**一．测牛顿环曲率半径**

牛顿环测量数据表（钠光灯波长取λ=589.3nm）

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 环的级数 | *m* | **30** | **29** | **28** | **27** | **26** |
| 环的位置(mm) | 右 | 29.800 | 29.721 | 29.663 | 29.599 | 29.524 |
| 左 | 20.118 | 20.228 | 20.388 | 20.428 | 20.488 |
| 环的弦长 | *Dm* | 9.682 | 9.493 | 9.275 | 9.171 | 9.036 |
|  | | 93.741 | 90.117 | 86.026 | 84.107 | 81.649 |
| 环的级数 | *n* | **20** | **19** | **18** | **17** | **16** |
| 环的位置(mm) | 右 | 29.324 | 29.219 | 29.130 | 29.075 | 28.992 |
| 左 | 20.798 | 20.829 | 20.909 | 20.963 | 21.038 |
| 环的弦长 | *Dn* | 8.526 | 8.39 | 8.221 | 8.112 | 7.954 |
|  | | 72.693 | 70.392 | 67.585 | 65.806 | 63.266 |
|  | | **21.048** | **19.725** | **18.441** | **18.301** | **18.383** |

根据表所测得的资料，用逐差法选 *m*  *n*  10 ，得出 5组 的数值，然后取平均值

由式(3-16-6)求得曲率半径的平均值



*R* 的 *A*类不确定度标准偏差





测量结果

**二.利用劈尖干涉测定细丝直径**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 条纹序号N1 | 0 | 10 | 20 | 30 | 40 |
| X1（mm） | 25.000 | 26.459 | 27.923 | 29.445 | 30.959 |
| 条纹序号N2 | 50 | 60 | 70 | 80 | 90 |
| X2（mm） | 32.545 | 34.162 | 35.840 | 37.563 | 39.274 |

为相邻两暗纹平均间距





**三.测量劈尖长度L**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 测量次数 | 1 | 2 | 3 | 4 | 5 | 6 |
| 劈棱位置(mm) | 11.746 | 13.465 | 13.863 | 21.910 | 21.919 | 13.800 |
| 薄片位置（mm） | 41.828 | 44.789 | 44.692 | 45.580 | 45.220 | 43.338 |
|  | 30.082 | 31.324 | 30.829 | 23.669 | 23.311 | 29.538 |
|  | **28.126** | | | | | |
|  | 1.956 | 3.198 | 2.703 | 4.457 | 4.815 | 1.412 |