

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: P253111

Luminaire Tested: **14RTC-40-UNV-L840-CD1-U**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P253111  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1803-679-1)  
Test Lab: INNOVATION CENTER(G2)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 14RTC-40-UNV-L840-CD1-U  
Description: 1X4 RTC  
Light Source: -  
Ballast/Driver: -

**Summary**

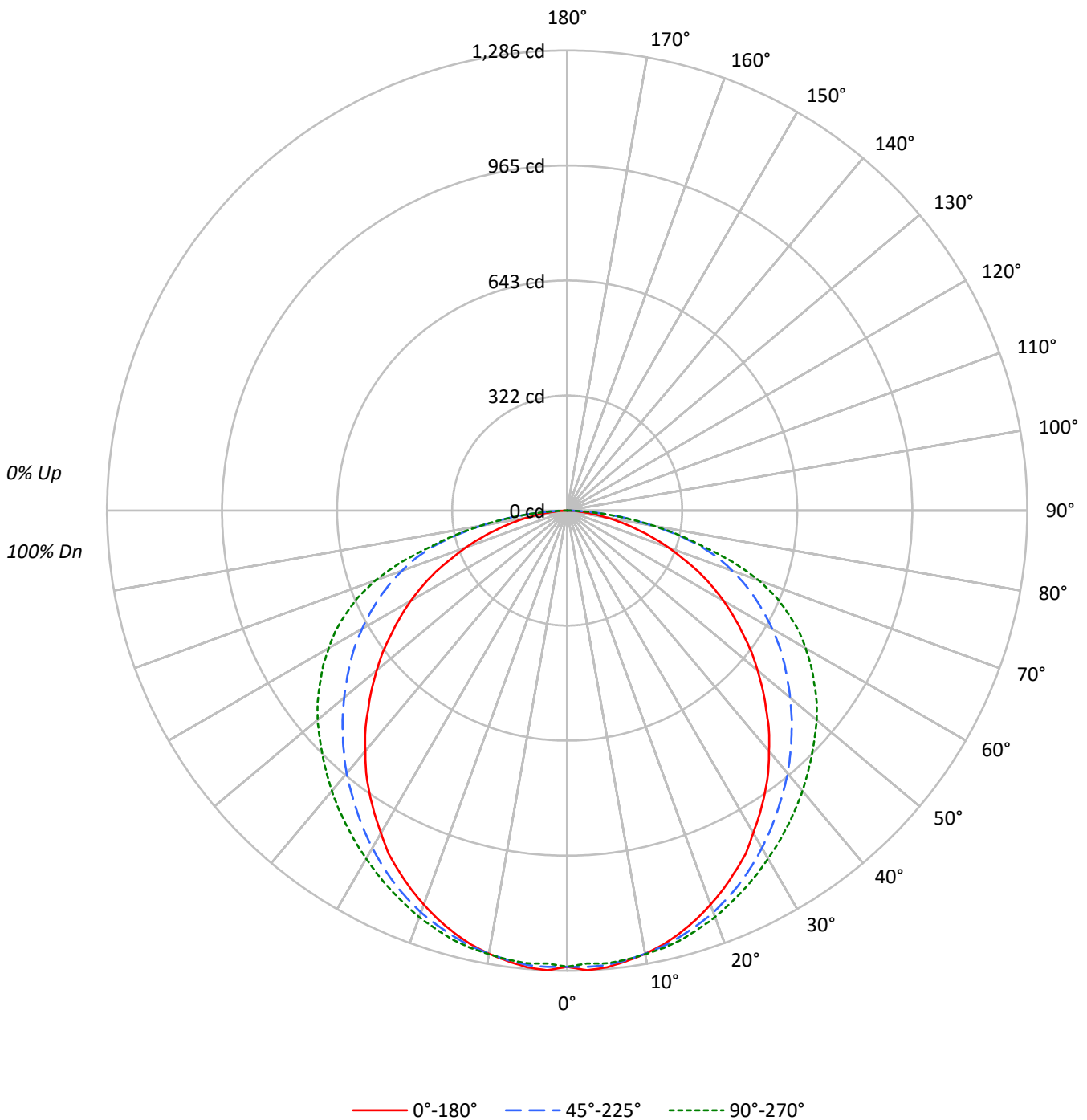
Lumens per Lamp: N/A  
Luminaire Lumens: 3987.0 lumens  
Efficiency: N/A  
Efficacy: 134.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.41  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 29.6  
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



TEST NUMBER: P253111  
CATALOG NUMBER: 14RTC-40-UNV-L840-CD1-U

### Luminous Intensity Polar Plot





TEST NUMBER: P253111

CATALOG NUMBER: 14RTC-40-UNV-L840-CD1-U

**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   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1   | 108 | 103 | 98  | 94  | 105 | 100 | 96  | 92  | 96  | 93  | 89  | 92  | 89  | 87  | 88  | 86  | 84  | 82  |
| 2   | 97  | 89  | 81  | 75  | 95  | 87  | 80  | 74  | 83  | 77  | 73  | 80  | 75  | 71  | 77  | 73  | 69  | 67  |
| 3   | 88  | 77  | 69  | 62  | 86  | 76  | 68  | 61  | 73  | 66  | 60  | 70  | 64  | 59  | 67  | 62  | 58  | 56  |
| 4   | 81  | 68  | 59  | 52  | 78  | 67  | 58  | 51  | 64  | 57  | 51  | 62  | 55  | 50  | 60  | 54  | 49  | 47  |
| 5   | 74  | 61  | 51  | 44  | 72  | 59  | 51  | 44  | 57  | 49  | 44  | 55  | 48  | 43  | 53  | 47  | 43  | 40  |
| 6   | 68  | 54  | 45  | 38  | 66  | 53  | 45  | 38  | 52  | 44  | 38  | 50  | 43  | 38  | 48  | 42  | 37  | 35  |
| 7   | 63  | 49  | 40  | 34  | 61  | 48  | 40  | 34  | 47  | 39  | 33  | 45  | 38  | 33  | 44  | 38  | 33  | 31  |
| 8   | 59  | 45  | 36  | 30  | 57  | 44  | 36  | 30  | 43  | 35  | 30  | 42  | 35  | 30  | 40  | 34  | 29  | 27  |
| 9   | 55  | 41  | 33  | 27  | 53  | 40  | 32  | 27  | 39  | 32  | 27  | 38  | 31  | 27  | 37  | 31  | 26  | 25  |
| 10  | 51  | 38  | 30  | 24  | 50  | 37  | 30  | 24  | 36  | 29  | 24  | 35  | 29  | 24  | 34  | 28  | 24  | 22  |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 3431 | 3431 | 3431 |
| 5°  | 3461 | 3444 | 3431 |
| 10° | 3437 | 3437 | 3441 |
| 15° | 3404 | 3430 | 3456 |
| 20° | 3355 | 3422 | 3463 |
| 25° | 3302 | 3405 | 3470 |
| 30° | 3232 | 3383 | 3490 |
| 35° | 3166 | 3366 | 3530 |
| 40° | 3083 | 3368 | 3594 |
| 45° | 2995 | 3376 | 3679 |
| 50° | 2908 | 3405 | 3811 |
| 55° | 2811 | 3471 | 3956 |
| 60° | 2720 | 3561 | 4142 |
| 65° | 2580 | 3696 | 4343 |
| 70° | 2364 | 3865 | 4480 |
| 75° | 2098 | 4034 | 4180 |
| 80° | 1722 | 3758 | 3831 |
| 85° | 1207 | 3044 | 2899 |



TEST NUMBER: P253111

CATALOG NUMBER: 14RTC-40-UNV-L840-CD1-U

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 120.8  | 3.0       |
| 10°-20°   | 346.4  | 8.7       |
| 20°-30°   | 525.0  | 13.2      |
| 30°-40°   | 637.6  | 16.0      |
| 40°-50°   | 680.1  | 17.1      |
| 50°-60°   | 653.5  | 16.4      |
| 60°-70°   | 555.9  | 13.9      |
| 70°-80°   | 364.1  | 9.1       |
| 80°-90°   | 103.7  | 2.6       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 992.2  | 24.9      |
| 0°-40°    | 1629.8 | 40.9      |
| 0°-60°    | 2963.3 | 74.3      |
| 0°-90°    | 3987.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3987.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1275 | 1275  | 1275 | 1275  | 1275 |      |
| 5°  | 1281 | 1269  | 1275 | 1270  | 1270 | 121  |
| 15° | 1222 | 1214  | 1231 | 1236  | 1240 | 344  |
| 25° | 1112 | 1114  | 1147 | 1159  | 1169 | 512  |
| 35° | 964  | 975   | 1025 | 1056  | 1075 | 602  |
| 45° | 787  | 815   | 887  | 940   | 967  | 608  |
| 55° | 599  | 646   | 740  | 812   | 843  | 537  |
| 65° | 405  | 472   | 580  | 656   | 682  | 399  |
| 75° | 202  | 291   | 388  | 404   | 402  | 215  |
| 85° | 39   | 97    | 99   | 94    | 94   | 50   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



TEST NUMBER: P253111

CATALOG NUMBER: 14RTC-40-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 10°    | 15°    | 20°    | 22.5°  | 25°    | 30°    | 35°    | 40°    | 45°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1274.9 | 1274.9 | 1274.9 | 1274.9 | 1274.9 | 1274.9 | 1274.9 | 1274.9 | 1274.9 | 1274.9 | 1274.9 |
| 2.5°  | 1285.9 | 1284.3 | 1279.6 | 1274.9 | 1273.4 | 1271.8 | 1271.8 | 1270.2 | 1270.2 | 1271.8 | 1276.5 |
| 5°    | 1281.2 | 1279.6 | 1274.9 | 1271.8 | 1268.7 | 1268.7 | 1268.7 | 1267.1 | 1267.1 | 1268.7 | 1274.9 |
| 7.5°  | 1270.2 | 1270.2 | 1265.5 | 1262.4 | 1259.3 | 1259.3 | 1259.3 | 1257.7 | 1257.7 | 1260.8 | 1267.1 |
| 10°   | 1257.7 | 1257.7 | 1253.0 | 1249.9 | 1248.3 | 1248.3 | 1248.3 | 1246.8 | 1248.3 | 1249.9 | 1257.7 |
| 12.5° | 1242.1 | 1242.1 | 1237.4 | 1234.3 | 1234.3 | 1234.3 | 1232.7 | 1232.7 | 1234.3 | 1237.4 | 1246.8 |
| 15°   | 1221.7 | 1220.2 | 1218.6 | 1215.5 | 1213.9 | 1213.9 | 1215.5 | 1215.5 | 1217.0 | 1223.3 | 1231.1 |
| 17.5° | 1198.3 | 1198.3 | 1196.7 | 1193.6 | 1193.6 | 1193.6 | 1193.6 | 1195.1 | 1198.3 | 1204.5 | 1213.9 |
| 20°   | 1171.7 | 1173.2 | 1171.7 | 1168.6 | 1170.1 | 1170.1 | 1171.7 | 1173.2 | 1176.4 | 1184.2 | 1195.1 |
| 22.5° | 1143.5 | 1145.1 | 1142.0 | 1140.4 | 1142.0 | 1143.5 | 1143.5 | 1146.7 | 1151.3 | 1160.7 | 1171.7 |
| 25°   | 1112.2 | 1113.8 | 1112.2 | 1110.7 | 1112.2 | 1113.8 | 1115.4 | 1116.9 | 1124.7 | 1134.1 | 1146.7 |
| 27.5° | 1080.9 | 1079.4 | 1077.8 | 1077.8 | 1080.9 | 1082.5 | 1084.1 | 1088.8 | 1095.0 | 1107.5 | 1118.5 |
| 30°   | 1040.3 | 1041.8 | 1041.8 | 1041.8 | 1045.0 | 1048.1 | 1051.2 | 1054.4 | 1063.7 | 1076.3 | 1088.8 |
| 32.5° | 1002.7 | 1002.7 | 1004.3 | 1005.9 | 1010.6 | 1012.1 | 1015.2 | 1021.5 | 1032.5 | 1045.0 | 1057.5 |
| 35°   | 963.6  | 963.6  | 965.2  | 966.8  | 971.4  | 974.6  | 977.7  | 987.1  | 998.0  | 1012.1 | 1024.6 |
| 37.5° | 923.0  | 924.5  | 924.5  | 929.2  | 933.9  | 937.0  | 940.2  | 951.1  | 963.6  | 979.3  | 991.8  |
| 40°   | 877.6  | 879.2  | 882.3  | 887.0  | 893.2  | 897.9  | 902.6  | 915.1  | 927.6  | 944.9  | 958.9  |
| 42.5° | 835.3  | 835.3  | 840.0  | 844.7  | 852.6  | 855.7  | 861.9  | 877.6  | 891.7  | 907.3  | 923.0  |
| 45°   | 786.9  | 791.5  | 794.7  | 802.5  | 810.3  | 815.0  | 822.8  | 838.5  | 854.1  | 871.3  | 887.0  |
| 47.5° | 741.5  | 746.2  | 750.9  | 757.1  | 768.1  | 774.3  | 780.6  | 799.4  | 815.0  | 835.3  | 851.0  |
| 50°   | 694.6  | 699.3  | 705.5  | 713.3  | 724.3  | 732.1  | 739.9  | 760.3  | 775.9  | 796.2  | 813.4  |
| 52.5° | 649.2  | 650.8  | 658.6  | 668.0  | 680.5  | 689.9  | 697.7  | 719.6  | 738.4  | 758.7  | 775.9  |
| 55°   | 599.1  | 603.8  | 611.7  | 622.6  | 636.7  | 646.1  | 655.5  | 677.4  | 696.1  | 718.0  | 739.9  |
| 57.5° | 552.2  | 555.3  | 564.7  | 575.7  | 591.3  | 602.3  | 613.2  | 636.7  | 657.0  | 680.5  | 702.4  |
| 60°   | 505.3  | 506.8  | 517.8  | 530.3  | 547.5  | 561.6  | 571.0  | 596.0  | 616.3  | 639.8  | 661.7  |
| 62.5° | 455.2  | 458.3  | 469.3  | 484.9  | 505.3  | 517.8  | 527.2  | 552.2  | 575.7  | 599.1  | 621.0  |
| 65°   | 405.2  | 408.3  | 420.8  | 439.6  | 459.9  | 472.4  | 484.9  | 511.5  | 533.4  | 556.9  | 580.4  |
| 67.5° | 350.4  | 355.1  | 369.2  | 389.5  | 414.5  | 427.1  | 439.6  | 466.2  | 489.6  | 513.1  | 536.6  |
| 70°   | 300.4  | 306.6  | 320.7  | 342.6  | 367.6  | 380.1  | 394.2  | 422.4  | 447.4  | 469.3  | 491.2  |
| 72.5° | 250.3  | 256.5  | 273.8  | 297.2  | 322.3  | 336.3  | 348.8  | 373.9  | 400.5  | 422.4  | 444.3  |
| 75°   | 201.8  | 208.1  | 226.8  | 251.9  | 278.4  | 291.0  | 305.0  | 330.1  | 352.0  | 370.7  | 388.0  |
| 77.5° | 156.4  | 162.7  | 183.0  | 208.1  | 234.6  | 248.7  | 259.7  | 283.1  | 303.5  | 311.3  | 316.0  |
| 80°   | 111.1  | 117.3  | 139.2  | 165.8  | 190.8  | 204.9  | 215.9  | 230.0  | 237.8  | 239.3  | 242.5  |
| 82.5° | 72.0   | 79.8   | 101.7  | 126.7  | 148.6  | 156.4  | 158.0  | 164.3  | 170.5  | 168.9  | 170.5  |
| 85°   | 39.1   | 46.9   | 65.7   | 84.5   | 92.3   | 97.0   | 97.0   | 98.6   | 101.7  | 98.6   | 98.6   |
| 87.5° | 15.6   | 20.3   | 29.7   | 34.4   | 36.0   | 37.5   | 37.5   | 36.0   | 36.0   | 32.9   | 32.9   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |



TEST NUMBER: P253111

CATALOG NUMBER: 14RTC-40-UNV-L840-CD1-U

**CANDELA DISTRIBUTION (continued):**

|       | 50°    | 55°    | 60°    | 65°    | 67.5°  | 70°    | 75°    | 80°    | 85°    | 90°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 1274.9 | 1274.9 | 1274.9 | 1274.9 | 1274.9 | 1274.9 | 1274.9 | 1274.9 | 1274.9 | 1274.9 |
| 2.5°  | 1281.2 | 1278.1 | 1276.5 | 1274.9 | 1273.4 | 1271.8 | 1270.2 | 1268.7 | 1267.1 | 1267.1 |
| 5°    | 1278.1 | 1274.9 | 1273.4 | 1271.8 | 1270.2 | 1268.7 | 1268.7 | 1270.2 | 1270.2 | 1270.2 |
| 7.5°  | 1271.8 | 1267.1 | 1267.1 | 1265.5 | 1265.5 | 1264.0 | 1264.0 | 1265.5 | 1265.5 | 1265.5 |
| 10°   | 1262.4 | 1259.3 | 1259.3 | 1257.7 | 1257.7 | 1256.2 | 1256.2 | 1257.7 | 1257.7 | 1259.3 |
| 12.5° | 1251.5 | 1248.3 | 1248.3 | 1248.3 | 1248.3 | 1246.8 | 1248.3 | 1249.9 | 1249.9 | 1251.5 |
| 15°   | 1235.8 | 1234.3 | 1235.8 | 1235.8 | 1235.8 | 1235.8 | 1235.8 | 1238.9 | 1238.9 | 1240.5 |
| 17.5° | 1220.2 | 1218.6 | 1220.2 | 1221.7 | 1221.7 | 1221.7 | 1221.7 | 1223.3 | 1224.9 | 1224.9 |
| 20°   | 1198.3 | 1198.3 | 1199.8 | 1201.4 | 1203.0 | 1201.4 | 1203.0 | 1206.1 | 1207.7 | 1209.2 |
| 22.5° | 1174.8 | 1174.8 | 1177.9 | 1179.5 | 1179.5 | 1181.1 | 1182.6 | 1185.8 | 1188.9 | 1188.9 |
| 25°   | 1149.8 | 1151.3 | 1156.0 | 1157.6 | 1159.2 | 1159.2 | 1162.3 | 1165.4 | 1168.6 | 1168.6 |
| 27.5° | 1123.2 | 1127.9 | 1131.0 | 1134.1 | 1135.7 | 1137.3 | 1138.8 | 1143.5 | 1146.7 | 1146.7 |
| 30°   | 1095.0 | 1098.2 | 1104.4 | 1109.1 | 1109.1 | 1110.7 | 1113.8 | 1120.1 | 1123.2 | 1123.2 |
| 32.5° | 1063.7 | 1070.0 | 1076.3 | 1080.9 | 1082.5 | 1085.6 | 1090.3 | 1096.6 | 1098.2 | 1099.7 |
| 35°   | 1032.5 | 1038.7 | 1046.5 | 1052.8 | 1055.9 | 1059.0 | 1063.7 | 1070.0 | 1073.1 | 1074.7 |
| 37.5° | 1001.2 | 1009.0 | 1018.4 | 1024.6 | 1027.8 | 1032.5 | 1037.1 | 1045.0 | 1048.1 | 1049.7 |
| 40°   | 968.3  | 977.7  | 987.1  | 994.9  | 999.6  | 1002.7 | 1009.0 | 1018.4 | 1021.5 | 1023.1 |
| 42.5° | 933.9  | 946.4  | 957.4  | 966.8  | 969.9  | 974.6  | 982.4  | 990.2  | 993.3  | 994.9  |
| 45°   | 899.5  | 913.6  | 924.5  | 935.5  | 940.2  | 944.9  | 954.2  | 962.1  | 966.8  | 966.8  |
| 47.5° | 865.1  | 880.7  | 893.2  | 904.2  | 910.4  | 915.1  | 924.5  | 933.9  | 937.0  | 938.6  |
| 50°   | 830.7  | 846.3  | 861.9  | 872.9  | 879.2  | 885.4  | 894.8  | 904.2  | 907.3  | 910.4  |
| 52.5° | 794.7  | 811.9  | 827.5  | 840.0  | 846.3  | 852.6  | 863.5  | 872.9  | 877.6  | 879.2  |
| 55°   | 758.7  | 775.9  | 791.5  | 805.6  | 811.9  | 819.7  | 830.7  | 840.0  | 843.2  | 843.2  |
| 57.5° | 721.2  | 739.9  | 755.6  | 769.6  | 777.5  | 783.7  | 794.7  | 804.1  | 807.2  | 808.8  |
| 60°   | 683.6  | 702.4  | 718.0  | 732.1  | 738.4  | 746.2  | 755.6  | 765.0  | 769.6  | 769.6  |
| 62.5° | 642.9  | 661.7  | 677.4  | 693.0  | 697.7  | 705.5  | 716.5  | 722.7  | 727.4  | 730.5  |
| 65°   | 600.7  | 619.5  | 635.1  | 649.2  | 655.5  | 661.7  | 672.7  | 680.5  | 682.0  | 682.0  |
| 67.5° | 556.9  | 572.5  | 588.2  | 602.3  | 608.5  | 614.8  | 624.2  | 630.4  | 632.0  | 632.0  |
| 70°   | 510.0  | 525.6  | 539.7  | 552.2  | 556.9  | 563.2  | 567.8  | 571.0  | 572.5  | 569.4  |
| 72.5° | 461.5  | 472.4  | 483.4  | 486.5  | 486.5  | 486.5  | 488.1  | 488.1  | 488.1  | 492.8  |
| 75°   | 394.2  | 398.9  | 403.6  | 403.6  | 403.6  | 403.6  | 406.7  | 405.2  | 406.7  | 402.0  |
| 77.5° | 317.6  | 319.1  | 325.4  | 323.8  | 323.8  | 323.8  | 325.4  | 323.8  | 323.8  | 323.8  |
| 80°   | 245.6  | 244.0  | 248.7  | 247.2  | 244.0  | 244.0  | 247.2  | 244.0  | 244.0  | 247.2  |
| 82.5° | 172.1  | 172.1  | 172.1  | 168.9  | 168.9  | 165.8  | 168.9  | 165.8  | 167.4  | 168.9  |
| 85°   | 100.1  | 95.4   | 98.6   | 93.9   | 93.9   | 92.3   | 93.9   | 90.7   | 90.7   | 93.9   |
| 87.5° | 29.7   | 26.6   | 29.7   | 28.2   | 25.0   | 25.0   | 25.0   | 23.5   | 23.5   | 25.0   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)