



# AGR Phased Array

This course is designed to provide an overview of the principles of ultrasonic phased array inspection using the TD Focus-Scan instrument. The course covers the theory of phased array ultrasonics while emphasizing standard practices and includes many practical demonstrations and exercises. All aspects of inspection are covered from the preparatory steps of technique development, setup and calibration through the execution steps of data acquisition, analysis and reporting.

In addition to field experienced instructors, Eclipse offers some unique training tools. These include the ray-tracing software package ESBeamTool3 which is becoming the industry standard for creation of techniques or 'scan plans', and access to the photo-elastic system which allows the user to actually see the sound traveling through transparent material.

The course is paced to provide a challenge for experienced technicians while emphasizing fundamentals of operation and standard practices for all attendees. We recommend that attendees have attained Level 2 or 3 certification in industrial ultrasonics prior to attending this course.

## Course Content

- Ultrasonic phased array principles
- Applications of phased arrays
- Ultrasonic digitization principles
- Benefits and limitations of phased array examination
- Probe design for phased array applications
- Focal laws
- Ultrasonic beam steering and focusing
- Linear and sectorial (swept angle) scan definitions
- Instrument features
- Instrument operation
- Instrument applications including:
  - Technique development
  - Software and scanning configurations
  - Calibrations
  - Data acquisition
  - Data storage and file structure
  - Data analysis
  - Reporting
  - Current industry applications using ultrasonic phased arrays

## Course Duration

- 5 days (40 hours)
- 50% classroom - PowerPoint presentation and feedback
- 40% lab work - data manipulation and lab exercises
- 10% testing - daily quiz and final exam

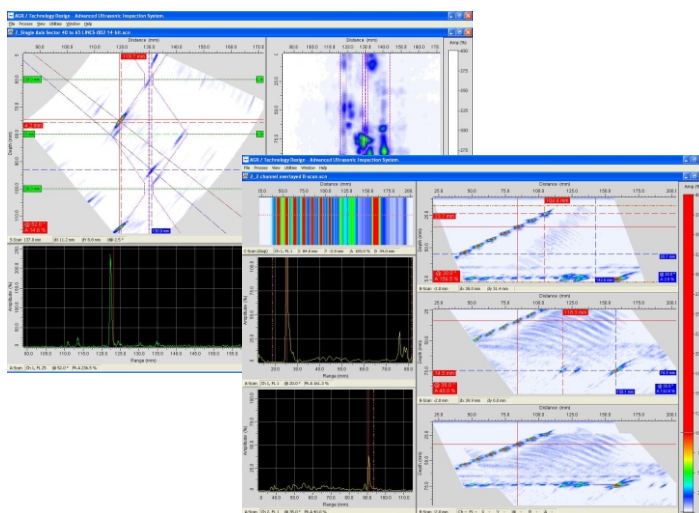
## Course Registration

Course ID: 130 - AGR Phased Array  
[training@eclipsescientific.com](mailto:training@eclipsescientific.com)

## The AGR Instrument Line-Up

The AGR instrument line of advanced ultrasonic imaging and analysis systems provides the user with a comprehensive capability to satisfy virtually all ultrasonic inspection needs. Using the latest technology, the systems demonstrate an outstanding capability for Time-of-Flight-Diffraction (TOFD), Single/Multichannel Corrosion Mapping and Pulse Echo (PE) inspection.

- Fast, reliable TOFD, Corrosion Map, Multi-Channel Pulse Echo,
- ASME compliant girth/seam weld examinations and sector scan inspections with the Phased Array system.
- Real-time imaging presents live A, B, C and D scans.



ISO 9001:2008 Registered

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