



FOP

Digital Radiography

Practice – Case studies



TELEDYNE ICM
Everywhereyoulook™

Abdallah RADY – November 2023

Quick guide

1. Check the **reference** and the **marks** of the parts to be checked.
2. **Visual examination** (note surface defects)
3. **Acquisition** of images & saving
4. Check the **image quality**
 - Check the **grey levels** in the different zones as well as the **normalized signal to noise ratio** by moving the 20x55pixel zone (min to obtain see standard)
 - Check the **spatial resolution** (IQI duplex)
 - Check the **IQI wires visible** after activating the **Teledyne filter**
5. Note the **indications** present on the image & compare them to the **ASTM reference images** (2422 for castings)
6. Note the **position** of the indications on the map - Photo of the part.
7. Complete the **test report**.
8. **Store** the tested part in the part area awaiting sanction.



Case studies 1

CP120B & Go-Scan 1510 XR

CP120B & Go-Scan 1510 XR

Best portable solution to reach Class B (ISO17636-2) with small thicknesses

Equipment

Generator



CP120B

Focal spot: 0,8 mm

Detector



Go-Scan 1510 XR

Resolution: 49,5 μ m

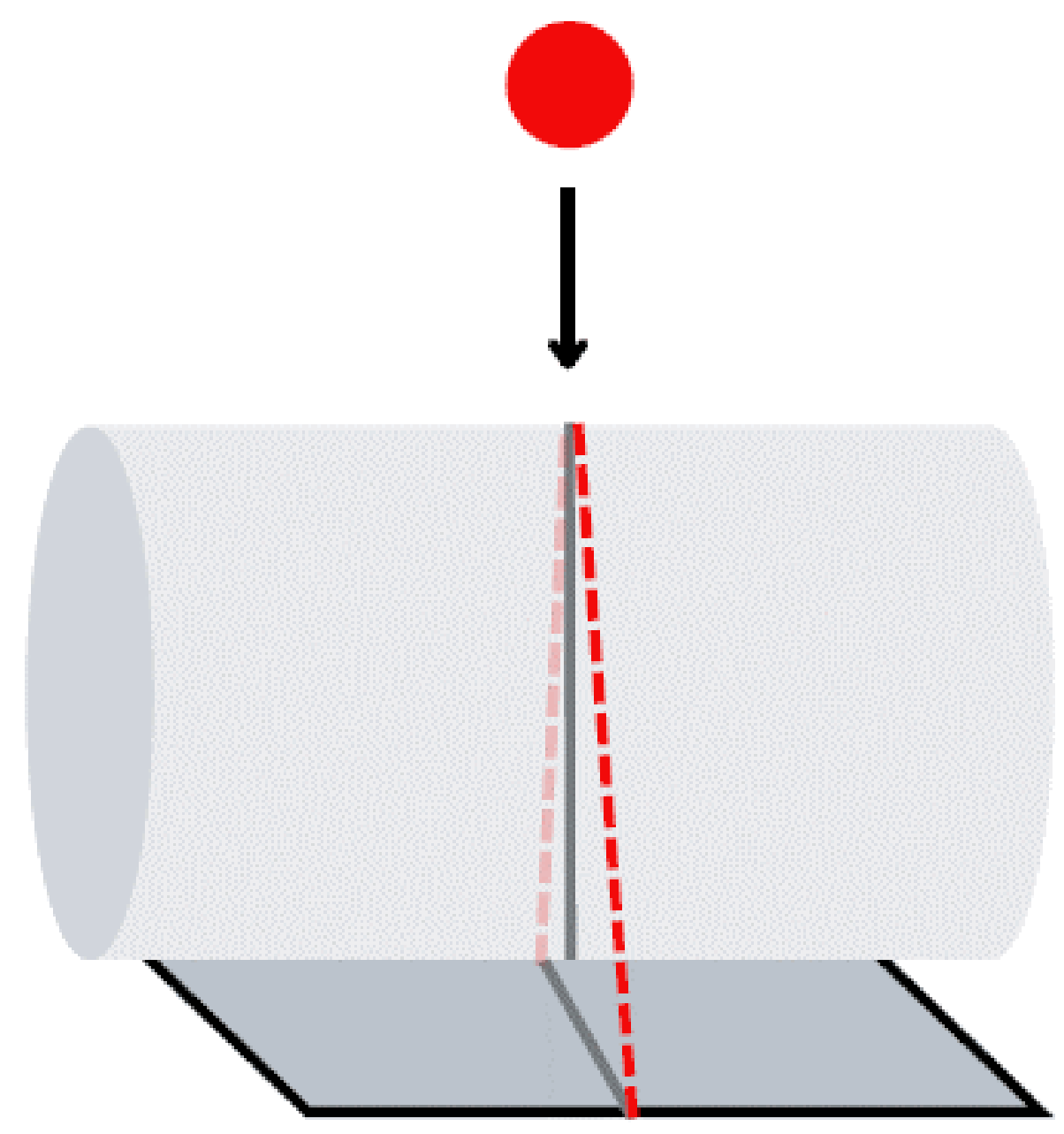
FFD: 300 mm

CP120B & Go-Scan 1510 XR

Best portable solution to reach Class B (ISO17636-2) with small thicknesses

Technique & material

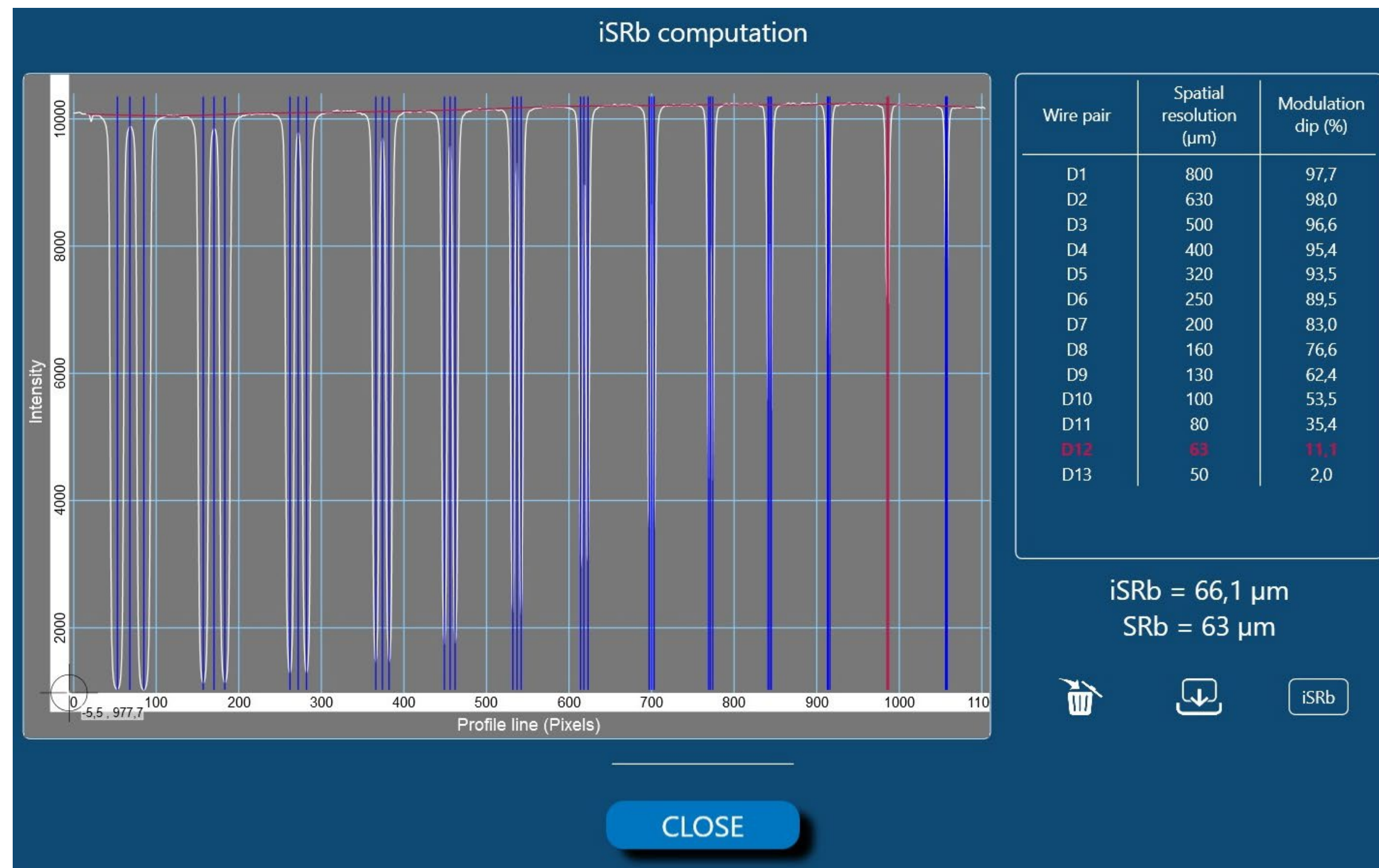
Superimposed technique



- Steel pipe:
- 50 mm (OD)
 - Single wall thickness: 1,5 mm

CP120B & Go-Scan 1510 XR

Best portable solution to reach Class B (ISO17636-2) with small thicknesses



**Class B
validated**

CP120B & Go-Scan 1510 XR

Best portable solution to reach Class B (ISO17636-2) with small thicknesses

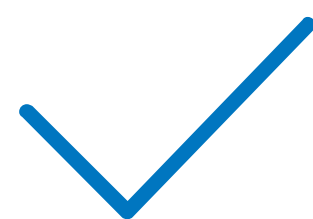
Class B (ISO 17636-2)

Required:

- SRb of 50 μm (D13)
- W17 visible
- SNR : 168*

Achieved:

- SRb of 63 μm (D12)
- W18 visible
- SNR : 353



Class B validated thanks to the compensation principles.

*Requested SNR for class B between 50 & 150 kV is 120 (+40% in HAZ)



Case studies 2

CP225D & Go-Scan 3025

CP225D & Go-Scan 3025

The portable solution for all your NDT applications

Equipment

Generator



CP225D

Focal spot: 3 mm

Detector



Go-Scan 2325

Resolution: 120 μ m

FFD: 700 mm

CP225D & Go-Scan 3025

The portable solution for all your NDT applications

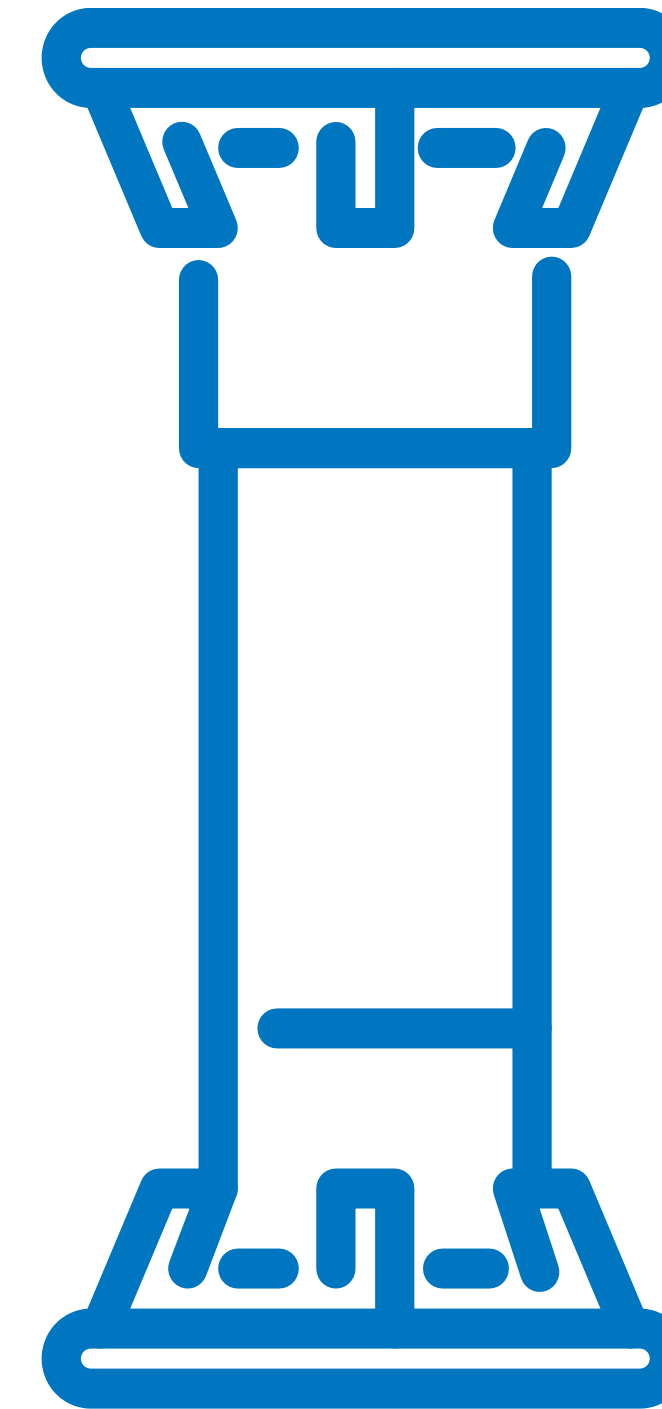
Material & Shooting settings

MATERIAL:

- Steel pipe
- 90 mm (OD)
- Single wall thickness: 6 mm

SHOOTING SETTINGS:

- 225 kV
- 4 mA
- 3.5 sec integration time
- 5 frames

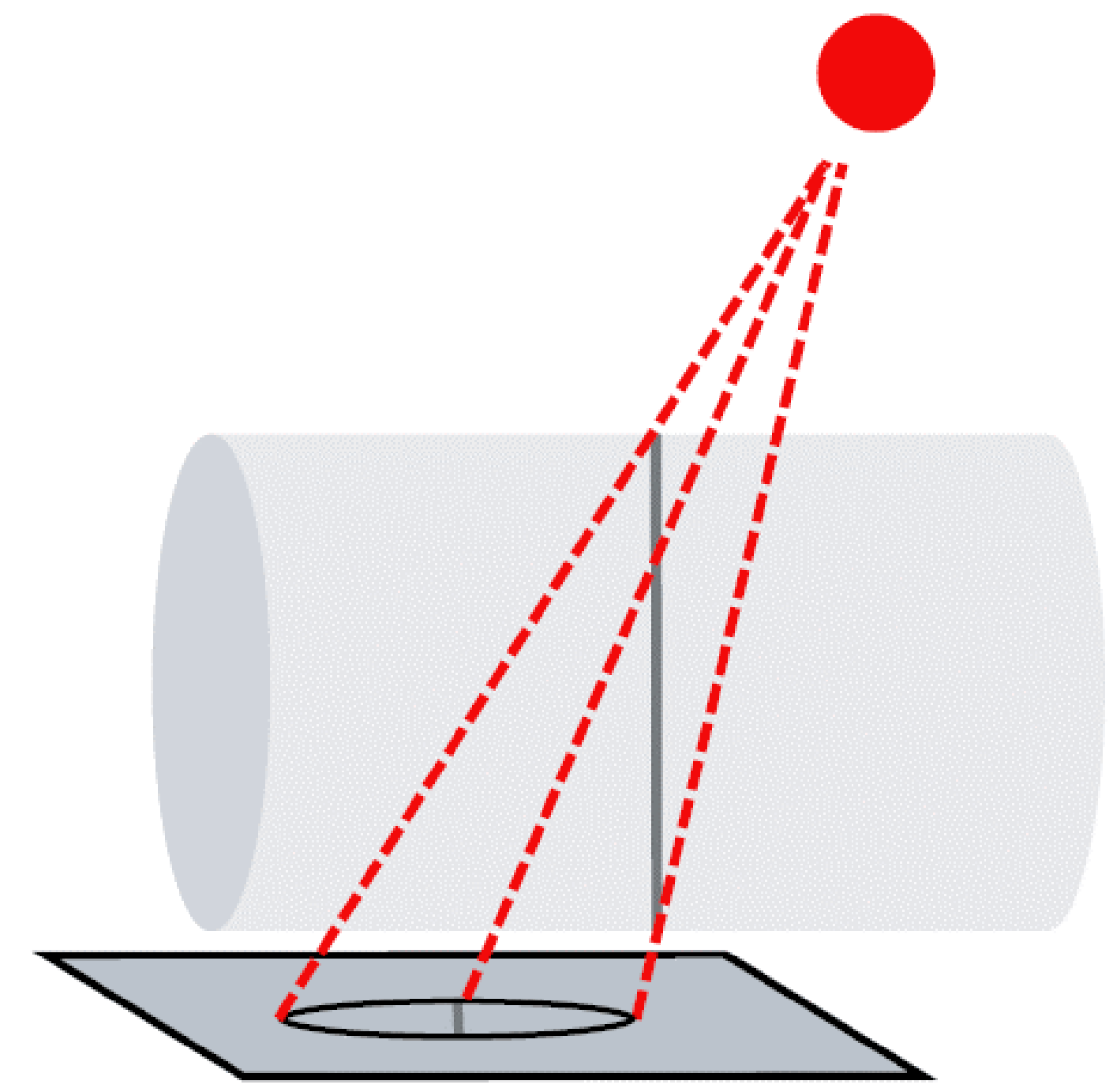


CP225D & Go-Scan 3025

The portable solution for all your NDT applications

Technique

Double wall double image ellipse technique



10 FE ISO

Class B not
validated

CP225D & Go-Scan 3025

The portable solution for all your NDT applications

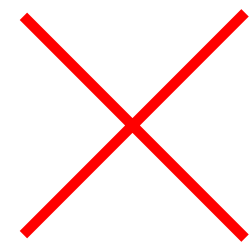
Class B (ISO 17636-2)

Required:

- SRb of 80 μm (D11)
- W14 visible
- SNR : 140*

Achieved:

- SRb of 130 μm (D9)
- W15 visible
- SNR : 196



Class B not validated.

*Requested SNR for class B between 150 & 250 kV is 100 (+40% in HAZ)

Thanks!

For more information, please visit www.teledyneicm.com

Maximilian Salomon | Sales Engineer
Phone: +46 (0)31 748 52 56
maximilian.salomon@kontrollmetod.se



Call
US:

+32 475 60 15 74



Email
US:

Abdallah.rady@teledyne.com



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