



Acuros[®] CQD[®] SWIR Camera Applications Note

SWIR Application Note - 002

Inspection of Edge Cracks on Semiconductor Die Edge

Inspecting for damage at edge of silicon chip

Backside chipping

~ 5 μ m wide x hundreds of μ m long crack

a.

500 μ m

The Acuros[®] CQD[®] 1920

SWIR Camera (at right)

includes: 1920 x 1080, 2.1Mp resolution, 60 fps frame rate, 70 dB dynamic range, 15micron pixel pitch, 400-1700 nm spectral range, GigE Vision or USB3 Vision interface. Acuros CQD quantum dot sensor comes equipped with single-stage thermo-electric cooler.



Application Details:

Images of (a.) semiconductor die edges revealing 5-10 μ m crack widths and abrasion from dicing tool. All images captured at 500 μ s exposure time. Commercially available SWIR LED backlight looking through edge of 23mm of silicon (23 x 35 mm). Thickness of silicon is 650 μ m. Images captured via SWIR Vision Systems Acuros[®] CQD[®] 1920 SWIR Camera with TEC, LED SWIR backlight and Navitar Resolv4K zoom lens system.