

DR7800S – Portable Battery Powered Digital Radiography System

CIT Part Code: CIT-DR7800S

Nondestructive Examination (NDE/NDT) of products based upon radiographic inspection technique can be inspected by using Digital Radiography Technology. CIT's DR7800S System is based upon using **Two Dimensional CMOS Photodiode array Sensor Module, Portable X-Ray Generator Unit (160kV) and High Performance NDT Workstation.** The sensor module is slim, lightweight and housed in a rugged stainless steel package mounted on a detachable cable enabling easy installation into tight spaces or difficult to reach spaces. The system can be installed in your NDT X-Ray radiograph facility, laboratory or used for Site Radiography or alternatively CIT can supply Radiation Bay with the above system.



Figure1 – X-Ray Generator



Figure2 – CMOS Sensor Module



Figure3 – Portable Computer System

Salient Features

Radiography Sources

- YTB Gamma Source
- Up to 160kV X-Ray Source
- Pulse / CP / Half wave sets

Radiation Detector (CMOS Sensor Module)

- 100 x 100mm Active image Area
- 12 bit or 14 bit (16,384 Grey levels)
- 22.5µm, 48µm and 96µm resolution options
- Sensor module weighs 1kg or less
- Supports X-ray energies from 5keV to 160kV
- Choice from 3 different electronic modules: Digital frame grabber, USB or Ethernet interface

Radiography NDT Workstation

- 15" Diagonal Screen
- 1920 x 1080 Resolution
- Colour / High Brightness
- Standalone / networked

Applications

- Carbon Composite Inspection
- Inspection of Foils
- Casting Inspection
- Weld Inspection

Market Sectors

- Petrochemical Refinery
- Power stations
- Aerospace Industry
- Automotive Industry
- PCB / Electronics
- Foreign Bodies
- Forensic
- EOD / EID

Sensor is manufactured by Rad-ikon and distributed by CIT

Technical Specifications

Radiation Sources

- YTB Gamma Source
- Up to 160kV X-Ray Source
- Pulse / CP / Half wave sets

Inspection Capability

- Volumetric defects in welds and casting of different material
- Magnesium, Aluminum, Steel, Inconel, Plastics, Composites
- Material characterisation, density analysis
- Material calibration

Radiation Detector (CMOS Photodiode Sensor Module)

- Two Dimensional CMOS Photodiode Array sensor
- Imaging Area – 100 x 100 mm
- Imager Weight – 1.7 kgs
- Dynamic Range – 12bit -14 bit (16,384 Grey Levels), up to 2.7 frames per second
- Resolution – 22.5µm, 48µm and 96µm (1200 X 1600 pixels)

Optional

- Choice from 3 different electronic modules
- High speed Digital Frame Grabber
 - Microprocessor controlled USB interface
 - Ethernet interface

Model	Pixels	Active Area	Resolution	Energy Range
DR7800S 1	512 x 1024	24.6 x 49.2 mm	48 µm	10 - 50 kV
DR7800S 1 EV	512 x 1024	24.6 x 49.2 mm	48 µm	10 – 160 kV
DR7800S 2	1024 x 1024	49.3 x 49.2 mm	48 µm	10 – 50 kV
DR7800S 2 EV	1024 x 1024	49.3 x 49.2 mm	48 µm	10 – 160 kV
DR7800S 4	2048 x 1024	98.6 x 49.2 mm	48 µm	10 – 50 kV
DR7800S 4 EV	2048 x 1024	98.6 x 49.2 mm	48 µm	10 – 160 kV
DR7800S HR	1200 x 1600	27 x 36 mm	22 µm	10 – 90 kV
DR7800S HR	1200 x 1600	27 x 36 mm	22 µm	Beryllium window for low energy applications
DR7800S 200	1024 x 1000	98.4 x 96.0 mm	96 µm	10 – 50 kV
DR7800S 200 EV	1024 x 1000	98.4 x 96.0 mm	96 µm	10 – 160 kV
DR7800S 200 EV	1024 x 1000	98.4 x 96.0 mm	96 µm	Beryllium window for low energy applications

Radiograph Computer Processor

- Industrial Standard High Performance Computer System
- Intel Core 2 Duo Processor, 4GB DDR3 RAM, 1T HD, BluRay Drive
- Ethernet, Satellite and Modem Connectivity

Radiograph Display Options

- Display type: 15." [approx.]
- Display resolution: 1920 (V) x 1080 (H) pixels
- Pixel pitch: 165 micron (0.165 mm)
- Feature: colour /high brightness

Software

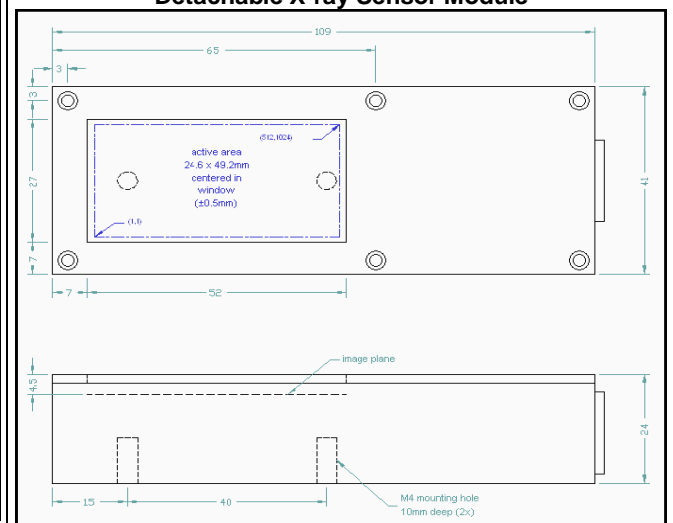
Easy to repeat testing procedures, enhanced diagnosis tools and data storage and query options, user friendly interface.

Environmental

- Temperature Range – Operating 0°C to 50°C (max.) (Ambient) – Storage -25°C to + 85°C
- Humidity – Operating (non-condensing) 10 to 90% Storage (non-condensing) 10 to 90%



Detachable X-ray Sensor Module



Sensor Head