



### Concave Grating

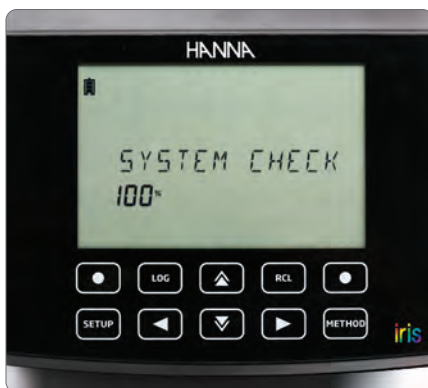
This element of the optical system is what generates the spectrum of light. When the light from the tungsten lamp hits the grating it is met with interference coatings that turn the polychromatic white light into a rainbow. This rainbow contains dispersed light at all wavelengths in the visible spectrum. The rotation of this grating is what allows for a specific wavelength to be selected. This ability is one of the biggest differences between a spectrophotometer and a photometer. The concave grating which accomplishes this is superior to other types of diffraction, such as prisms, as it minimizes stray light generated and has constant bandwidth. It also combines elements of the optical system that would typically be separate, for example if a flat grating was used a concave mirror would need to be added in order to refocus the light. The combination of these two pieces creates greater efficiency and a smaller optical system to yield a more compact portable meter.

### Narrow Bandwidth and High Resolution

Having a small bandwidth is necessary to accurately measure narrow peaks. The iris® spectrophotometer maintains a narrow bandwidth of 5 nm resulting in good spectral resolution. This leads to accurate measurement of sharp, narrow absorbance peaks. Additionally, the high resolution of 1 nm generates greater sensitivity as the wavelength is closer to where the sample absorbs the most light.

### Low Stray Light

A common problem in spectrophotometers is stray light. Stray light can be light which is outside the wavelength the meter is measuring or also light at the proper wavelength but from outside the meter. This leads to inaccurate readings as this light would not be absorbed by the sample but would still be detected by the meter. This is a problem that is typically hard to control. Due to the design of the optical system we are able to keep this potential issue to a minimum to improve the linearity and accuracy of readings.



### System Check

Upon turning on the meter a performance check occurs to confirm that the light source is working properly and to calibrate the position of the grating. The grating calibration works by scanning for the "zero order" light reflecting off the grating. If any mechanical problems are present, the meter will display an alert. This feature establishes confidence in measurements knowing that the meter is always working properly without needing to run any additional tests.



### Universal Cuvette Holder and Auto-Recognition

The built-in cuvette holder holds both 22 mm round cuvettes and rectangular cuvettes with a 5 cm path length. Adapters for the cuvette holder are available to hold other 13 and 16 mm round cuvettes, and 10 mm square cuvettes including the 13 mm vial adapter with barcode reader. Rectangular cuvettes have longer path lengths which result in higher sensitivity in readings of low absorbance samples. Additionally, the meter permits the selection of the size of the cuvette used in custom user methods from the available sizes. For all methods, the programmed cuvette size is displayed on the screen to assure that the proper path length is being used by the meter when calculating measurements.

### Customized Methods

- Step-by-step method creation
- Up to 10 calibration points
- Flexible calculations for multi wavelength methods

The HI802 intuitive user interface guides users step-by-step through the process of creating own custom methods i.e.: naming your method, setting the measurement wavelengths, creating reaction timers, and calibrating the method. Up to 10 points can be used to calibrate methods.

### User Interface

No one likes to work with difficult equipment, which is why we have worked hard to create an interface that makes the meter's operation seamless. The intuitive menu design and large LCD screen all make working with the meter a breeze. Get ready for your new favorite piece of lab equipment.