OVERVIEW

Varex Imaging XRD 3025 is the next generation of Varex Imaging’s XRD family of Flat Panel X-ray Detectors (FPDs). The XRD 3025 series provides a superior 100 \( \mu \)m pixel resolution and frame rates up to 20 frames per second. Varex Imaging XRD 3025 supports a broad X-ray energy range with two available models, G22 for 20 – 225 kV and G45 for 20 – 450 kV energy range. XRD 3025 is available with several CsI or Gadox scintillator options. Rapid system integration is accomplished via Gigabit Ethernet data communication and integrated trigger and X-ray synchronization circuitry. A comprehensive software library for image acquisition and processing is also provided.

The wide energy range, variable frame rates and scintillator options allow the Varex Imaging XRD 3025 to meet the component requirements of industrial non-destructive testing, as well as life and physical science applications.

FEATURES AND BENEFITS

- 100 \( \mu \)m pixel pitch
- 3008 x 2512 pixel matrix
- 65,536 grey levels (16-bit ADC)
- Ultra high sensitivity
- 5.5 fps (1x1), 11 fps (2x2), 20 fps (4x4)
- Suitable for a wide range of X-ray energies
- Selectable gain setting
- Gigabit Ethernet interface

APPLICATIONS

- Industrial non-destructive testing
- 3D Cone Beam CT
- Metrology
- Scientific applications
- Industrial film replacement

www.vareximaging.com
**Technical Specifications**

**SENSOR**
Panel .................................. Single substrate amorphous silicon active TFT-diode array  
Scintillator ............................. Direct deposition CsI:Tl or various Gd$_2$O$_2$:Tb (Gadox)  
Pixel Matrix .......................... $3008 \times 2512$ @ $100 \mu$m pixel pitch  
Total Area ............................. $300 \times 250$ mm$^2$

**ELECTRONICS**
Charge Amplifier ...................... Low noise ASICs with six user selectable gain settings  
ADC ...................................... 16-bit  
Read-out Modes  
<table>
<thead>
<tr>
<th>Matrix $\times$ Pixel ($\mu$m$^2$)</th>
<th>fps</th>
</tr>
</thead>
<tbody>
<tr>
<td>$3008 \times 2512$</td>
<td>5.5</td>
</tr>
<tr>
<td>$1504 \times 1256$</td>
<td>11</td>
</tr>
<tr>
<td>$752 \times 628$</td>
<td>20</td>
</tr>
</tbody>
</table>

**HOUSING**
Length $\times$ Width              | XRD 3025N-G22  | XRD 3025N-G45  
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$354 \times 304$ mm</td>
<td>$354 \times 304$ mm</td>
<td></td>
</tr>
<tr>
<td>Thickness</td>
<td>34.5 mm</td>
<td>34.5 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>10 kg</td>
<td>16 kg</td>
</tr>
<tr>
<td>Entrance Window</td>
<td>1 mm Al</td>
<td>1 mm Al</td>
</tr>
<tr>
<td>X-ray Shielding</td>
<td>or carbon-fiber</td>
<td>or carbon-fiber</td>
</tr>
</tbody>
</table>

**MECHANICAL CHARACTERISTICS**
(Dimensions in mm)

**COMMUNICATIONS**
Data I/F ................................ Gigabit Ethernet  
X-ray I/F ................................ Integrated Trigger control  
Software ................................ Support for 32 and 64 bit Windows® or Linux® OS

**IMAGING PERFORMANCE**
Typical MTF  
<table>
<thead>
<tr>
<th>cm/mm</th>
<th>CsI</th>
<th>Gadox</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>80%</td>
<td>77%</td>
</tr>
<tr>
<td>3</td>
<td>45%</td>
<td>22%</td>
</tr>
<tr>
<td>5</td>
<td>23%</td>
<td>10%</td>
</tr>
</tbody>
</table>

Dynamic Range  
> 77 dB

Typical Lag  
< 8% 1$^{\text{st}}$ frame

**ENVIRONMENTAL**
Temperature  
0 – 40°C (operating), -10 – 55°C (storage)  
Humidity ................................ 30 – 70% RH (non-condensing)

**POWER**
Supply .................................. 100 - 240 VAC, 50/60 Hz, XRD EPS Power Supply  
Dissipation  
25 W

**REGULATORY**
Regulations ......................... RoHS

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1 Unless otherwise specified, Varex Imaging Flat Panel X-ray Detectors are components intended to be integrated into products by X-ray system manufacturers. System manufacturers are responsible for qualifying and validating their products for their intended uses and meeting all applicable regulatory requirements.

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