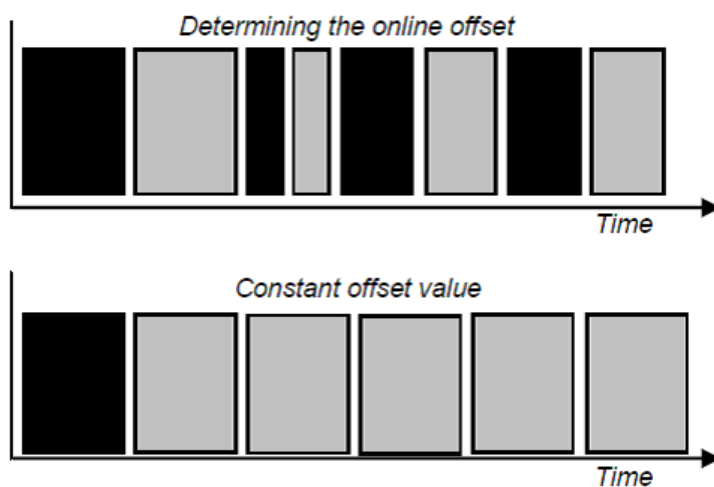




Integrated Filter Wheel for Dark Current Subtraction and Expanded Measurement Range

Fast accurate spectral photometric, radiometric and colorimetric measurements utilizing unique optical design & innovative technology



BTS2048-VL Dark Current Measurement

Due to thermal activity electrons accumulate within the diode array over time that contaminate the real incident light *signal*. Plus this added *noise* changes with exposure time. The dark current noise contribution should be known through measurement over a given exposure time and reduced by subtraction from the real signal.

A compact *filter wheel* is integrated into the BTS2048-VL for the dark current measurement and compensation and to extend the dynamic measurement range. The wheel can be set to either of four positions: open, closed, Filter OD1 and Filter OD2. The *Optical Density Filters* expand the measurement range by a factor of ten or one hundred.

The BTS2048-VL optimizes the *Signal to Noise Ratio* by choosing either the *premeasured* or *dynamic* dark signal mode.

By doing a *premeasurement* of the dark signal, the results are used during all following measurements without any additional loss of time (see diagram bottom line). If the integration time changes the offset must be measured again. Setting a static or constant

offset helps shorten measurement response time

When *dynamic* is selected the dark signal is measured every time a measurement is made employing precisely that same integration time (see diagram top line).

As a third option, the dark current subtraction can be disabled.

For complete technical specifications

[BTS2048-VL Spectral Light & Color Meter](#)

Next technical note in series: BTS2048-VL's electronic shutter

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