

DR7100 – Industrial Digital Real Time Radiography System

CIT Part Code: CIT-DR7100

Nondestructive Examination (NDE/NDT) of products based upon radiographic inspection technique can be inspected by using Digital Radiography Technology. CIT's DR7100 System is based upon using **Amorphous Silicon Real Time Flat Panel Detector, Portable X-Ray Generator Unit (160kV or 225kV) and High Performance NDT Workstation.** 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. CIT can further supply Advanced Product Manipulator – computer controlled system to assist in automated inspection.



Figure1 – X-Ray Generator



Figure2 – Am-Si Flat Panel Detector



Figure3 – HDTouchSmart System

Salient Features

Radiation Sources	Radiation Detector (Am-Si Flat Panel)	Radiography NDT Workstation
<ul style="list-style-type: none"> • YTB Gamma Source • Se75 Gamma Source • Up to 225kV X-Ray Source • Pulse / CP / Half wave sets 	<ul style="list-style-type: none"> • 130x130mm Active Area • 127 microns • CsI / DRZ+ Scintillation • 10 FPS • 57% Fill Factor • 20kV – 225kV Operational Range (Tungsten Shielding) 	<ul style="list-style-type: none"> • 23" Diagonal Screen • 1920 x 1080 Resolution • 300 nits Brightness • Touch screen • Standalone / networked

Applications	Market Sectors
<ul style="list-style-type: none"> • Carbon Composite Inspection • Inspection of Foils • Casting Inspection • Weld Inspection 	<ul style="list-style-type: none"> • Petrochemical Refinery • Power stations • Aerospace Industry • Automotive Industry • PCB / Electronics • Foreign Bodies • Forensic • EOD / EID

Technical Specifications

Inspection Capability

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

Radiation Detector (Am-Si Flat Panel)

- Amorphous silicon with scintillator type
- Image Area – 13.0 x 13.0 cm (5.12 x 5.12 inch)
- Pixel Pitch - 127 µm
- Pixel Matrix – 1024 x 1024
- Grey Level - 14 bits
- Frame Rate – 10 FPS (1x1) & 30 FPS (2x2)
- Energy Range – 20kV – 225kV (Tungsten Shielding)
- Fill Factor – 57%
- CE0197 and EN606601
- Power Dissipation – 15 watts (max.)
- Power Supply – 100-240 VAC, 47-63 Hz

Regulatory

- U.S. – UL60601-1
- Canada – CSA 22.2 No. 601.1-M90

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
- Windows 7 Home Premium 64bit Edition

Radiograph Display Options

- 23" Full HD Diagonal Wide Screen
- 1920 x 1080 Resolution
- Touch Screen
- 300 nits Brightness

CIT DR7100 – NDT Industrial Digital Radiography Application

- Real Time Radiograph Acquisition, Calibration and Image Capture
- Advanced Radiograph Image Analysis
- Inspector's Measurement Tools – Flaw Gauge, Distance Measurement, Line Profile, Advanced Line Profile
- Automated Report Generation
- Archival of Radiograph Images with full Quality Audit

Other Optional Software Modules

- Corrosion and Condition Management
- Flaw Depth Measurement
- Schema based Inspection
- MISDR (Linking with Excel / SQL Server – Production Data)

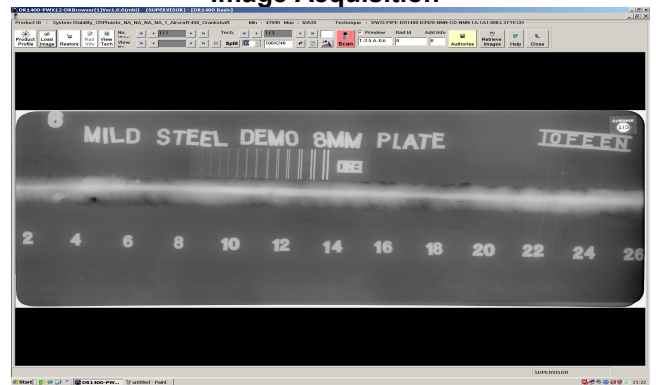
aRTist or Moderato

To simulate the radiographic process and generate the radiographic technique or use for the radiographic training

Environmental

- Temperature Range – Operating 10°C to 35°C (max.)
(Ambient) – Storage -20°C to + 70°C
- Humidity – Operating (non-considering) 10 to 90%
Storage (non-considering) 10 to 90%

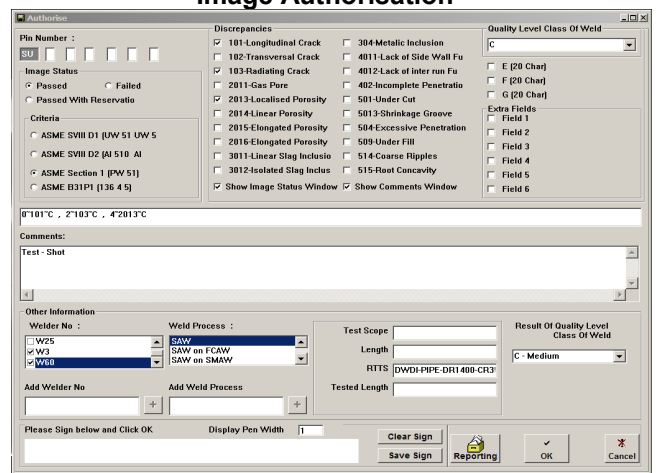
Image Acquisition



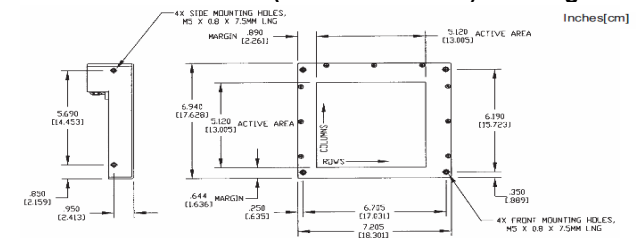
Technique Setup



Image Authorisation



Radiation Detector (Am-Si Flat Panel) Drawings



Physical Dimensions

- Radiation Detector – 18.301(w) x 17.628(h) x 5.588(d) cm
1.68 kg (weight)
- Radiography NDT Workstation – 583 x 126 x 451 mm
11 kg (weight)