



Electro Optical Components, Inc.

5464 Skylane Boulevard, Suite D, Santa Rosa, CA 95403

Toll Free: 855-EOC-6300

www.eoc-inc.com | info@eoc-inc.com



SpectralEye NIR 1.7 Belt Speed and Width Performance

The maximum frame rate of the inno-spec SpectralEye NIR 17 System is 330Hz. The illumination has to be bright enough to work with maximum frame rate (depends on slit size, distance from light to belt, ... - it is possible).

The imaged line for a test setup they use with about 1m distance from the belt is around 1.2m long and 8mm wide is:

- 8mm in scanning direction for 80 μ m slit
- ~5mm for 50 μ m slit for a belt width of 750mm)

The width of the imaged line also depends on the entrance lens and distance from belt to spectral camera system.

As a real world example you can have a look at a [waste sorting machine](#) from RTT Steinert:

- The belt width is 750mm and for the NIR they define the fraction sizes to 5mm.
- The standard belt speed is 3m/sec.
- For a belt that has the double width inno-spec suggest the half speed of this system, 1.5m/sec.

The 5mm for a belt width of 1.5m is the theoretical limit, roughly the 1500mm / 300Pixels = 5mm per pixel. This application uses 2 pixels to have a stable signal for the classification of materials. The Region of Interest of the camera was also reduced to get higher frame rates. The ROI can be reduced in spatial in spectral domain. You can get around the double frame rate if you reduce the sensor to the half ROI. A value between the full ROI and half ROI should work fine.