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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 待測物：金屬圓筒 使用儀器：游標尺 | | | | | | | | | | | | | |
| 測量量 | 測量1 | 測量2 | 測量3 | 測量4 | 測量5 | 測量6 | 測量7 | 測量8 | 測量9 | 測量10 | 平均值 | 標準差 |
| 高度(cm) | 5.125 | 5.115 | 5.120 | 5.115 | 5.115 | 5.120 | 5.115 | 5.115 | 5.115 | 5.115 | 5.117 | 0.003317 |
| 深度(cm) | 4.630 | 4.625 | 4.635 | 4.625 | 4.625 | 4.630 | 4.630 | 4.645 | 4.645 | 4.640 | 4.633 | 0.007483 |
| 內徑(cm) | 1.985 | 1.990 | 1.980 | 1.990 | 1.985 | 1.990 | 1.990 | 1.990 | 1.990 | 1.990 | 1.988 | 0.003317 |
| 外徑(cm) | 3.195 | 3.190 | 3.190 | 3.190 | 3.185 | 3.190 | 3.190 | 3.195 | 3.190 | 3.190 | 3.191 | 0.002693 |
| 質量(g) | 207.62 | 207.61 | 207.62 | 207.62 | 207.61 | 207.64 | 207.61 | 207.60 | 207.63 | 207.63 | 207.619 | 0.011358 |
| 體積(cm3)= | 26.53 |  |  |  | 表面積(cm2)= | 96.21 |  |  | 密度(g/cm3)= | 7.826 |  |  |

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| 待測物:黃色圓柱 | 螺旋測微計 | | | | 游標尺 | | | |
| 高度(cm) | 1.851 | 1.850 | 1.851 | 1.851 | 1.855 | 1.855 | 1.855 | 1.855 |
| 1.850 | 1.851 | 1.851 | 1.851 | 1.855 | 1.855 | 1.855 | 1.855 |
| 1.850 | 1.851 | 平均: 1.851 | 標準差:0.0004583 | 1.855 | 1.855 | 平均: 1.855 | 標準差:0 |
| 外徑(cm) | 2.098 | 2.099 | 2.099 | 2.098 | 2.100 | 2.100 | 2.100 | 2.100 |
| 2.098 | 2.100 | 2.098 | 2.100 | 2.100 | 2.100 | 2.100 | 2.100 |
| 2.100 | 2.100 | 平均: 2.099 | 標準差:0.0008944 | 2.100 | 2.100 | 平均: 2.100 | 標準差:0 |
| 體積(cm3) | 6.404 | | | | 6.425 | | | |
| 質量(g) | 53.96 | | | | 53.96 | | | |
| 密度(g/cm3) | 8.426 | | | | 8.398 | | | |

誤差來源並解釋: 圓筒不完美，所以測量不同地方的時候數據不一樣

電秤誤差、游標尺與物體間的夾角影響測量結果

誤差來源並解釋: 圓柱不完美，所以測量不同地方的時候數據不一樣

螺旋測微器鬆緊影響測量結果、游標尺與物體間的夾角影響測量結果

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 待測物:金屬線 | 螺旋測微計 | | | | 游標尺 | | | |
| 外徑(cm) | 0.980 | 0.980 | 0.980 | 0.980 | 0.010 | 0.010 | 0.010 | 0.010 |
| 0.980 | 0.990 | 1.010 | 0.980 | 0.010 | 0.010 | 0.010 | 0.010 |
| 0.980 | 1.000 | 平均: 0.986 | 標準差: 0.0102 | 0.010 | 0.010 | 平均: 0.010 | 標準差: 0 |

誤差來源並解釋: 螺旋測微器鬆緊影響測量結果、游標尺精度較低

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| 待測物：平面玻璃 | | | | | | 使用儀器：球徑計 | | | | | |
| 測量量(cm) | | | | | | | | | | 平均值 | 標準差 |
| 1.312 | 1.311 | 1.313 | 1.313 | 1.313 | 1.313 | 1.312 | 1.312 | 1.313 | 1.314 | 1.312 | 0.001 |
| 待測物：球面玻璃 | | | | | | 使用儀器：球徑計 | | | | | |
| 測量量(cm) | | | | | | | | | | 平均值 | 標準差 |
| 1.625 | 1.628 | 1.630 | 1.630 | 1.627 | 1.627 | 1.627 | 1.627 | 1.623 | 1.601 | 1.624 | 0.008 |
| a= 0.3119 | | | | | | | | | | | |
| 待測物：球徑計兩點間的距離S(cm) | | | | | | 使用儀器：球徑計 | | | | | |
| 5.475 | | 5.410 | | 5.415 | | 平均值: 5.438  標準差:0.02620 | | | | | |
| 5.465 | | 5.400 | | 5.420 | |
| 5.455 | | 5.420 | | 5.430 | |
| 5.470 | | 5.410 | | 5.445 | |
| 5.480 | | 5.415 | | 5.455 | |
| 曲率半徑R= 15.96 | | | | | | | | | | | |

誤差來源並解釋: 球面玻璃不是完美球面、儀器沒校正可能會有誤差