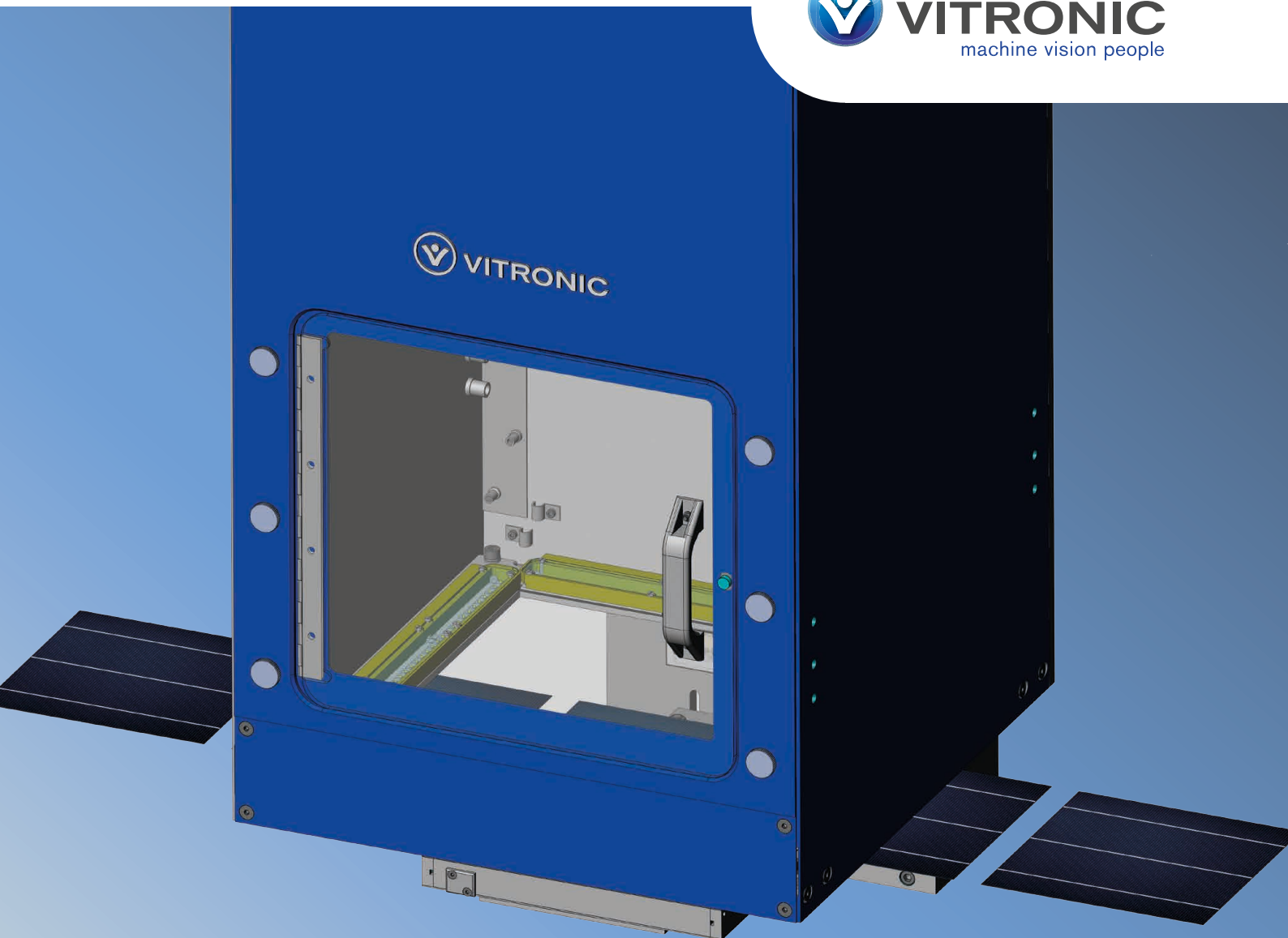




VITRONIC
machine vision people



VINSPEC^{solar} CTS – Front Inspector For Retrofit in Cell-Tester/Sorter

The VITRONIC Retrofit Inspector is a new variant of the VINSPEC^{solar} front side inspection, designed for integration into already existing cell testers.

It is the ultimate solution to achieve highest detection and classification performance in equipment where transport mechanics and data communications are not easily adaptable for line-scanning but high resolution and high performance are mandatory.

It is the answer to the new requirements for today's and future high efficiency solar cell production processes.

The VITRONIC Retrofit Inspector utilizes an extremely high brightness dynamic range, combined with a high resolution for detection of all relevant surface defects in low reflection coatings (mono and multi crystalline) as well as smallest interrupts and deviations in highly reflective print (metallization) with narrow grid (fingers).

Retrofit into standard equipment such as Baccini Walking Beam, Softline, ASYS, Chroma, J&R, JRT and many more.

Retrofit Inspector – Highest Performance in just one System

- » 26 Mpixel color matrix camera
(5,120 x 5,120 pixel, 31 µm pixel resolution)
- » Diffuse wide spectrum LED illumination
- » Modified classic housing

Inspection Performance

- » Print alignment, geometry $\pm 2 \mu\text{m}^1$
- » Finger breaks $\geq 50 \mu\text{m}$
- » Finger widths $\pm 1 \mu\text{m}$
- » Finger knots $+50 \mu\text{m}$ width, length $\geq 0.2 \text{ mm}$
- » Busbar width $\pm 3 \mu\text{m}$
- » Paste marks $\geq 50 \mu\text{m}$
- » Corner and edge breakages $\geq 150 \mu\text{m}$
- » Missing print $\geq 60 \mu\text{m}$
- » Surface defects $\geq 60 \mu\text{m}$
- » Color classification
(Accuracy equals 1 nm variation of coating thickness)
 - Color contrast
 - Inhomogeneity
 - Surface flaws, flakes
 - Center and rim differentiated

Retrofit Inspector at a Glance

- » 31 µm resolution for print inspection
- » 31 µm resolution for True color inspection,
no color aliasing, no LED color deficiencies
- » Extremely high brightness dynamic range
- » Throughput up to 4,000 wafers per hour
- » Robust and reliable with a small footprint
- » Easy integration into existing equipment
- » Easy layout, recipe, parameter and
tolerance set-up
- » Compatible with all other VINSPEC^{solar} systems
- » Standstill version
- » Fits all tester/sorters



¹ proven σ -value, determined inline