

**ILT1000 Optometer with
NIST-Traceable, ISO17025 Accredited Calibration
Application Note: Multi-Point Monitoring**

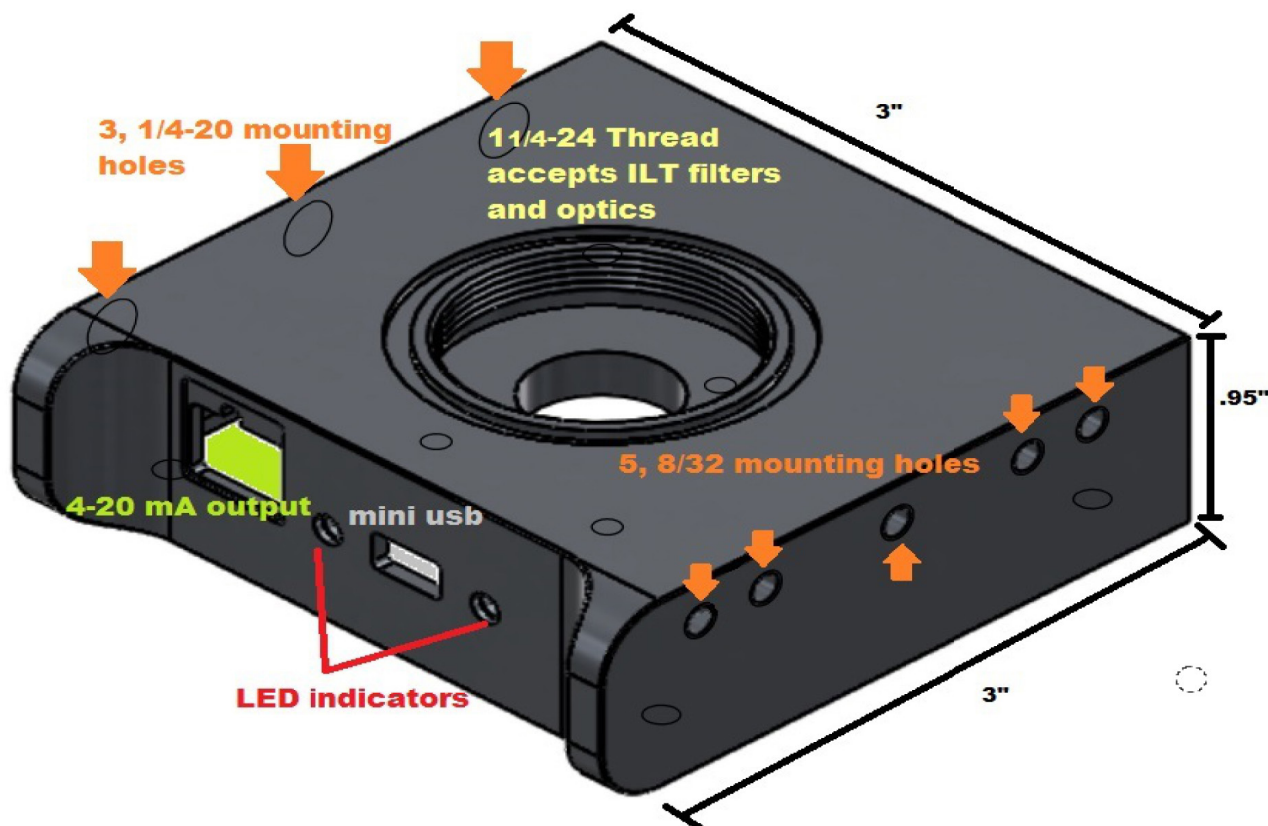


NIST-Traceable, Multi-Point Monitoring **ILT1000**

The ILT1000 was designed with a variety of applications in mind including germicidal effectiveness lamp monitoring, photodegradation UVA/VIS light monitoring, PAR plant growth monitoring, cure process monitoring and more. Set up consists of single unit, fully-integrated radiometer configurations, to multi-point monitoring systems that provide simplicity and precision for complex light detection applications.

International Light Technologies ILT1000 line of fully-integrated radiometers are compatible with most ILT solid state detectors, filters, optics and calibration offering:

- NIST Traceable, ISO17025 Accredited Calibration
- "End-to-End" System Capabilities
- OEM Customization



NIST Traceable / ISO 17025 Accredited Calibration

Although the ILT1000 can be used for relative measurements such as transmission or optical density without calibration, the majority of ILT customers require repeatable, accurate and traceable light measurements. For this reason, ILT offers an extensive array of detector, filter and optic combinations. Each combination can be calibrated for readout in the appropriate empirical units such as, fc, lux, Watts, W/cm², candela, lumens, uMol, Nits, cd/m² etc.

“End-to-End” System Capabilities

The ILT1000, with its modern standards-based interfaces, allows simple remote monitoring of several ILT1000's or several multi-ILT1000 systems. Software collection and monitoring via USB or the 4-20 mA output eliminates the need for visual/manual inspection. This facilitates system designers to build continuous monitoring and analytics into their products.

The low profile housing with 8 standard size mounting ports allows for easy installation, mounting and fixturing on light rails or optical systems. The internal battery allows storage of calibration factors and maintains accurate time with a built in real time clock. The ILT1000 provides free DataLight II software that can be used as-is to provide seamless monitoring and reporting capability. Alternatively, the code can be modified, by ILT or the system integrator, to provide additional, custom functionality. Programmers may write their own code using the Command line interface sent over a serial-port, within their PLC, or code can be written using Labview.

Figure 1 below is an example of how a multi-point ILT1000 system can be assembled. This is as simple as it looks, yet includes:

- 6 decades of light detection linearity
- Continuous monitoring via Windows server, laptop or tablet
- Time-based light-level recording and reporting

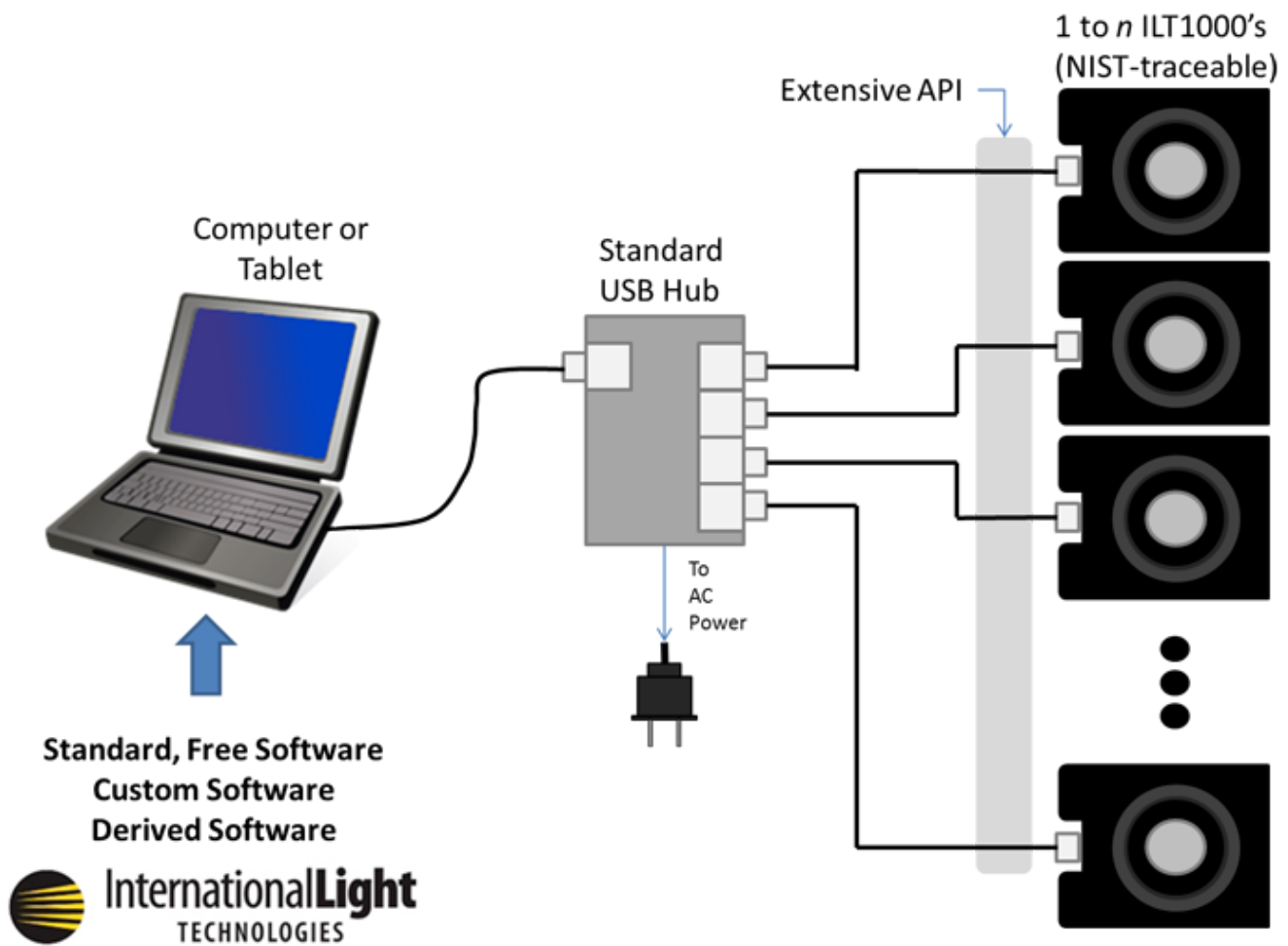


Figure 1. Simple Multi-Point ILT1000 Configuration.

Another configuration (see Figure 2) involves the use of wireless technology. Because the system is completely standards based, applying Ethernet and wireless Ethernet technology is achieved with off-the-shelf products. This provides additional flexibility, including remote monitoring from a portable tablet (supported on Windows today via Windows 8).

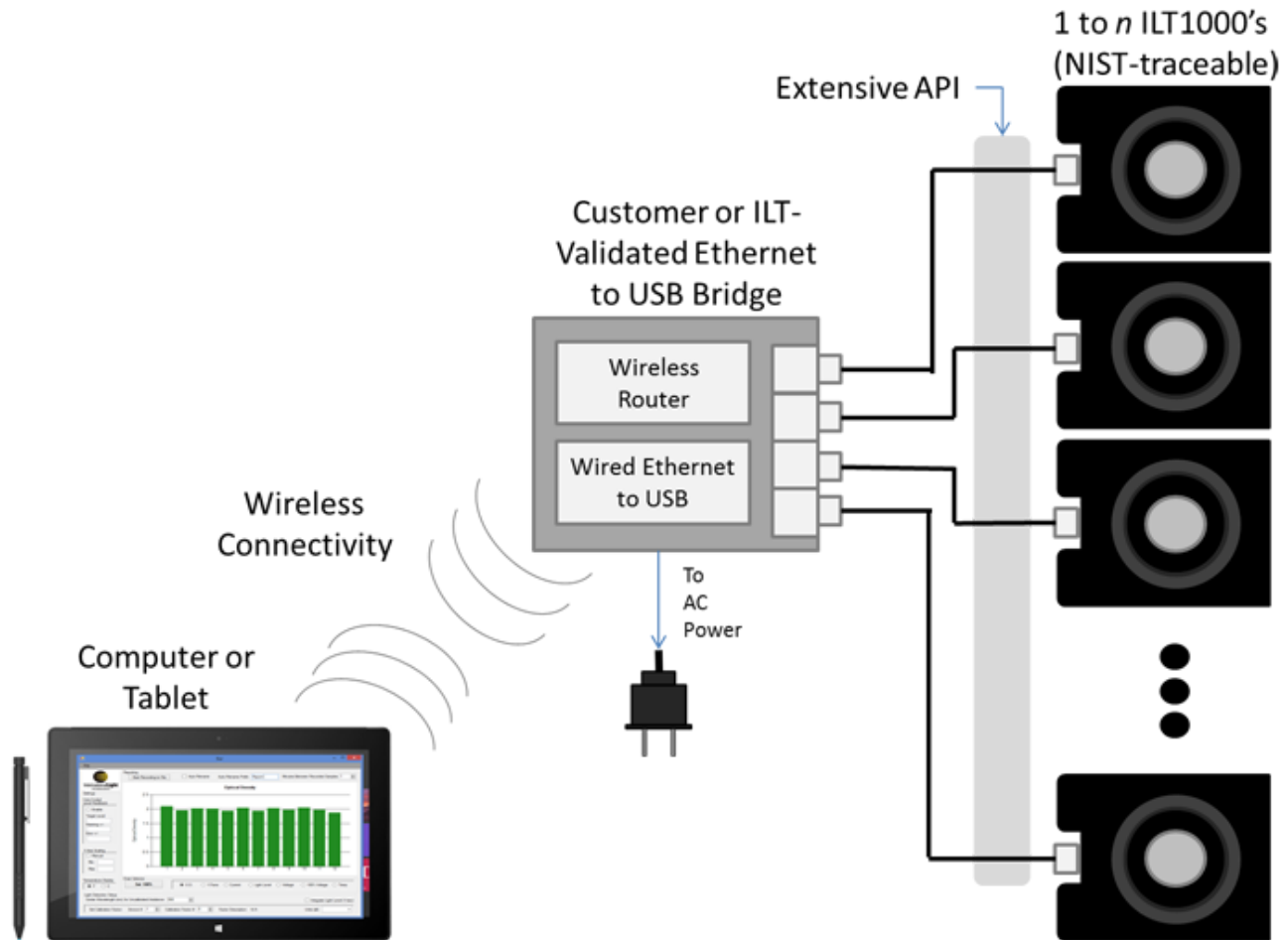


Figure 2. Wireless Monitoring of Multi-Point ILT1000 System.

Integration into Existing PLC-Based Systems

The ILT1000 Radiometer supports a programmable 4-20mA output for integration with existing PLC designs. This allows the single- or multi-point monitoring system to be connected with a PLC, which in turn can be integrated with an active monitoring system. The ILT1000 4-20mA output can be configured for logarithmic or linear output with programmable minimum and maximum light-levels corresponding to 4mA and 20mA outputs. The device also supports a “midpoint” setting that automatically sets the middle of the current loop output (12mA) to the existing light level. Pictured below is an overview of the 4-20mA output integration with a PLC.

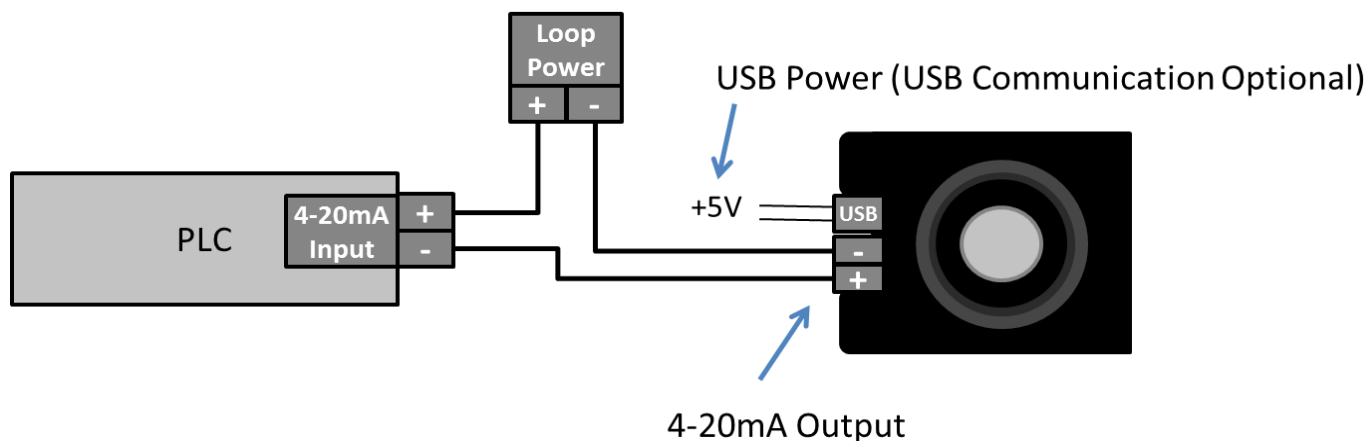


Figure 3. Integration Into Existing PLC-Based Systems

OEM Customization Available

The ILT1000 system, with DataLight II software, is easily extensible for OEM customization. This can be performed by the system integrator, a 3rd-party, or by International Light Technologies. Examples might include custom branding, custom user-defined options, and custom reports. Figure 4 is an example, something that can be achieved fairly easily, to send an email alert upon detecting a low light level within an enclosed system.

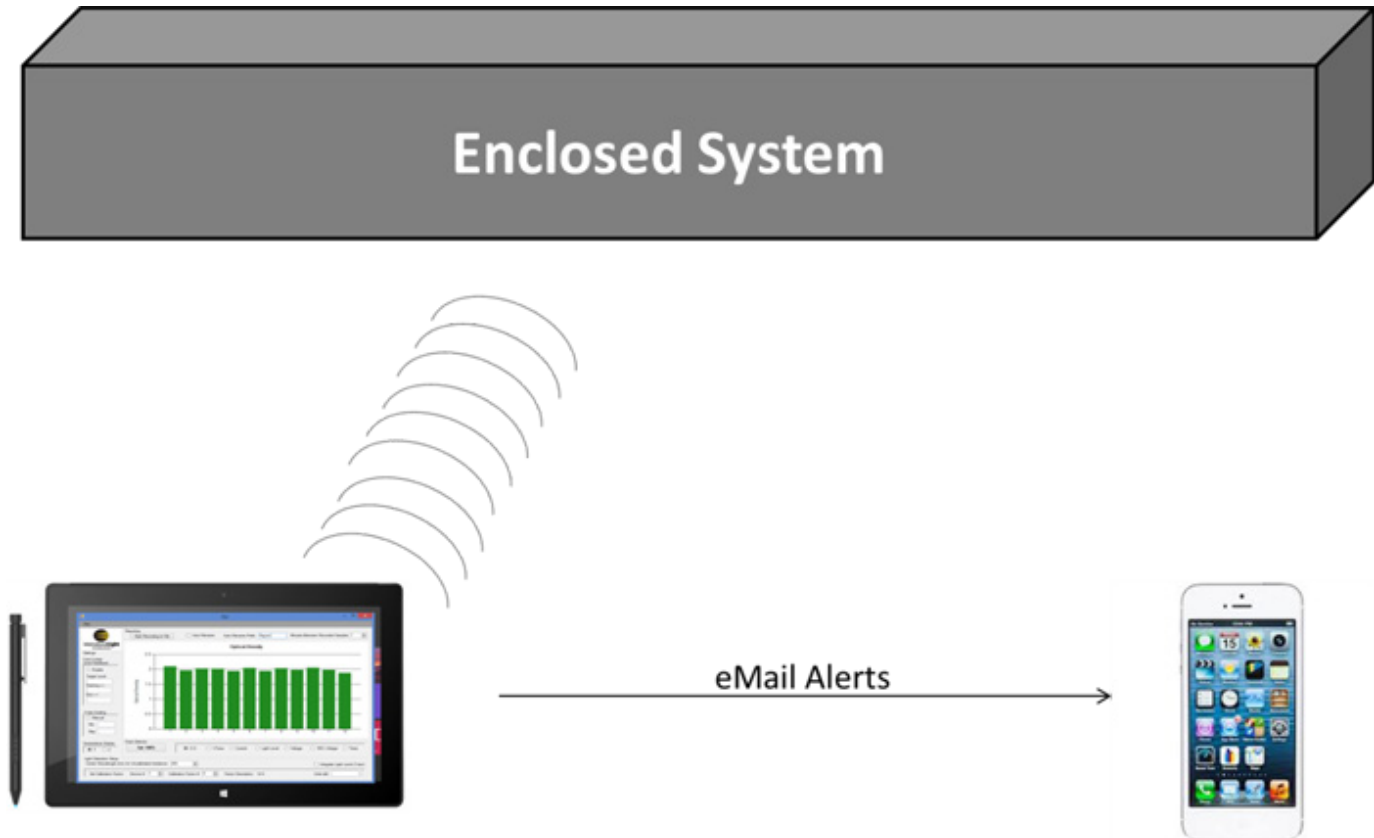


Figure 4 Simple extension to provide email alerts.