

# Lumenera's Industrial USB 3.0 Camera Used by Amateur Astronomer to Create High Resolution, Complete Lunar Mosaic

## New Camera Technologies Allow Spectacular Progress for Amateur Astronomers in the Fields of Lunar and Planetary Imaging

Albéric de Bonnevie is an amateur astrophotographer based in France. Featured to the right, is a stunning mosaic of the moon, which he captured in February 2013 using an Lt425-NIR USB 3.0 Lumenera camera.

Lumenera's Lt425 was specifically designed with both amateur and professional photographers in mind, featuring, low noise and extremely fast frame rates with reliable delivery of images. The USB 3.0 digital interface ensures a simple plug-and-play installation, and one standard cable minimizes equipment clutter.

## Lumenera's High-Sensitivity, High-Resolution USB 3.0 Camera Used to Create Lunar Mosaic

Mr. de Bonnevie's goal was to find a camera with a sensor large enough to create a high resolution, seamless single lunar mosaic, coupled with the technology to transfer such large amounts of data from his camera. He chose Lumenera's Lt425-NIR camera, which at the time was the only camera on the market that met his imaging needs by combining a USB 3.0 interface, a high-speed global shutter, and a NIR CMOS sensor all in one package.

To achieve the lunar mosaic, Mr. de Bonnevie used Lumenera's Lt425-NIR 4MP camera, and a Newton Orion Optics 300/1600 telescope on a Skywatcher EQ-6 Mount. The camera was used with a 3x Barlow lens, and red filter which included IR/UV block coating to prevent glare in the night time conditions.



### Highlights

- Lumenera's Lt425-NIR USB 3.0 camera was used to capture 64,000 images of the moon.
- 14,500 individual images were methodically pieced together to create a seamless single mosaic.
- The Lt425-NIR camera was used with a red filter which included IR/UV block coating to prevent glare in the night time conditions.



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Mr. de Bonnevie captured 2,800 images in 23 fields of view, which resulted in 64,400 individual images of the moon. Each image was then manually sorted by eye, to identify which ones should be meticulously pieced together with software to create the large mosaic. "With a large mosaic you need to find the most uniform fields and align the fields of view as best you can. Although this image is not perfect, it is one of the nicest mosaics I've obtained to date with any camera," said Mr. de Bonnevie.

### Lumenera's Lt425 USB 3.0 Camera

Lumenera's Lt425 is the first of an exciting new family of USB 3.0 high performance cameras based on the industry leading CMOSIS CMV2000 and CMV4000 global shutter sensors. The incredibly fast USB 3.0 interface, combined with these two CMOS sensors, has resulted in a high sensitivity, high-resolution camera series ideal for capturing bright celestial objects such as the sun, or the moon as featured in the stunning mosaic provided by Albéric de Bonnevie.

#### About Lumenera

Lumenera Corporation, a division of Roper Technologies, 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](http://www.lumenera.com) or call 613-736-4077.



#### Camera Highlights

- Very high frame rates up to 90 fps at full resolution
- Blur-free global shutter CMOS sensor
- 2 and 4 megapixel CMOSIS color, mono, NIR solutions
- Built-in frame buffering
- C-mount

