Optical Balance Procedure for the Unbalanced Diode Error on the G1362A Refractive Index Detector
Optical Balance

When the sample and reference cells both contain the same liquids an equal amount of light should fall on each light receiving diode, the diode balance will equal 0. If this balance of light needs to be corrected the optical balance procedure can be used.

Diode balance is calculated as follows;

**Diode Balance**

\[
diode\text{balance} = \frac{(\text{diode}_1 - \text{diode}_2)}{\text{diode}_1 + \text{diode}_2}
\]

Where:
- diode\(_1\) = signal proportional to the amount of light falling on diode 1
- diode\(_2\) = signal proportional to the amount of light falling on diode 2

Optical balance adjustment is a manual procedure where the position of the light beam falling on the light receiving diode is adjusted using the zero glass adjustment screw.

**NOTE** The detector will become not-ready when the diode balance value falls outside the range - 0.5 to + 0.5.

**NOTE** Both sample and reference cell must be purged with the solvents to be used before optical balance is performed.
The Optical Balance Procedure

When required: When light falling on light receiving diodes is out of balance.
Tools required: Flat-head screwdriver.
Parts required: None.

Steps
1. Purging the sample and reference cells.
2. Start optical balance.
3. Adjust optical balance.

Purging the Sample and Reference Cells
1. Switch the purge valve to the On position.
2. Purge the sample and reference cells for around 10 minutes with the solvents to be used.
3. Switch the purge valve to the Off position.

Start Optical Balance
1. From the user interface start the RID optical balance (see Figure 21).
   ChemStation: Diagnosis - Maintenance - RID Optical Balance
   Control Module: Analysis(RID) - m - Status
Troubleshooting and Test Functions

The Optical Balance Procedure

Figure 21  Optical Balance

Adjust Optical Balance

1. While monitoring the optical balance use the flat-headed screwdriver to turn the zero glass adjustment screw slowly (see Figure 22).

2. When the diode balance value reaches 0.00 optical balance is restored.

Figure 22  Turning the zero glass adjustment screw