

Lumenera Camera Analyzes the Brilliance, Fire and Sparkle of Diamonds

Global leader in diamond analyses, GemEx, chose Lumenera's Lu130 camera for use in the BrillianceScope Analyzer. More than 200 BrillianceScopes are deployed around the world and over 2 million diamonds have been evaluated by the Lu130 camera.

GemEx Selects Lumenera to Determine Diamond Brilliance, Fire and Sparkle of Diamonds

GemEx is a global leader in diamond Brilliance, Fire and Sparkle certification and has founded the concept of scientifically measuring the Light Performance® of diamonds. Using an imaging spectrophotometer, called the BrillianceScope® Analyzer, GemEx is able to capture an image of a diamond from 6 different lighting angles.

The images generated by the BrillianceScope are evaluated by the amount of bright white light (Brilliance) and bright color light (Fire) that is returned to the eye. The instrument also analyzes how these lights change when the diamond is moved to determine scintillation (Sparkle). These measurements are compared with thousands of other diamonds to determine rank and performance and results are compiled in the GemEx Light Performance® Report.

More than 200 BrillianceScopes are deployed around the world and over 2 million diamonds have been evaluated and sold with GemEx Light Performance Reports.

Lumenera Provides GemEx with a Reliable and Easy-to-Use Imaging Solution

BrillianceScope instruments are placed in diamond cutting factories all over the world. The diamonds are first scanned, and then the data is sent to GemEx via the Internet. GemEx verifies the reliability of the scan, checking for cleanness, correct operation, calibration etc. and then issues a report that goes is included with the diamond when it is sold to the consumer.

GemEx required a camera with fast frame rates and an easy-to-use interface in the BrillianceScope instrument. They selected Lumenera's Lu130 industrial camera with a USB 2.0 digital interface. The monochrome



GemEx uses Lumenera's Lu130 camera for analyzing diamonds

Highlights

- GemEx is the global leader in diamond Brilliance, Fire and Sparkle certification using The BrillianceScope® Analyzer.
- GemEx required a camera with fast frame rates and an easy-to-use interface in the BrillianceScope®. They selected Lumenera's Lu130 industrial camera with USB 2.0 digital interface.
- The Lu130 provided the small form factor and superior camera performance needed to produce clear images of diamonds in challenging lighting conditions.
- Images generated by the BrillianceScope® are evaluated by amount of bright white light (Brilliance), bright color light (Fire) and scintillation (Sparkle) that is returned to the eye.



camera is mounted behind a lens and an imaging band-pass filter. Multiple images at multiple wavelengths are captured, and then reconstructed into color images.

The BrillianceScope is used in many different lighting environments. This requires a sensitive camera, in a small form factor, that is able to produce clear images in challenging conditions. The 1.4 megapixel Lu130 has performed exceptionally well in all BrillianceScope installations.

Prior to Lumenera's Lu130 camera, GemEx used a digital camera that required ISA slots to connect with the computer. As ISA slots are becoming obsolete they chose to switch to the universally accepted USB interface. If GemEx did not switch to USB they would have been forced to build custom computers at a greater cost with limited capabilities.

By choosing Lumenera's USB 2.0 multi-megapixel cameras, GemEx could easily integrate the cameras into BrillianceScope and benefit from reliable, fast, and cost effective cameras with low noise.

GemEx Benefits from the Lu130's Ease of Integration and Superior Camera Performance

GemEx uses the images captured by Lumenera's camera, along with bar graphs to show the consumer how their diamond compares to all others in the world. These images are used on every GemEx report seen by diamond buying consumers all over the world.

"The Lu130 has been consistently reliable in some very challenging environments," says Randall Wagner, CEO/Founder GemEx Systems. "The BrillianceScope instruments are placed in many locations that have varying environments, lighting, and power conditions and Lumenera's cameras have always performed exceptionally well. When issues were suspected, the staff at Lumenera were quick to respond and helpful in solving all issues."

The Lu130 provided GemEx with the ease of integration and superior camera performance needed for the BrillianceScope to successfully analyze diamond brilliance, fire and sparkle. Subsequently, helpful technical and sales support has maintained GemEx's satisfaction and continued business.



GemEx's Diamond Light Performance Certificate

About Lumenera

Lumenera Corporation, a division of Roper Industries, headquartered in Ottawa, Canada, is a leading developer and manufacturer of high performance digital cameras and custom imaging solutions. Lumenera cameras are used worldwide in a diverse range of industrial, scientific and security applications.

Lumenera solutions provide unique combinations of speed, resolution and sensitivity in order to satisfy the most demanding digital imaging requirements. Lumenera customers achieve the benefit of superior price to performance ratios and faster time to market with the company's commitment to high quality, cost effective product solutions.

For further information about Lumenera, please visit www.lumenera.com or call 613-736-4077. To receive Lumenera press releases as they are issued, contact us at marketing@lumenera.com.

