

Near-infrared wavelengths may be used for separating images into surface texture and pure color information.

VideometerLine Multispectral

Multispectral vision for in-line quality inspection

VideometerLine is a vision-based system designed for accurate and reproducible measurement of visual quality on the production line. VideometerLine systems are customized according to the application, integrating illumination, camera, and computer technology with advanced image analysis and statistics. The technology is particularly useful for quantitative measurements of visual or chemical properties of surfaces.

Employing light emitting diode (LED) technology, the illumination of the VideometerLine can be optimized for a given application and is not restricted to the wavelengths spanned by traditional RGB technology. VideometerLine is accurately calibrated to provide high-resolution multispectral images.

VideometerLine features the following advantages over standard color imaging:

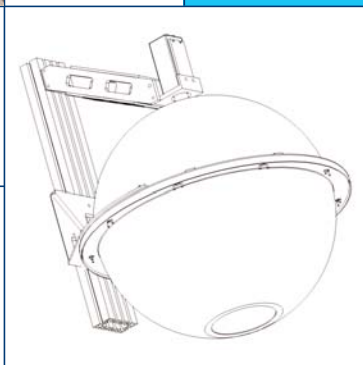
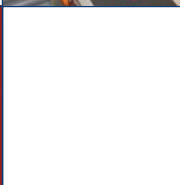
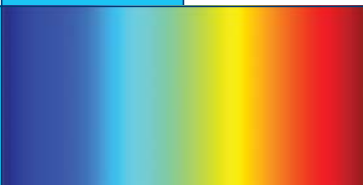
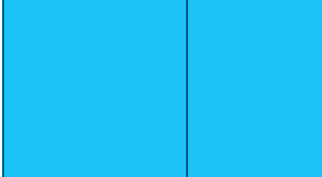
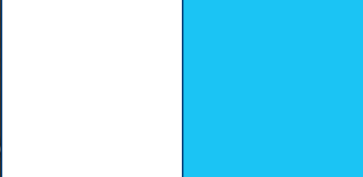
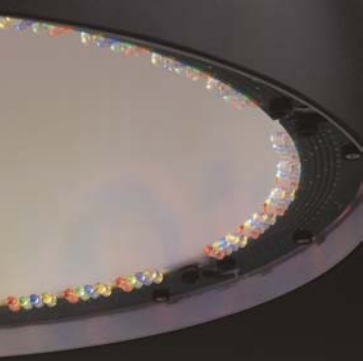
- The response of the object in up to 10 spectral bands may be determined in every pixel of the high-resolution image.
- Multiple software-controlled illumination schemes customized for different product types.
- Accurate spectral and spatial calibrations ensuring high reproducibility of the acquired images.
- Near-infrared (NIR) information can be obtained, producing images mainly sensitive to surface structures and composition, rather than color information.
- Ultraviolet (UV) reflectance and fluorescence information can be obtained.
- A more accurate and flexible color measurement, compared to standard RGB technology, is obtained.
- Individual adjustment of the light intensity for each waveband, resulting in an improved signal-to-noise ratio.
- Automatic adjustment of dynamic range, depending on the application.
- Increased lifetime of the light sources (in the 100,000 hour range), i.e. the need for maintenance is practically eliminated.
- Increased stability due to less heating from LEDs compared to traditional light sources, reducing instrumental drift to a minimum.
- Robust image acquisition and feature extraction improving the quality of the image and the features used in the subsequent data analysis.

Advanced image processing tools allows for identification of image features useful for separating various properties of the object, such as fuzz on a textile surface.

Videometer



www.videometer.com



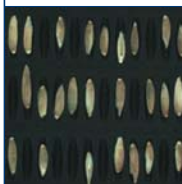
VideometerLine is customized with a selected combination of LEDs optimized for the application. This makes VideometerLine a valuable tool for quality control based on visual inspection.

VideometerLine

Technical Specifications

Light sources	Light emitting diodes (LED) controlled by a strobe unit ensuring stable color and intensity.
Spectral resolution	The equipment is customized for a given application to contain from 1 to 10 selected wavelengths in the range from 370 to 1000 nm.
Spatial resolution	1380×1035 pixels (typical configuration). Customized according to the application.
Intensity resolution	Adjustable according to the application.
Optics	Customized according to the required spatial resolution and quality using C-mount lenses. Typical field of views range from 15 mm × 22 mm to 150 mm (circular) with the corresponding pixel sizes ranging from 0.015 mm to 0.1 mm.
Object size	Model 160: max. diameter 50 mm Model 360: max. diameter 100 mm Model 540: max. diameter 150 mm The equipment can be customized to handle other object sizes.
Speed	Depends on the actual set-up (e.g. number of wavebands, required signal-to-noise ratio, and object transportation/handling). The standard configuration makes up to 2800 measurements/hour. Higher speeds can be obtained in customized systems.
Dimensions	Model 160: 240 mm (h) × 230 mm (w) × 245 mm (d) Model 360: 450 mm (h) × 420 mm (w) × 440 mm (d) Model 540: 850 mm (h) × 625 mm (w) × 640 mm (d)
Power supply	85-264 VAC, 47-63 Hz
Power consumption	Max. 200 VA
Ambient temperature	0-40 °C
Ambient humidity	20-80 % relative humidity (non-condensing)
Software	Windows 2000 operating system or higher. Control software integrating image acquisition, image processing, image statistics tools, as well as a customized interface to the production line.

Videometer A/S develops vision systems for automated visual inspection. Both in-line and laboratory systems including dedicated software is developed.



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