

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: NEO-RAY

Report Number: 17286

Luminaire Tested: **S7/248R/3T5/ETG4/UBE-SI-S46**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: 17286
Test Lab: LUMINAIRE TESTING LABORATORY, INC.
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S7/248R/3T5/ETG4/UBE-SI-S46
Description: FORMED WHITE ENAMEL STEEL AND ALUMINUM HOUSING, FORMED
WHITE ENAMEL STEEL REFLECTOR, TRANSLUCENT WHITE PLASTIC
ENCLOSURE.
Light Source: THREE 28 WATT T5 LINEAR FLUORESCENT LAMPS RATED AT 2610 LUMENS
EACH.
PHILIPS F28T5/835
Ballast/Driver: TWO UNIVERSAL LIGHTING TECHNOLOGIES "ACCU-START" B228PUNV-C

Summary

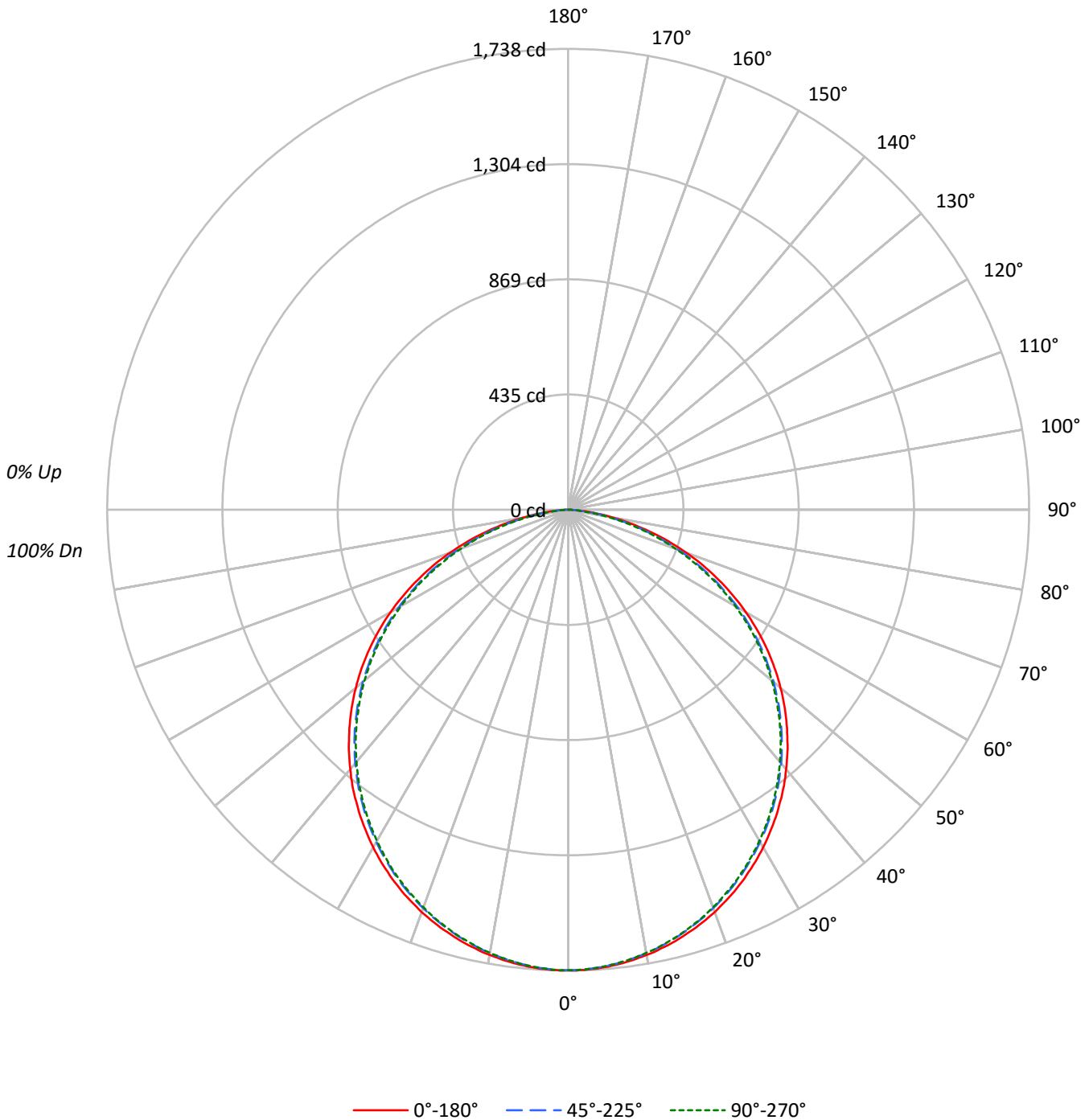
Lumens per Lamp: 2610 (3 lamps)
Luminaire Lumens: 4822.8 lumens
Efficiency: 61.6%
Efficacy: 51.1 lumens/watt
Spacing Criteria (0/90/45): 1.26 / 1.24 / 1.36
Luminous Opening: Rectangular (W 1.92' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 94.3
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	73	73	73	73	72	72	72	72	68	68	68		66	66	66		63	63	63	62
1	67	64	62	59	65	63	61	58	60	58	57		58	56	55		56	54	53	52
2	61	56	52	48	59	55	51	48	53	49	47		51	48	46		49	47	45	43
3	56	49	44	40	54	48	44	40	46	42	39		45	41	38		43	40	38	36
4	51	44	38	34	50	43	38	34	41	37	33		40	36	33		38	35	32	31
5	47	39	33	29	46	38	33	29	37	32	29		36	32	29		35	31	28	27
6	43	35	30	26	42	34	29	25	33	29	25		32	28	25		31	28	25	24
7	40	32	26	23	39	31	26	23	30	26	22		29	25	22		29	25	22	21
8	37	29	24	20	36	29	24	20	28	23	20		27	23	20		26	23	20	19
9	35	27	22	18	34	26	21	18	26	21	18		25	21	18		24	21	18	17
10	33	25	20	16	32	24	20	16	24	19	16		23	19	16		22	19	16	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2490	2490	2490
5°	2489	2484	2484
10°	2482	2472	2470
15°	2474	2458	2455
20°	2464	2439	2435
25°	2450	2418	2414
30°	2433	2395	2387
35°	2415	2368	2359
40°	2392	2337	2324
45°	2366	2299	2285
50°	2330	2255	2235
55°	2284	2194	2172
60°	2219	2116	2090
65°	2123	2008	1971
70°	1982	1853	1806
75°	1761	1623	1562
80°	1428	1288	1205
85°	938	789	641



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ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	164.0	3.4	2.1
10°-20°	467.8	9.7	6.0
20°-30°	706.3	14.6	9.0
30°-40°	849.1	17.6	10.8
40°-50°	878.5	18.2	11.2
50°-60°	789.1	16.4	10.1
60°-70°	589.9	12.2	7.5
70°-80°	314.1	6.5	4.0
80°-90°	64.0	1.3	0.8
90°-100°	0.0	0.0	0.0
100°-110°	0.0	0.0	0.0
110°-120°	0.0	0.0	0.0
120°-130°	0.0	0.0	0.0
130°-140°	0.0	0.0	0.0
140°-150°	0.0	0.0	0.0
150°-160°	0.0	0.0	0.0
160°-170°	0.0	0.0	0.0
170°-180°	0.0	0.0	0.0
0°-30°	1338.1	27.7	17.1
0°-40°	2187.2	45.4	27.9
0°-60°	3854.8	79.9	49.2
0°-90°	4822.8	100.0	61.6
90°-120°	0.0	0.0	0.0
90°-150°	0.0	0.0	0.0
90°-180°	0.0	0.0	0.0
0°-180°	4822.8	100.0	61.6

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1737	1737	1737	1737	1737	
5°	1730	1728	1726	1726	1726	164
15°	1667	1662	1656	1654	1654	470
25°	1549	1539	1529	1525	1526	714
35°	1380	1367	1353	1347	1348	863
45°	1167	1150	1134	1126	1127	900
55°	914	896	878	869	869	816
65°	626	610	592	582	581	619
75°	318	307	293	284	282	337
85°	57	54	48	42	39	70
90°	0	0	0	0	0	2
95°	0	0	0	0	0	0
105°	0	0	0	0	0	0
115°	0	0	0	0	0	0
125°	0	0	0	0	0	0
135°	0	0	0	0	0	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1737	1737	1737	1737	1737
0.5°	1738	1738	1737	1737	1737
1°	1738	1737	1736	1737	1737
1.5°	1737	1737	1736	1737	1736
2°	1737	1736	1735	1736	1736
2.5°	1736	1735	1734	1735	1734
3°	1735	1734	1733	1733	1733
3.5°	1734	1733	1732	1732	1732
4°	1733	1732	1730	1730	1730
4.5°	1731	1730	1728	1728	1728
5°	1730	1728	1726	1726	1726
5.5°	1728	1726	1724	1724	1724
6°	1726	1724	1722	1722	1722
6.5°	1724	1722	1719	1720	1719
7°	1722	1720	1717	1717	1716
7.5°	1719	1717	1714	1714	1714
8°	1717	1715	1711	1711	1710
8.5°	1714	1712	1708	1708	1708
9°	1711	1709	1705	1705	1704
9.5°	1708	1706	1702	1701	1701
10°	1705	1702	1698	1697	1697
10.5°	1702	1699	1695	1694	1694
11°	1699	1695	1691	1690	1690
11.5°	1695	1692	1687	1686	1686
12°	1691	1688	1683	1682	1682
12.5°	1688	1684	1679	1677	1677
13°	1684	1680	1674	1673	1673
13.5°	1680	1675	1670	1668	1668
14°	1676	1671	1665	1664	1664
14.5°	1671	1666	1661	1659	1659
15°	1667	1662	1656	1654	1654
15.5°	1662	1657	1651	1649	1649
16°	1657	1652	1645	1643	1643
16.5°	1653	1647	1640	1638	1638
17°	1648	1642	1635	1632	1632
17.5°	1642	1636	1629	1627	1627
18°	1637	1631	1623	1621	1621
18.5°	1632	1625	1618	1615	1615
19°	1626	1619	1612	1609	1609
19.5°	1620	1613	1605	1602	1602
20°	1615	1607	1599	1596	1596
20.5°	1609	1601	1593	1589	1590
21°	1602	1595	1586	1583	1583
21.5°	1596	1588	1580	1576	1576
22°	1590	1581	1573	1569	1569



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
22.5°	1583	1575	1566	1562	1562
23°	1577	1568	1559	1555	1555
23.5°	1570	1561	1552	1548	1548
24°	1563	1554	1544	1540	1540
24.5°	1556	1547	1537	1533	1533
25°	1549	1539	1529	1525	1526
25.5°	1542	1532	1522	1517	1517
26°	1534	1524	1514	1510	1510
26.5°	1526	1516	1506	1501	1502
27°	1519	1509	1498	1493	1494
27.5°	1511	1501	1490	1485	1485
28°	1503	1492	1481	1477	1477
28.5°	1495	1484	1473	1468	1468
29°	1487	1476	1465	1460	1460
29.5°	1479	1467	1456	1451	1451
30°	1470	1459	1447	1442	1442
30.5°	1462	1450	1438	1433	1433
31°	1453	1441	1429	1424	1424
31.5°	1444	1432	1420	1414	1415
32°	1435	1423	1411	1405	1406
32.5°	1426	1414	1401	1395	1396
33°	1417	1405	1392	1386	1387
33.5°	1408	1396	1382	1377	1377
34°	1399	1386	1373	1367	1367
34.5°	1390	1376	1363	1357	1357
35°	1380	1367	1353	1347	1348
35.5°	1370	1357	1343	1337	1337
36°	1360	1347	1333	1326	1327
36.5°	1351	1337	1323	1316	1317
37°	1341	1327	1313	1306	1307
37.5°	1331	1317	1302	1295	1296
38°	1321	1306	1292	1285	1286
38.5°	1310	1295	1281	1274	1275
39°	1300	1285	1270	1263	1264
39.5°	1289	1274	1259	1252	1253
40°	1278	1263	1249	1241	1242
40.5°	1268	1253	1238	1230	1231
41°	1257	1242	1227	1219	1220
41.5°	1246	1231	1215	1208	1208
42°	1235	1219	1204	1196	1197
42.5°	1224	1208	1193	1185	1186
43°	1213	1196	1181	1174	1174
43.5°	1201	1185	1169	1162	1162
44°	1190	1174	1158	1150	1151
44.5°	1178	1162	1146	1138	1139



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
45°	1167	1150	1134	1126	1127
45.5°	1155	1139	1122	1114	1115
46°	1143	1127	1110	1102	1102
46.5°	1131	1114	1098	1090	1090
47°	1119	1102	1086	1078	1078
47.5°	1107	1090	1073	1065	1066
48°	1095	1078	1061	1052	1053
48.5°	1083	1065	1048	1040	1040
49°	1070	1053	1036	1027	1028
49.5°	1058	1040	1023	1014	1015
50°	1045	1028	1011	1002	1002
50.5°	1033	1015	998	989	989
51°	1020	1002	985	976	976
51.5°	1007	989	972	963	963
52°	994	976	958	950	950
52.5°	981	963	945	936	937
53°	968	949	932	923	923
53.5°	954	936	919	910	910
54°	941	923	905	896	896
54.5°	928	909	892	883	883
55°	914	896	878	869	869
55.5°	900	882	865	855	855
56°	887	868	851	842	842
56.5°	873	855	837	827	828
57°	859	841	823	814	813
57.5°	845	827	809	800	800
58°	830	813	795	785	786
58.5°	816	799	781	772	771
59°	803	785	767	758	757
59.5°	789	770	753	743	743
60°	774	756	738	729	729
60.5°	760	742	724	714	714
61°	745	727	710	700	700
61.5°	730	713	695	685	685
62°	715	698	681	671	671
62.5°	701	684	666	656	655
63°	686	669	651	642	641
63.5°	671	654	637	627	627
64°	656	639	622	612	612
64.5°	641	624	607	597	596
65°	626	610	592	582	581
65.5°	611	594	577	567	566
66°	596	579	563	552	551
66.5°	581	565	548	537	536
67°	565	550	533	522	521



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
67.5°	551	534	517	508	506
68°	535	519	503	493	492
68.5°	520	504	488	477	476
69°	504	489	472	463	461
69.5°	489	474	457	447	446
70°	473	458	442	432	431
70.5°	457	443	427	417	416
71°	442	428	412	402	401
71.5°	427	413	397	387	385
72°	411	398	382	373	371
72.5°	395	382	367	358	356
73°	380	367	352	343	341
73.5°	364	352	337	328	326
74°	349	337	322	313	311
74.5°	334	322	308	298	296
75°	318	307	293	284	282
75.5°	303	293	279	270	267
76°	288	278	264	256	253
76.5°	273	263	250	241	239
77°	259	249	236	228	225
77.5°	243	235	222	214	211
78°	229	221	208	200	197
78.5°	215	206	195	187	184
79°	201	193	181	173	172
79.5°	187	179	168	161	159
80°	173	166	156	148	146
80.5°	159	153	143	136	134
81°	146	140	131	124	122
81.5°	134	128	119	113	110
82°	121	116	107	101	98
82.5°	109	105	97	90	87
83°	98	94	86	79	76
83.5°	87	83	76	69	65
84°	76	73	66	59	56
84.5°	66	63	57	50	47
85°	57	54	48	42	39
85.5°	48	45	40	35	33
86°	40	37	32	29	28
86.5°	32	30	26	25	24
87°	24	23	21	21	20
87.5°	17	17	17	17	16
88°	11	12	13	12	12
88.5°	7	8	9	8	8
89°	4	4	4	4	4
89.5°	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
90°	0	0	0	0	0
90.5°	0	0	0	0	0
91°	0	0	0	0	0
91.5°	0	0	0	0	0
92°	0	0	0	0	0
92.5°	0	0	0	0	0
93°	0	0	0	0	0
93.5°	0	0	0	0	0
94°	0	0	0	0	0
94.5°	0	0	0	0	0
95°	0	0	0	0	0
95.5°	0	0	0	0	0
96°	0	0	0	0	0
96.5°	0	0	0	0	0
97°	0	0	0	0	0
97.5°	0	0	0	0	0
98°	0	0	0	0	0
98.5°	0	0	0	0	0
99°	0	0	0	0	0
99.5°	0	0	0	0	0
100°	0	0	0	0	0
100.5°	0	0	0	0	0
101°	0	0	0	0	0
101.5°	0	0	0	0	0
102°	0	0	0	0	0
102.5°	0	0	0	0	0
103°	0	0	0	0	0
103.5°	0	0	0	0	0
104°	0	0	0	0	0
104.5°	0	0	0	0	0
105°	0	0	0	0	0
105.5°	0	0	0	0	0
106°	0	0	0	0	0
106.5°	0	0	0	0	0
107°	0	0	0	0	0
107.5°	0	0	0	0	0
108°	0	0	0	0	0
108.5°	0	0	0	0	0
109°	0	0	0	0	0
109.5°	0	0	0	0	0
110°	0	0	0	0	0
110.5°	0	0	0	0	0
111°	0	0	0	0	0
111.5°	0	0	0	0	0
112°	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0	0	0	0	0
113°	0	0	0	0	0
113.5°	0	0	0	0	0
114°	0	0	0	0	0
114.5°	0	0	0	0	0
115°	0	0	0	0	0
115.5°	0	0	0	0	0
116°	0	0	0	0	0
116.5°	0	0	0	0	0
117°	0	0	0	0	0
117.5°	0	0	0	0	0
118°	0	0	0	0	0
118.5°	0	0	0	0	0
119°	0	0	0	0	0
119.5°	0	0	0	0	0
120°	0	0	0	0	0
120.5°	0	0	0	0	0
121°	0	0	0	0	0
121.5°	0	0	0	0	0
122°	0	0	0	0	0
122.5°	0	0	0	0	0
123°	0	0	0	0	0
123.5°	0	0	0	0	0
124°	0	0	0	0	0
124.5°	0	0	0	0	0
125°	0	0	0	0	0
125.5°	0	0	0	0	0
126°	0	0	0	0	0
126.5°	0	0	0	0	0
127°	0	0	0	0	0
127.5°	0	0	0	0	0
128°	0	0	0	0	0
128.5°	0	0	0	0	0
129°	0	0	0	0	0
129.5°	0	0	0	0	0
130°	0	0	0	0	0
130.5°	0	0	0	0	0
131°	0	0	0	0	0
131.5°	0	0	0	0	0
132°	0	0	0	0	0
132.5°	0	0	0	0	0
133°	0	0	0	0	0
133.5°	0	0	0	0	0
134°	0	0	0	0	0
134.5°	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
135°	0	0	0	0	0
135.5°	0	0	0	0	0
136°	0	0	0	0	0
136.5°	0	0	0	0	0
137°	0	0	0	0	0
137.5°	0	0	0	0	0
138°	0	0	0	0	0
138.5°	0	0	0	0	0
139°	0	0	0	0	0
139.5°	0	0	0	0	0
140°	0	0	0	0	0
140.5°	0	0	0	0	0
141°	0	0	0	0	0
141.5°	0	0	0	0	0
142°	0	0	0	0	0
142.5°	0	0	0	0	0
143°	0	0	0	0	0
143.5°	0	0	0	0	0
144°	0	0	0	0	0
144.5°	0	0	0	0	0
145°	0	0	0	0	0
145.5°	0	0	0	0	0
146°	0	0	0	0	0
146.5°	0	0	0	0	0
147°	0	0	0	0	0
147.5°	0	0	0	0	0
148°	0	0	0	0	0
148.5°	0	0	0	0	0
149°	0	0	0	0	0
149.5°	0	0	0	0	0
150°	0	0	0	0	0
150.5°	0	0	0	0	0
151°	0	0	0	0	0
151.5°	0	0	0	0	0
152°	0	0	0	0	0
152.5°	0	0	0	0	0
153°	0	0	0	0	0
153.5°	0	0	0	0	0
154°	0	0	0	0	0
154.5°	0	0	0	0	0
155°	0	0	0	0	0
155.5°	0	0	0	0	0
156°	0	0	0	0	0
156.5°	0	0	0	0	0
157°	0	0	0	0	0



TEST NUMBER: 17286

CATALOG NUMBER: S7/248R/3T5/ETG4/UBE-SI-S46

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
157.5°	0	0	0	0	0
158°	0	0	0	0	0
158.5°	0	0	0	0	0
159°	0	0	0	0	0
159.5°	0	0	0	0	0
160°	0	0	0	0	0
160.5°	0	0	0	0	0
161°	0	0	0	0	0
161.5°	0	0	0	0	0
162°	0	0	0	0	0
162.5°	0	0	0	0	0
163°	0	0	0	0	0
163.5°	0	0	0	0	0
164°	0	0	0	0	0
164.5°	0	0	0	0	0
165°	0	0	0	0	0
165.5°	0	0	0	0	0
166°	0	0	0	0	0
166.5°	0	0	0	0	0
167°	0	0	0	0	0
167.5°	0	0	0	0	0
168°	0	0	0	0	0
168.5°	0	0	0	0	0
169°	0	0	0	0	0
169.5°	0	0	0	0	0
170°	0	0	0	0	0
170.5°	0	0	0	0	0
171°	0	0	0	0	0
171.5°	0	0	0	0	0
172°	0	0	0	0	0
172.5°	0	0	0	0	0
173°	0	0	0	0	0
173.5°	0	0	0	0	0
174°	0	0	0	0	0
174.5°	0	0	0	0	0
175°	0	0	0	0	0
175.5°	0	0	0	0	0
176°	0	0	0	0	0
176.5°	0	0	0	0	0
177°	0	0	0	0	0
177.5°	0	0	0	0	0
178°	0	0	0	0	0
178.5°	0	0	0	0	0
179°	0	0	0	0	0
179.5°	0	0	0	0	0



TEST NUMBER: 17286

CATALOG NUMBER: S7/248R/3T5/ETG4/UBE-SI-S46

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
180°	0	0	0	0	0

(END OF REPORT)