1031 示波器的使用 数据处理报告模板

原始数据记录：

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 位置 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| d/mm | 13.25000 | 18.14000 | 23.11000 | 28.08000 | 33.02000 | 38.03000 | 43.01000 | 47.95000 | 52.88000 | 162.08000 |
| 位置 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| d/mm | 167.19000 | 172.13000 | 177.03000 | 181.90000 | 186.77000 | 191.74000 | 196.72000 | 201.71000 | 206.70000 | #20# |

频率f1 = 35.0710, f2 = 35.0690

数据处理：

1.逐差法求λ:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| i | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 10Δd | 4.96100 | 4.96833 | 4.96733 | 4.96500 | 4.96267 | 4.95800 | 4.95767 | 4.95900 | 4.96100 | 4.96133 |

波长的计算：

, 4.96213 mm, 9.92427 mm

不确定度计算：

0.0000 mm

0.0029 mm

0.0577 mm

0.0578 mm

0.1156 mm

最终结果：

9±1 (mm)

2.计算f及u(f):

35.0700 kHz

0.0010 kHz

0.00058 kHz

35±6 kHz

3.计算c及u(c):

= 348.04403 m/s

0.0116

4.0546 m/s

348±4 m/s

使用说明：将实验报告中与数据本身无关的公式以及数据表格提前打好，将需要填充数据的地方以“#key#”的方式预留好。然后调用程序处理数据即可得到一份完整的实验报告。