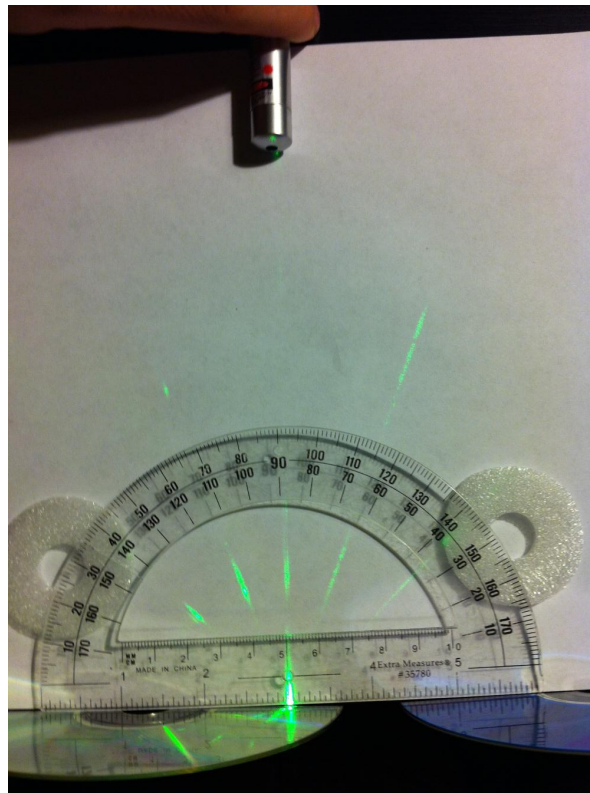


Estimating the storage capacity of a CD/DVD using diffraction





CD/DVD drive

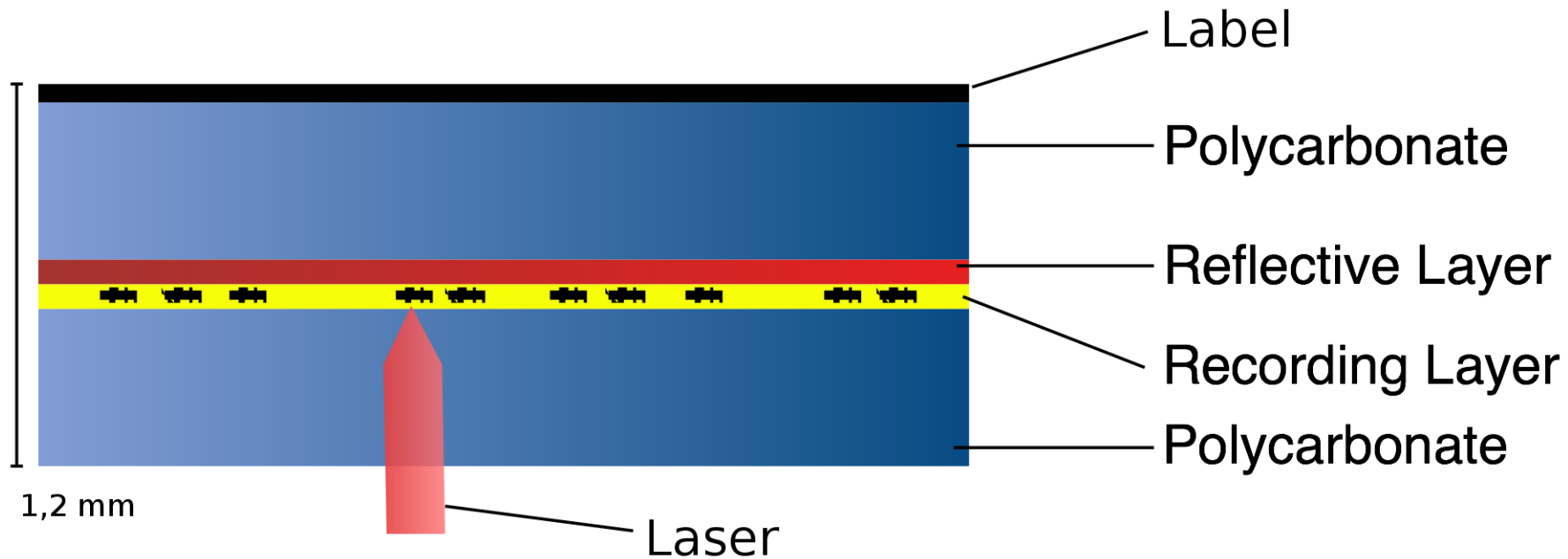
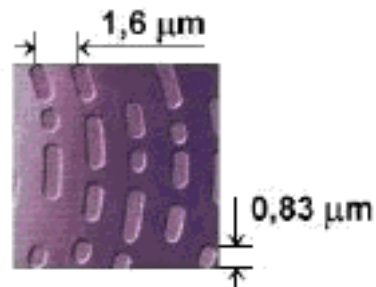


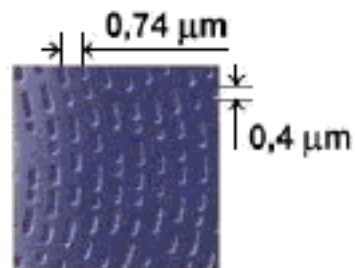
Image top: <http://en.wikipedia.org/wiki/File:Dismdvd.jpg>

Image bottom: http://commons.wikimedia.org/wiki/File:DVD_querschnitt.svg (Creative Commons license)

How does a CD/DVD store data?

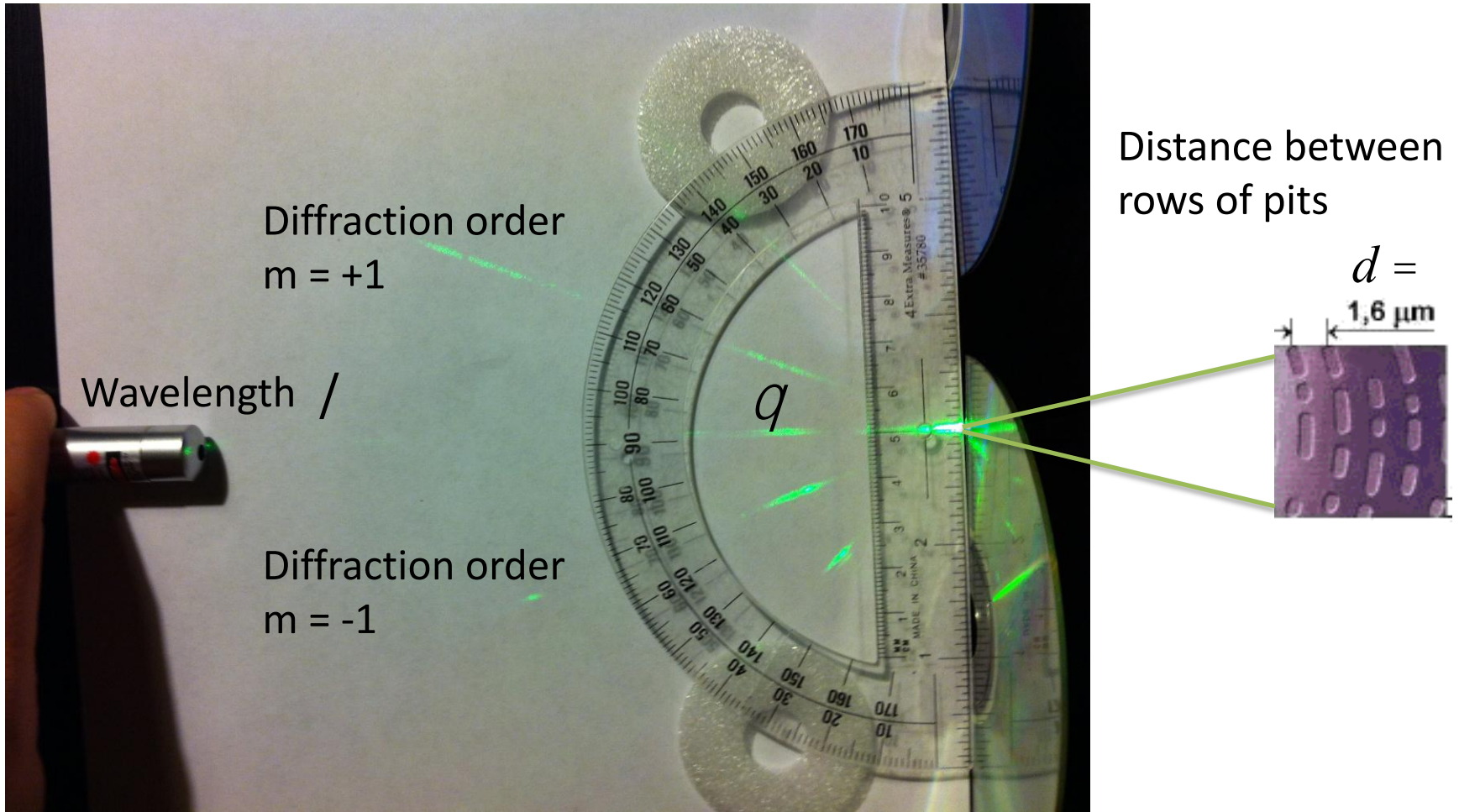


CD-ROM

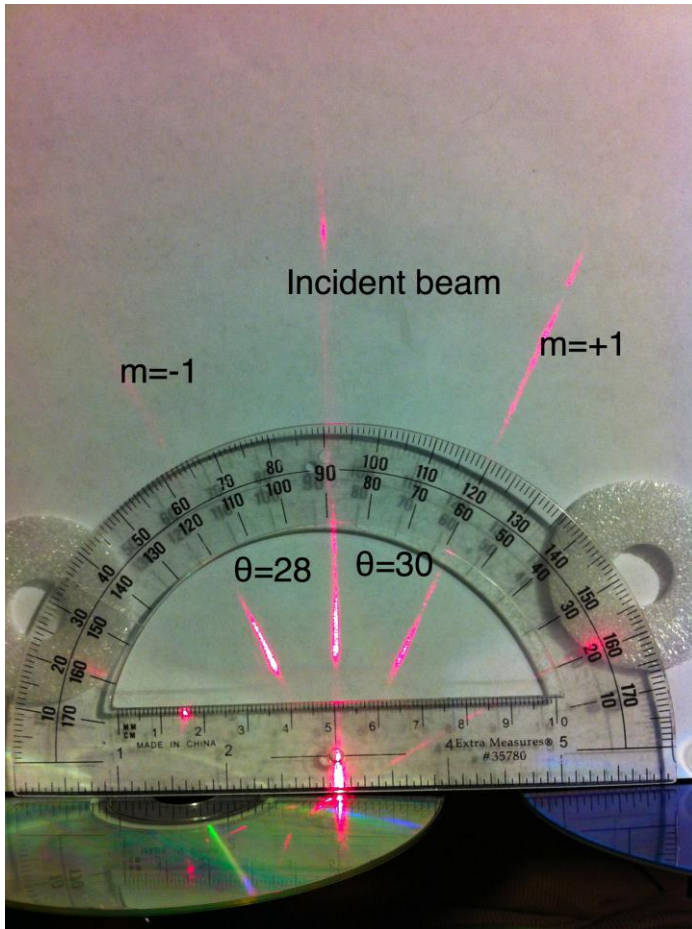


DVD

$$d \sin q = m \lambda$$



Measuring diffraction angles



You would record it as follows:

| | Laser color | Wavelength (nm) | $\theta, m=+1$ | $\theta, m=-1$ | d, m=+1 | d, m=-1 | d_{mean} |
|-----|-------------|-----------------|----------------|----------------|---------|---------|------------|
| CD | red | | 30 | 28 | | | |
| | | | | | | | |
| DVD | | | | | | | |
| | | | | | | | |

Also identify the wavelength of your laser. Then calculate d.