

## X 射线相机

### 特点

高分辨率直接荧光体成像  
 帕尔贴制冷  
 超低读出噪声  
 部分读出或像素合并  
 可外触发  
 体积小，功耗低  
 支持 Windows, Linux, macOS 等



### 参数指标

#### Sensors

|                                 | xiRAY11                                  | xiRAY16                                  |
|---------------------------------|------------------------------------------|------------------------------------------|
| CCD Sensor                      | Truesense KAI-11002-AAA-CR-B1            | Truesense KAI-16000-AAA-JR-B1            |
| Resolution                      | 4008 x 2672                              | 4872 x 3248                              |
| Pixel size                      | 9.0 x 9.0 $\mu$ m                        | 7.4 x 7.4 $\mu$ m                        |
| Area size                       | 36 x 24mm, 43mm diagonal                 | 36 x 24mm, 43mm diagonal                 |
| ADC                             | 14Bit                                    | 14Bit                                    |
| Pixel Frequency                 | 24.576MHz and 49.152MHz (HS mode)        | 24.576MHz and 49.152MHz (HS mode)        |
| Refresh rates (full resolution) | 2.1 fps and 3.6 fps in HS mode           | 1.2 fps and 2.5fps in HS mode            |
| Readout noise                   | 10 e                                     | 8 e                                      |
| Dark current                    | 40e/pix/sec @ 12°                        | 18e/pix/sec @ 12°                        |
| Full well capacity              | 60,000 e-                                | 30,000 e-                                |
| Linearity                       | <2% (of full scale) to 95% of full scale | <2% (of full scale) to 95% of full scale |
| Shutter                         | Internal, global, Interline transfer     | Internal, global, Interline transfer     |

#### Fiber optics

|                    |           |                                 |                      |
|--------------------|-----------|---------------------------------|----------------------|
| Magnification      | 1:1       | Fiber center to center distance | 6 $\mu$ m            |
| Field of view      | 36 x 24mm | FO plate thickness              | 5mm                  |
| Radiation hardened | yes       | Extra-Mural Absorption          | Enhanced Statistical |

#### Scintillator

|                      |                          |           |             |
|----------------------|--------------------------|-----------|-------------|
| Phosphor composition | P43, Gd2O2S:Tb           | Thickness | ~22 $\mu$ m |
| Energy range         | Min: 5 KeV, Max: 100 KeV |           |             |

#### Cooling system

|             |                    |                        |                        |
|-------------|--------------------|------------------------|------------------------|
| Type        | TEC Peltier cooler | Dissipation            | Heatsink, optional fan |
| Temperature | +12°C              | Power supply / Control | Internal               |

#### Physical

|                  |                |                       |            |
|------------------|----------------|-----------------------|------------|
| Camera Interface | IEEE1394A      | Power consumption     | 6W max     |
| Dimensions       | 63 x 63 x 63mm | Operating Temperature | -5...150°C |

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