

## 3. Load Characteristics

The following conditions are necessary to conduct load characteristic tests:

- A stable environment
- Good and stable load conditions
- Stable power supply and indicator

After the above conditions have been satisfied, load and unload a weight of rated capacity. Repeat this procedure at least three times. Next, read the initial output voltage. Then, set several load points between zero and the rated load so that the interval between each load point is the same. Weigh the loads in corresponding order at different load points for the same interval of time, making certain to record the rated output after each load becomes stable. When the rated capacity is reached, remove the loads in reverse order and read the output voltages. Repeat this procedure three times.

### 3.1. Zero Balance

Zero balance is the electrical output when the rated excitation voltage is applied without any load on the cell. It is generally expressed as a percentage of rated output.

### 3.2. Nonlinearity

$$\text{Nonlinearity} = \frac{\Delta\theta_{Ln}}{\text{Rated Output}} \times 100 \quad (\% \text{ of R.O.})$$

( $\Delta\theta_{Ln}$  : The largest difference between the reference line and actual output when a load increases)

### 3.3. Hysteresis Error

$$\text{Hysteresis} = \frac{\Delta\theta_{\mu m}}{\text{Rated Output}} \times 100$$

( $\Delta\theta_{\mu m}$  : The maximum difference in output generated when a load increases and decreases)

### 3.4. Repeatability

$$\text{Non - repeatability} = \frac{\Delta\theta_R}{\text{Rated Output}} \times 100$$

( $\Delta\theta_R$  : The maximum difference in output for the same load when a load increases)

According to the OIML, nonlinearity and the hysteresis error are not considered separately, and judgments are made based on whether all values are within the specified error range.

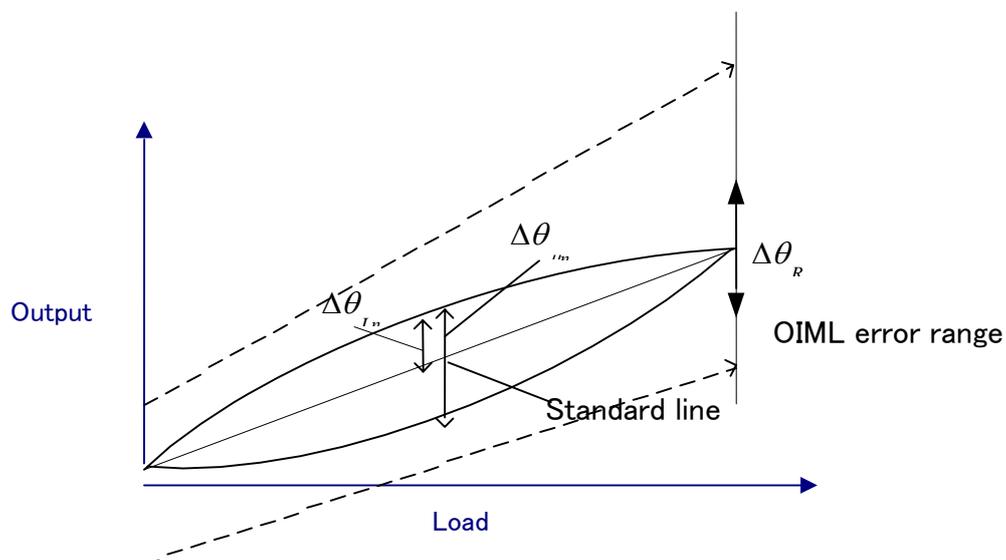


Figure 3.5