

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: 109P133

Luminaire Tested: **2PGX-2U1-5/8S33I-PAF**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: 109P133  
Test Lab:  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 2PGX-2U1-5/8S33I-PAF  
Description: 2 X 2 Recessed Convertable Body Troffer with a  
4" deep 9 cell semi-specular low iridescent  
precision cell parabolic louver.  
Light Source: Two-FBO31/35K - 2800 Lumens ea. - 31 Watts ea.  
Ballast/Driver: Triad-Utrad B232I120 Electronic

**Summary**

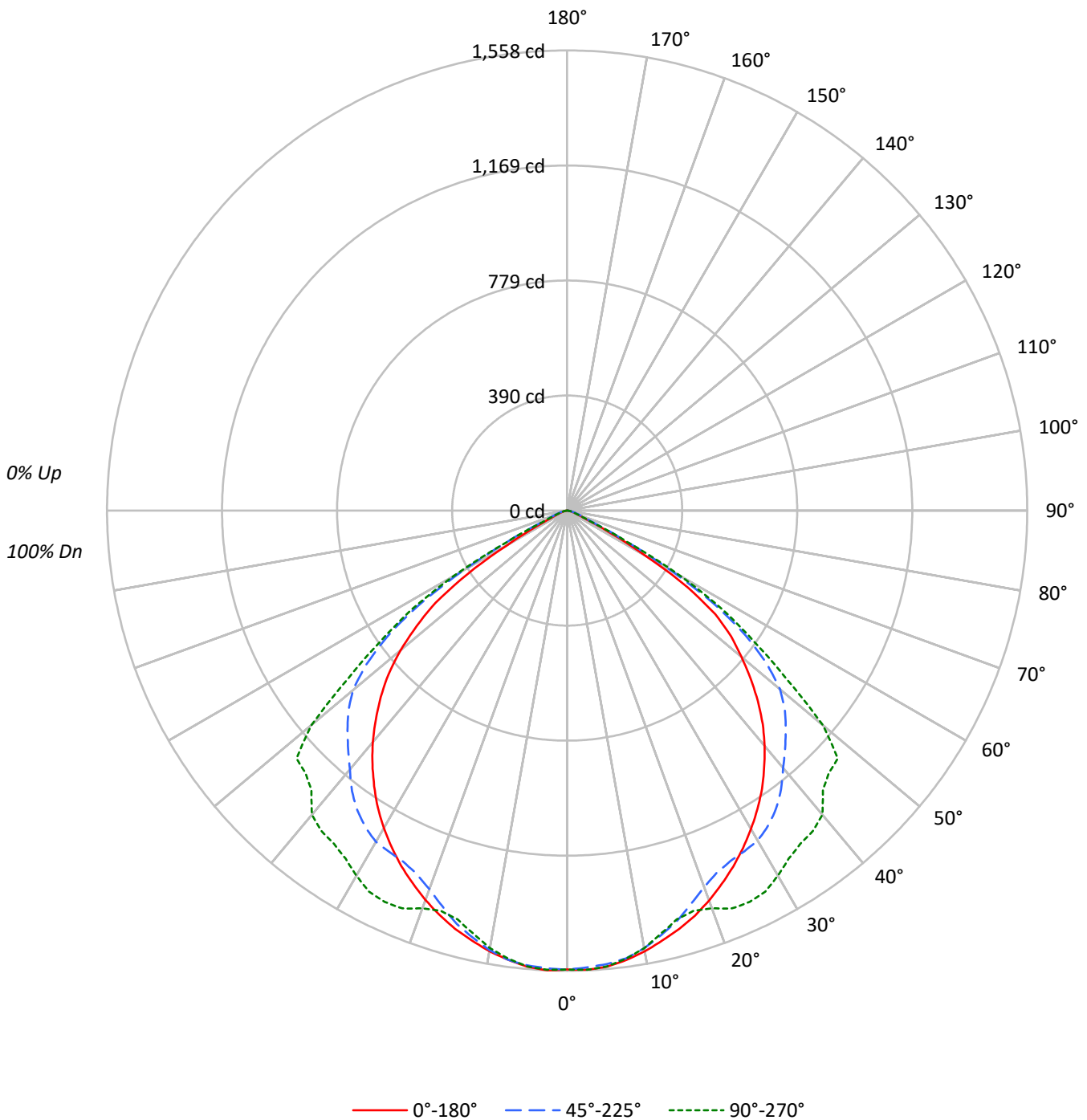
Lumens per Lamp: 2800 (2 lamps)  
Luminaire Lumens: 3551.1 lumens  
Efficiency: 63.4%  
Efficacy: 61.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.37 / 1.39  
Luminous Opening: Rectangular (W 1.74' x L: 1.76' x H: 0')  
CIE Type: Direct

Input Watts (W): 57.5  
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 |    |    |    |    | 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 | 50 | 30 | 10 | 0  |    |
| RCR |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| 0   | 75 | 75 | 75 | 75 | 74 | 74 | 74 | 74 | 70 | 70 | 70 | 67 | 67 | 67 | 65 | 65 | 65 | 63 |    |    |    | 63 |
| 1   | 71 | 68 | 66 | 64 | 69 | 67 | 65 | 63 | 64 | 63 | 61 | 62 | 60 | 59 | 59 | 58 | 58 | 56 |    |    |    | 56 |
| 2   | 65 | 61 | 57 | 54 | 64 | 60 | 57 | 54 | 58 | 55 | 53 | 56 | 53 | 51 | 54 | 52 | 50 | 49 |    |    |    | 49 |
| 3   | 60 | 55 | 50 | 47 | 59 | 54 | 49 | 46 | 52 | 48 | 45 | 50 | 47 | 45 | 49 | 46 | 44 | 43 |    |    |    | 43 |
| 4   | 56 | 49 | 44 | 40 | 54 | 48 | 44 | 40 | 47 | 43 | 39 | 45 | 42 | 39 | 44 | 41 | 38 | 37 |    |    |    | 37 |
| 5   | 51 | 44 | 39 | 35 | 50 | 43 | 39 | 35 | 42 | 38 | 35 | 41 | 37 | 34 | 40 | 36 | 34 | 33 |    |    |    | 33 |
| 6   | 48 | 40 | 35 | 31 | 46 | 39 | 34 | 31 | 38 | 34 | 31 | 37 | 33 | 30 | 36 | 33 | 30 | 29 |    |    |    | 29 |
| 7   | 44 | 36 | 31 | 27 | 43 | 36 | 31 | 27 | 35 | 30 | 27 | 34 | 30 | 27 | 33 | 30 | 27 | 26 |    |    |    | 26 |
| 8   | 41 | 33 | 28 | 25 | 40 | 33 | 28 | 24 | 32 | 27 | 24 | 31 | 27 | 24 | 30 | 27 | 24 | 23 |    |    |    | 23 |
| 9   | 38 | 30 | 25 | 22 | 38 | 30 | 25 | 22 | 29 | 25 | 22 | 29 | 25 | 22 | 28 | 24 | 22 | 21 |    |    |    | 21 |
| 10  | 36 | 28 | 23 | 20 | 35 | 28 | 23 | 20 | 27 | 23 | 20 | 27 | 23 | 20 | 26 | 22 | 20 | 19 |    |    |    | 19 |

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

|     | 0°   | 90°  | 180° |
|-----|------|------|------|
| 0°  | 5462 | 5462 | 5462 |
| 5°  | 5469 | 5465 | 5469 |
| 10° | 5407 | 5368 | 5407 |
| 15° | 5335 | 5214 | 5335 |
| 20° | 5255 | 5360 | 5248 |
| 25° | 5158 | 5670 | 5150 |
| 30° | 5053 | 5792 | 5037 |
| 35° | 4934 | 5909 | 4887 |
| 40° | 4772 | 6167 | 4698 |
| 45° | 4538 | 6233 | 4434 |
| 50° | 4210 | 6179 | 4025 |
| 55° | 3750 | 4737 | 3334 |
| 60° | 2186 | 3121 | 1673 |
| 65° | 657  | 757  | 516  |
| 70° | 349  | 370  | 308  |
| 75° | 258  | 258  | 217  |
| 80° | 202  | 182  | 162  |
| 85° | 161  | 121  | 121  |



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

| Zone      | Lumens | % Fixture | % Lamp |      | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|-----------|--------|-----------|--------|------|------|------|------|------|------|------|
| 0°-10°    | 146.3  | 4.1       | 2.6    | 0°   | 1554 | 1554 | 1554 | 1554 | 1554 |      |
| 10°-20°   | 408.6  | 11.5      | 7.3    | 5°   | 1550 | 1541 | 1549 | 1546 | 1550 | 147  |
| 20°-30°   | 625.9  | 17.6      | 11.2   | 15°  | 1466 | 1438 | 1433 | 1448 | 1466 | 413  |
| 30°-40°   | 771.9  | 21.7      | 13.8   | 25°  | 1330 | 1309 | 1462 | 1312 | 1328 | 613  |
| 40°-50°   | 814.0  | 22.9      | 14.5   | 35°  | 1150 | 1233 | 1377 | 1239 | 1139 | 718  |
| 50°-60°   | 609.9  | 17.2      | 10.9   | 45°  | 913  | 1047 | 1254 | 1052 | 892  | 702  |
| 60°-70°   | 144.2  | 4.1       | 2.6    | 55°  | 612  | 739  | 773  | 744  | 544  | 520  |
| 70°-80°   | 25.2   | 0.7       | 0.4    | 65°  | 79   | 107  | 91   | 107  | 62   | 115  |
| 80°-90°   | 5.1    | 0.1       | 0.1    | 75°  | 19   | 25   | 19   | 25   | 16   | 21   |
| 90°-100°  | 0.0    | 0.0       | 0.0    | 85°  | 4    | 5    | 3    | 4    | 3    | 5    |
| 100°-110° | 0.0    | 0.0       | 0.0    | 90°  | 0    | 0    | 0    | 0    | 0    | 0    |
| 110°-120° | 0.0    | 0.0       | 0.0    | 95°  | 0    | 0    | 0    | 0    | 0    | 0    |
| 120°-130° | 0.0    | 0.0       | 0.0    | 105° | 0    | 0    | 0    | 0    | 0    | 0    |
| 130°-140° | 0.0    | 0.0       | 0.0    | 115° | 0    | 0    | 0    | 0    | 0    | 0    |
| 140°-150° | 0.0    | 0.0       | 0.0    | 125° | 0    | 0    | 0    | 0    | 0    | 0    |
| 150°-160° | 0.0    | 0.0       | 0.0    | 135° | 0    | 0    | 0    | 0    | 0    | 0    |
| 160°-170° | 0.0    | 0.0       | 0.0    | 145° | 0    | 0    | 0    | 0    | 0    | 0    |
| 170°-180° | 0.0    | 0.0       | 0.0    | 155° | 0    | 0    | 0    | 0    | 0    | 0    |
| 0°-30°    | 1180.9 | 33.3      | 21.1   | 165° | 0    | 0    | 0    | 0    | 0    | 0    |
| 0°-40°    | 1952.8 | 55.0      | 34.9   | 175° | 0    | 0    | 0    | 0    | 0    | 0    |
| 0°-60°    | 3376.6 | 95.1      | 60.3   | 180° | 0    | 0    | 0    | 0    | 0    | 0    |
| 0°-90°    | 3551.1 | 100.0     | 63.4   |      |      |      |      |      |      |      |
| 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°   | 3551.1 | 100.0     | 63.4   |      |      |      |      |      |      |      |



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**CANDELA DISTRIBUTION (FULL):**

|        | 0°   | 22.5° | 45°  | 67.5° | 90°  | 112.5° | 135° | 157.5° | 180° |
|--------|------|-------|------|-------|------|--------|------|--------|------|
| 0°     | 1554 | 1554  | 1554 | 1554  | 1554 | 1554   | 1554 | 1554   | 1554 |
| 2.5°   | 1556 | 1550  | 1548 | 1552  | 1556 | 1553   | 1551 | 1553   | 1558 |
| 5°     | 1550 | 1542  | 1541 | 1548  | 1549 | 1546   | 1546 | 1547   | 1550 |
| 7.5°   | 1535 | 1528  | 1529 | 1528  | 1530 | 1530   | 1534 | 1534   | 1534 |
| 10°    | 1515 | 1507  | 1504 | 1502  | 1504 | 1506   | 1511 | 1515   | 1515 |
| 12.5°  | 1491 | 1483  | 1472 | 1470  | 1467 | 1475   | 1480 | 1493   | 1491 |
| 15°    | 1466 | 1454  | 1438 | 1432  | 1433 | 1435   | 1448 | 1467   | 1466 |
| 17.5°  | 1438 | 1421  | 1396 | 1403  | 1421 | 1406   | 1405 | 1433   | 1436 |
| 20°    | 1405 | 1384  | 1356 | 1398  | 1433 | 1400   | 1364 | 1396   | 1403 |
| 22.5°  | 1368 | 1342  | 1326 | 1411  | 1458 | 1412   | 1331 | 1356   | 1366 |
| 25°    | 1330 | 1300  | 1309 | 1418  | 1462 | 1419   | 1312 | 1314   | 1328 |
| 27.5°  | 1289 | 1255  | 1300 | 1409  | 1454 | 1411   | 1303 | 1268   | 1286 |
| 30°    | 1245 | 1206  | 1290 | 1387  | 1427 | 1390   | 1295 | 1219   | 1241 |
| 32.5°  | 1199 | 1156  | 1266 | 1347  | 1397 | 1352   | 1271 | 1171   | 1193 |
| 35°    | 1150 | 1109  | 1233 | 1312  | 1377 | 1318   | 1239 | 1121   | 1139 |
| 37.5°  | 1096 | 1066  | 1190 | 1283  | 1367 | 1290   | 1197 | 1073   | 1083 |
| 40°    | 1040 | 1024  | 1138 | 1261  | 1344 | 1268   | 1144 | 1029   | 1024 |
| 42.5°  | 980  | 978   | 1092 | 1220  | 1282 | 1230   | 1097 | 982    | 959  |
| 45°    | 913  | 927   | 1047 | 1157  | 1254 | 1168   | 1052 | 930    | 892  |
| 47.5°  | 843  | 869   | 1000 | 1117  | 1243 | 1127   | 1005 | 871    | 821  |
| 50°    | 770  | 800   | 941  | 1060  | 1130 | 1070   | 947  | 803    | 736  |
| 52.5°  | 700  | 727   | 852  | 916   | 936  | 926    | 858  | 724    | 642  |
| 55°    | 612  | 646   | 739  | 730   | 773  | 739    | 744  | 630    | 544  |
| 57.5°  | 485  | 528   | 597  | 570   | 624  | 578    | 597  | 511    | 401  |
| 60°    | 311  | 366   | 407  | 405   | 444  | 410    | 406  | 352    | 238  |
| 62.5°  | 169  | 202   | 219  | 247   | 229  | 249    | 221  | 198    | 123  |
| 65°    | 79   | 103   | 107  | 124   | 91   | 124    | 107  | 102    | 62   |
| 67.5°  | 48   | 61    | 63   | 66    | 52   | 67     | 64   | 60     | 41   |
| 70°    | 34   | 42    | 46   | 45    | 36   | 45     | 45   | 42     | 30   |
| 72.5°  | 25   | 31    | 34   | 32    | 26   | 33     | 33   | 30     | 22   |
| 75°    | 19   | 23    | 25   | 24    | 19   | 24     | 25   | 22     | 16   |
| 77.5°  | 14   | 17    | 18   | 17    | 14   | 17     | 18   | 16     | 12   |
| 80°    | 10   | 12    | 13   | 12    | 9    | 12     | 13   | 12     | 8    |
| 82.5°  | 7    | 8     | 8    | 8     | 6    | 8      | 8    | 8      | 5    |
| 85°    | 4    | 4     | 5    | 4     | 3    | 4      | 4    | 4      | 3    |
| 87.5°  | 2    | 2     | 2    | 2     | 1    | 1      | 2    | 2      | 1    |
| 90°    | 0    | 0     | 0    | 0     | 0    | 0      | 0    | 0      | 0    |
| 92.5°  | 0    | 0     | 0    | 0     | 0    | 0      | 0    | 0      | 0    |
| 95°    | 0    | 0     | 0    | 0     | 0    | 0      | 0    | 0      | 0    |
| 97.5°  | 0    | 0     | 0    | 0     | 0    | 0      | 0    | 0      | 0    |
| 100°   | 0    | 0     | 0    | 0     | 0    | 0      | 0    | 0      | 0    |
| 102.5° | 0    | 0     | 0    | 0     | 0    | 0      | 0    | 0      | 0    |
| 105°   | 0    | 0     | 0    | 0     | 0    | 0      | 0    | 0      | 0    |
| 107.5° | 0    | 0     | 0    | 0     | 0    | 0      | 0    | 0      | 0    |
| 110°   | 0    | 0     | 0    | 0     | 0    | 0      | 0    | 0      | 0    |



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**CANDELA DISTRIBUTION (continued):**

|        | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|--------|----|-------|-----|-------|-----|--------|------|--------|------|
| 112.5° | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 115°   | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 117.5° | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 120°   | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 122.5° | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 125°   | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 127.5° | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 130°   | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 132.5° | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 135°   | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 137.5° | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 140°   | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 142.5° | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 145°   | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 147.5° | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 150°   | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 152.5° | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 155°   | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 157.5° | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 160°   | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 162.5° | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 165°   | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 167.5° | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 170°   | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 172.5° | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 175°   | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 177.5° | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |
| 180°   | 0  | 0     | 0   | 0     | 0   | 0      | 0    | 0      | 0    |

(END OF REPORT)