

## EN 4179

# Level 1 & 2: Laser Shearography Training



Dantec Dynamics is pleased to announce that it will be hosting the inagural Level 1 & 2 Laser Shearography training course in Ulm, Germany. In partnership with Dekra Industrial AB, this training course will be instructed according to EN 4179 for the duration of 1 week. Developed due to growing industry demand for qualified professional training, this course is focused on providing high-quality theoretical and hands-on application training.

## When:

28.10.2019 - 01.11.2019

#### Cost:

#### 3,000 € per Participant

includes; training fees, examination fees and daytime catering (lunch, tea & coffee, drinks and snacks)

#### Where:

#### **Business Center Ulm**

Magirus-Deutz-Straße 12, D-89077 Ulm, Germany

### **Dantec Dynamics GmbH**

Kaessbohrerstr. 18, D-89077 Ulm, Germany

Pease note, this course is limited to a maximum of **20 participants**. Register today to save your seat!

In the case of too few participants, Dantec Dynamics reserves the right to cancel the course.

As per requirements of EN 4179, 60- hours of instruction and training is mandatory. The Laser Shearography training course comprises of 40 hours face-to-face training and 20 hours of online training.

- 40- hours of direct face-to-face instruction will take place at the Business Centre Ulm (morning sessions) and at Dantec Dynamcis (afternoon sessions)
- 20- hours of learning will take place online via Dantec Dynamics's eLearning program.

User's must complete the online Laser Shearography user application course prior to the beginning of the face-to-face training.

#### **Hotels in Ulm, Germany**

Leonardo Royal Hotel Ulm Hotel Blaubeurer Tor ibis Ulm City Hotel ibis budget Ulm City

During the training week, afternoon sessions will be devoted to practical applications of Laser Shearography inspection, including; honeycomb & sandwich components, laminates, overwrapped pressure vessles and advanced structures. Various loading mechanisms will also be presented including; thermal, vacuum (ambient), vacuum (partial), vibration and mechanical excitation.

#### **Training Course Program**

		Monday 28.10	Tuesday 29.10	Wednesday 30.10	Thursday 31.10	Friday 01.11
Morning	0830 - 0900	Welcome & Introduction	Questions	Questions	Questions	Questions
	0900 - 0930	1.1. Intro. to Laser Shearograpy	1.5. Speckle Interferometry	1.7. Shearography physics, continued	2.4. Interpretation of results	2.6. Writing of instructions and reporting
	0930 - 1000	1.2. Physics of Light & Optics				2.7. System Calibration
	1000 - 1030			2.2. The Inspection System	2.5. Reference Objects	2.8. Future Trends & Challenges
	1030 - 1100	1.3. Lasers	1.6. Shearography physics		3.6. Materials and Shearography applications	4.1. Rehearsal
	1100 - 1130 1130			2.3. Noise and how to handle it		
	1200	1.4. Laser Safety		Lunch		
		2.1.		Lunon		
	1300 -1330	Measurement. Processes	3.3. Intro. to Thermal Excitation	3.5. Lab Session - Thermal Excitation & Vacuum (Partial) Excitation	3.7. Intro. to Vibration & Mechanical Excitation	4.2. Examination
	1330 -1400	3.1. Intro. to Vacuum				
	1400 - 1430	Excitation	3.4. Lab Session - Vacuum (Ambient) Excitation & Thermal Excitation		3.8. Lab Session - Vibration & Mechanical Excitation	
Afternoon	1430 - 1500	3.2. Lab Session - Vacuum (Ambient) Excitation				
	1500 - 1530					End
	1530					
	1600		Excitation			Fnd
	1600 1600 - 1630	Excitation	Excitation			End

#### Barend van den Bos

Barend has been working in the NDT industry for the past 25 years, from NDT inspection to PhD research to project management in system development projects. With key experience in the Aerospace, Wind Power and Nuclear NDT sectors, Barend is a trained Level 3 in multiple NDT technologies (LS, UT). Barend has been working with Laser Shearography since 2001 and actively participates in wide variety of inspection tasks and development projects. Barend serves as Dekra Industial AB's Level 3 in Laser Shearography.



#### For more information please contact

Dantec Dynamics GmbH Kaessbohrerstrasse 18, 89077 Ulm, Germany Tel.: +49-731-933-2200

Email: ndttraining@dantecdynamics.com



