Optical Calibration Laboratory

ISO Reference Standards
General Instructions

Description

The reference standards issued by RISE Research institutes of Sweden AB are referred to as IR3 standards, which means that they are issued by a laboratory authorised by ISO/TC6. The IR3 standards consist of a pad of paper with a cover showing type and identification of the standard. The attached data label indicates the values assigned in the RISE reference instrument. The radiance (reflectance) factor scale of the reference instrument is calibrated by direct transfer from NRC, Ottawa, and the UV content in the illumination is adjusted with the aid of fluorescent transfer standards also calibrated at NRC, Ottawa.

Materials

The non-fluorescent IR3 standards are made of a matt, stable, non-fluorescent, cotton-based paper. The fluorescent IR3 standards are made of a matt, wood-free fluorescent paper, aged to ensure that the optical properties have stabilized. The standards for filter instruments are made from different types of papers in order to obtain an ISO brightness value close to the nominal value.

Packaging and transport

The IR3 standards are individually sealed in plastic envelopes and are sent out on or about the 15th each month, normally by airmail.

Instructions for use

1. Allow the plastic envelope containing the IR3 standard to come to temperature equilibrium in the laboratory where the standard is to be used, before opening the envelope.
2. After the envelope is opened, allow the IR3 standard to come to humidity equilibrium before use.
3. Enter the calibration data on the data label into the instrument/computer and calibrate the instrument according to the manufacturer's instructions. This should be done as soon as possible after receipt of the new standard. The assigned values apply only to the top sheet of the complete paper pad.

4. Clean two high quality non-fluorescent working standards. Measure their reflectance factors in the calibrated instrument and record these data for use in later calibration with the working standards. For measurements on fluorescent samples, also record the values of your stable fluorescent working standards for later UV adjustments. If possible, also record the UV setting for instrument follow-up.

Handling and storage

1. Keep the IR3 standards in their plastic envelopes in the dark at all times when they are not in use.
2. Take extreme care to ensure that no finger or other foreign object comes into contact with the measurement area on the top sheet of the pad. The pad is a few millimetres longer than the label, in order to make it easier to lift the label.
3. Provided that the surface is kept clean, the IR3 standard is stable for 2-3 months. Frequent use may however tend to reduce its stability due to inadvertent soiling of the surface on exposure to the laboratory environment.
4. Therefore, use the working standards for regular calibrations and the IR3 standards only when the working standards need to be checked or recalibrated.

For more information, contact *optics.innventia@ri.se* or *www.ri.se*

Version: 2019-09-18

RISE RESEARCH INSTITUTES OF SWEDEN AB
Box 5604, SE-114 86 Stockholm, Sweden
Tel +46 10 516 50 00
info@ri.se,
www. ri.se