RVT**100**

radiation/vacuum tolerant video imaging

RADIATION
Tolerant

VACUUM
Compatible

Machine Vision CMOS Camera

Spectral Instruments Inc.

Continuing our commitment to development and production of high performance professional imaging systems, Spectral Instruments is pleased to introduce a new camera platform, the RVT100, which has been expressly designed to satisfy the need for a robust machine vision CMOS camera.

The conceptual imaging platform of the RVT100 is based upon prior Spectral Instruments' scientific cameras. This new camera is designed particularly for critical monitoring in harsh environments. The camera embodies high performance in a compact, ruggedized package. The basic RVT Series accommodates sensors in a number of formats, monochrome or color, micro lenses or no micro lenses, standard epitaxy or thick epitaxy, which improves the quantum efficiency in near IR wavelengths.

With a CMOSIS 2 MP sensor installed, the RVT100 offers moderate frame rates (to 20 frames per second at full resolution), with low readout noise and resistance to radiation damage from high energy particles and photons in a compact package. Available coatings extend the sensitivity into near UV regions of the spectrum. The RVT100 also supports the larger CMV4000 4 MP sensor at lower frame rates.

In addition to radiation tolerance, vacuum operational compatibility has been designed into the camera. The design minimizes the power consumed and includes the ability to reduce the sensor and electronics temperature by connecting to a suitable thermal sink within the experimental chamber.

The RVT100 camera platform utilizes all of the SI support facilities: high speed fiber optic connection, direct DC power input and software support through SI Image SGL. The sensor's global shutter readout provides short frame time imaging with optimal frame integrity.

Combining the innate insensitivity to radiation damage of these CMOS sensors with camera readout components selected for resistance to damaging radiation, the RVT100 is an excellent imaging platform for monitoring in high radiation application environments to 50 kRad total ionizing dose (TID).

The camera system is comprised of the radiation tolerant and vacuum compatible camera head and a separate non-tolerant and non-compatible HTTP server with an arbitrarily long (up to 500 meters) fiber optic connection between the two.

Utilizing Gigabit Ethernet control and data transport combined with a new HTTP server, communication with this camera is an easy extension of existing SI Image software and, in development, with "GigE Vision" software applications.