556
40°-50°	653.0	16.4	11.7	35°	1043	1090	1121	1092	1076	650
50°-60°	535.7	13.5	9.6	45°	816	871	856	833	834	628
60°-70°	301.5	7.6	5.4	55°	498	570	617	654	688	412
70°-80°	134.7	3.4	2.4	65°	9	21	286	556	586	32
80°-90°	57.1	1.4	1.0	75°	3	13	34	234	447	4
90°-100°	76.8	1.9	1.4	85°	2	16	43	81	106	1
100°-110°	100.3	2.5	1.8	90°	1	18	49	104	129	1
110°-120°	109.9	2.8	2.0	95°	3	22	60	124	147	3
120°-130°	94.4	2.4	1.7	105°	12	32	91	159	188	13
130°-140°	63.8	1.6	1.1	115°	23	44	116	177	199	22
140°-150°	39.9	1.0	0.7	125°	31	48	113	159	177	28
150°-160°	24.2	0.6	0.4	135°	38	44	85	116	125	29
160°-170°	13.1	0.3	0.2	145°	40	40	64	83	89	25
170°-180°	4.1	0.1	0.1	155°	38	40	51	63	68	18
0°-30°	1092.5	27.4	19.5	165°	40	44	46	49	49	11
0°-40°	1772.7	44.5	31.7	175°	45	46	44	40	40	4
0°-60°	2961.5	74.4	52.9	180°	44	44	44	44	44	
0°-90°	3454.8	86.8	61.7							
90°-120°	287.0	7.2	5.1							
90°-150°	485.1	12.2	8.7							
90°-180°	526.0	13.2	9.4							
0°-180°	3981.2	100.0	71.1							



TEST NUMBER: 165P110

CATALOG NUMBER: P410-232-SPEC-UPL

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1383	1383	1383	1383	1383
2.5°	1380	1379	1386	1385	1381
5°	1377	1377	1384	1384	1381
7.5°	1368	1370	1381	1383	1380
10°	1354	1359	1374	1379	1377
12.5°	1336	1344	1364	1374	1373
15°	1314	1325	1351	1367	1366
17.5°	1292	1304	1335	1356	1357
20°	1266	1281	1315	1343	1347
22.5°	1239	1256	1293	1325	1326
25°	1208	1230	1269	1299	1299
27.5°	1173	1201	1241	1265	1260
30°	1134	1169	1207	1217	1208
32.5°	1091	1132	1168	1160	1144
35°	1043	1090	1121	1092	1076
37.5°	990	1043	1063	1024	1010
40°	933	990	999	956	947
42.5°	875	933	927	892	888
45°	816	871	856	833	834
47.5°	753	804	788	780	779
50°	688	733	723	729	730
52.5°	614	658	667	688	694
55°	498	570	617	654	688
57.5°	329	436	575	636	676
60°	149	251	536	610	647
62.5°	39	92	456	581	612
65°	9	21	286	556	586
67.5°	6	10	127	529	578
70°	5	11	54	476	572
72.5°	4	12	35	380	522
75°	3	13	34	234	447
77.5°	3	14	34	107	321
80°	2	14	36	66	242
82.5°	2	15	39	70	135
85°	2	16	43	81	106
87.5°	1	17	46	92	117
90°	1	18	49	104	129
92.5°	1	20	54	115	139
95°	3	22	60	124	147
97.5°	5	24	67	133	156
100°	7	26	75	141	167
102.5°	10	29	83	150	178
105°	12	32	91	159	188
107.5°	15	35	98	167	194
110°	17	38	105	172	197



TEST NUMBER: 165P110

CATALOG NUMBER: P410-232-SPEC-UPL

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	20	41	111	175	199
115°	23	44	116	177	199
117.5°	25	47	118	176	197
120°	27	48	119	173	193
122.5°	29	48	117	168	187
125°	31	48	113	159	177
127.5°	33	48	107	148	164
130°	35	47	100	137	150
132.5°	37	45	93	126	137
135°	38	44	85	116	125
137.5°	39	43	78	107	114
140°	39	41	73	98	105
142.5°	40	41	69	90	97
145°	40	40	64	83	89
147.5°	39	40	60	77	82
150°	39	40	56	72	77
152.5°	38	40	53	67	72
155°	38	40	51	63	68
157.5°	37	41	49	60	64
160°	38	42	48	56	55
162.5°	39	43	47	53	52
165°	40	44	46	49	49
167.5°	41	45	45	45	46
170°	42	45	44	43	44
172.5°	44	45	44	41	42
175°	45	46	44	40	40
177.5°	46	46	44	39	40
180°	44	44	44	44	44

(END OF REPORT)