



YOUR REQUIREMENTS, OUR CAPABILITY



AVOPTICS FIBRE OPTIC TRAINING

(Harsh Environment & Highly Regulated Industries)

DOES YOUR TEAM HAVE RECOGNISED TRAINING?

AVoptics Ltd is the first company in Europe to offer internationally recognised fibre optic training for the harsh environments and highly regulated industries

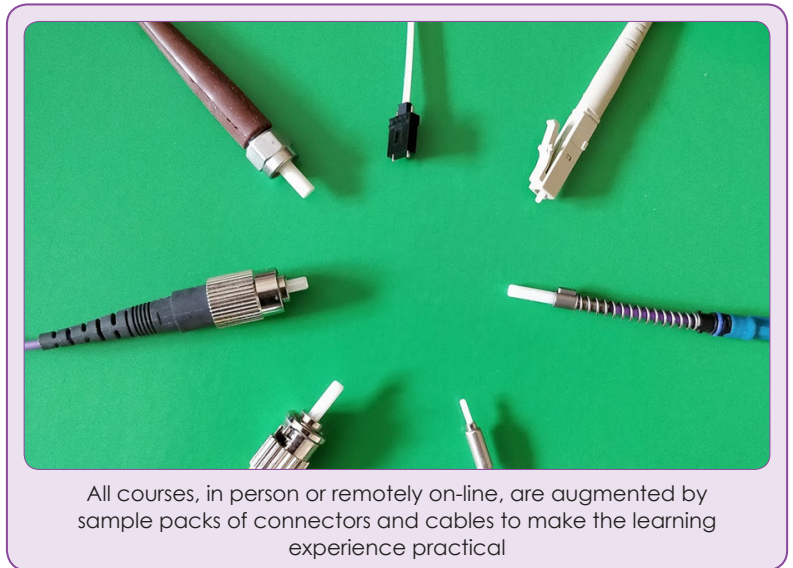
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INTRODUCTION TO FIBRE OPTIC TRAINING

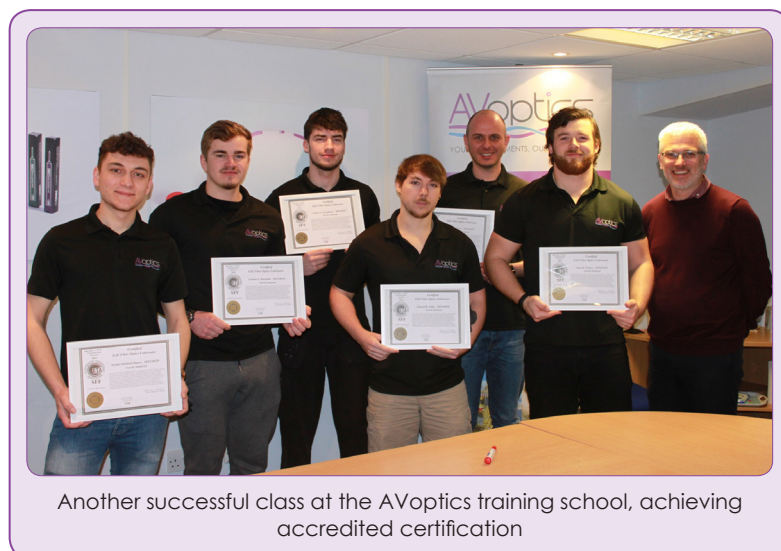
AVoptics Ltd is proud to present its latest range of Fibre Optic Training packages.

These will enable you and your team to work with confidence on harsh environment fibre optic systems. Informing knowledge and best practice, our training courses will ensure that your fibre optic systems keep working for as long as your platform remains in service.

Fibre Optic systems are incredibly robust and are often stronger and better protected than their electrical equivalents. As with all technologies however they require maintenance and they often have different requirements to their electrical counterparts.



Our courses, accredited by both the SAE and ARINC, will give your team essential knowledge whether they are preparing for the introduction of fibre optics or are maintaining and supporting legacy fibre systems.



Our team of recognised industry experts has been working on fibre in for harsh environments and highly regulated industries since the 1980's and have accumulated a unique depth and breadth of knowledge. Through our courses we share this knowledge with yourselves, teach you many of the lessons we have learnt and gain you a formal, accredited qualification for working on harsh environment fibre optics.

Training can be delivered at our training centres, online or at your premises.

OUR COURSES

Courses are generally applicable to personnel including: Managers, Engineers, Technicians, Trainers/Instructors, Third Party Maintenance Agencies, Quality Assurance & Production staff.

The Fundamentals course (2 days) provides a good introductory overview of the technology. Installer courses (3 days) expand the theory and practical elements further to give a broader knowledge of harsh environment fibre optics.

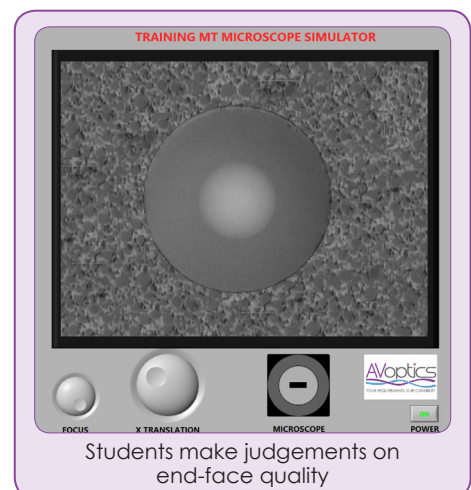
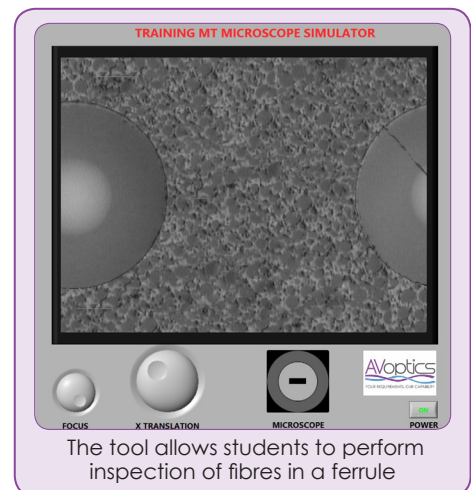
Fabricator courses (5 days) are the most comprehensive, providing a wealth of knowledge on hardware and best practice. Fabricator courses include practical cable termination and are more appropriate for those producing fibre optic assemblies or doing practical repairs on systems.

ARINC courses are generally more applicable to civil aerospace application whereas the SAE generally caters for harsh environment and military platforms. A combined SAE/ARINC Fabricator course is available. Despite these emphases, all courses do discuss the broad range of technology used in both application areas.

CERTIFICATION

All SAE, ARINC and combined courses are accredited with a formal qualification (if required).

Exams are administered through ETA. To successfully complete the training each student must perform the required Hands-on competencies in the presence of the instructor.



ARINC 807 - FUNDAMENTALS TRAINING

This introductory course provides a good grounding in the principles of fibre optic transmission, hardware, safety awareness, basic characteristics of fibre cables, connectors and harnesses, test, inspection & cleaning equipment. A small hands-on element includes identification of fibre and cable types, main connector hardware, wavelength visibility, cleaning and basic fault finding. ARINC 807 Fibre Optic Training Requirements are based on SAE 5602 but are designed to meet the requirements of the commercial air transport industry.

ARINC 807 has particular emphasis on connector hardware ARINC 801 (LuxCis) and EN4531 (ELIO). Other ARINC termini and connectors are discussed.

ARINC Fundamentals - Knowledge Competencies (1 Day)

The theory syllabus will cover:

1. Introduction to Fibre Optics
2. Principles of Fibre Optic Transmission
3. Safety awareness
4. Optical Fibre Construction & Characteristics
5. Fibre Optic Cables
6. Fibre Optic Interconnects
7. Harnessing & Labelling
8. Test, Inspection & Cleaning Equipment

ARINC Fundamentals - Hands-on Practical Training (1 Day)

Identification of different fibre types (single-mode/multi-mode). Identification of common cable & connector types. Use of continuity tester, visual fault locator. Wavelength visibility. Use of inspection probe/microscope and basic end-face feature identification. Basic cleaning.

Note: this course does not include cable termination.

Exam - Optional

Students have the option to take the accredited ARINC Fundamentals exam. Administered through the ETA, successful students will hold the ARINC 807 Fundamentals qualification.

ARINC807 – INSTALLER TRAINING

A 3-day course, fibre optic Installer technical training is designed for individuals involved in the installation, support, integration and testing of fibre optic systems. Designed for those working with fibre optic hardware without the need to perform terminations. This comprehensive course provides a focussed blend of theory and practical hands on training. The course covers the essential elements of fibre technology, how it works, the hardware, techniques and best practice, test equipment and test methods.

ARINC 807 Fibre Optic Training Requirements are based on SAE 5602 but are designed to meet the requirements of the commercial air transport industry. There is particular emphasis on working with ARINC 801 (LuxCis) and EN4531 (ELIO) connector hardware. Other ARINC termini and connectors are discussed.

ARINC Installer – Knowledge Competencies (3 Days)

The theory syllabus will cover:

- | | |
|---|-------------------------------------|
| 1. Introduction to Fibre Optics | 8. Fibre Optic Interconnects |
| 2. Principles of Fibre Optic Transmission | 9. Inspection & Cleaning |
| 3. Safety awareness | 10. Connector Assembly |
| 4. Basic Principles of Light | 11. Harness Assembly & Installation |
| 5. Optical Fibre Construction & Theory | 12. Test & Inspection Equipment |
| 6. Optical Fibre Characteristics | 13. Test Methods & Application |
| 7. Fibre Optic Cables & Labelling | |

ARINC Installer – Hands-on Practical Training (2 Days)

This element covers the identification and use of hardware, inspection and cleaning of fibre optics, basic test of fibre cables, assembly and test of connectors (with a focus on ST, FC & ARINC 801 (LuxCis) and EN4531 (ELIO) connector technology).

Additional Hands-on elements include: Identification of fibre/cable types (single-mode, multi-mode, core sizes etc.), identification of other common termini, cables and connectors. Use of inspection and cleaning equipment, identification and classification of connector end-face defects, continuity testing, basic fault location, bend loss effects, wavelength visibility.

Note: this course does not include cable termination.

Exam - Optional

Students have the option to take the accredited ARINC Installer exam. Administered through the ETA, successful students will hold the ARINC 807 Installer qualification.

ARINC807 – FABRICATOR TRAINING

A 5-day course, ARINC Fibre optic fabricator technical training is designed for individuals involved in the manufacturing, installation, support, integration and testing of fibre optic systems. This comprehensive course provides a focussed blend of theory and practical hands on training. The course covers the essential elements of fibre technology, how it works, the hardware, test equipment, methods, techniques and best practice. It also covers the practical termination of cables which is a key part of the Hands-on requirement.

ARINC 807 Fibre Optic Training Requirements are based on SAE 5602 but are designed to meet the requirements of the commercial air transport industry. There is particular emphasis on connector hardware ARINC 801 (LuxCis) and EN4531 (ELIO). Other ARINC termini and connectors are discussed.

ARINC Fabricator – Knowledge Competencies (3 Days)

The theory syllabus will cover:

- | | |
|---|----------------------------------|
| 1. Introduction to Fibre Optics | 9. Fibre Optic Cables |
| 2. Principles of Fibre Optic Transmission | 10. Fibre Optic Interconnects |
| 3. Safety awareness | 11. Termination Techniques |
| 4. Basic Principles of Light | 12. Connector Assembly |
| 5. Optical Fibre Construction & Theory | 13. Harness Assembly |
| 6. Optical Fibre Characteristics | 14. Labelling |
| 7. Fibre Optic Sources | 15. Test & Measurement Equipment |
| 8. Fibre Optic Detectors | 16. Test Methods & Application |

ARINC Fabricator – Hands-on Practical Training (2 Days)

This element covers the identification and use of hardware, inspection and cleaning of fibre optics, basic test of fibre cables, assembly and test of connectors (with a focus on ST, FC & ARINC 801 (LuxCis) and EN4531 (ELIO) connector technology). Students will terminate different cables, populate fibre optic connectors and perform insertion loss testing of the completed assemblies.

Additional Hands-on elements include: Identification of fibre/cable types (single-mode, multi-mode, core sizes etc.), identification of other common termini and connectors. Use of inspection and cleaning equipment, identification and classification of connector end-face defects, continuity testing, basic fault location, bend loss effects, wavelength visibility.

Exam - Optional

Students have the option to take the accredited ARINC Fabricator exam. Administered through the ETA, successful students will hold the ARINC 807 Fabricator qualification.

SAE 5602 – FABRICATOR TRAINING

A 5-day course, SAE Fibre optic fabricator technical training is designed for individuals involved in the manufacturing, installation, support, integration and testing of fibre optic systems. This comprehensive course provides a focussed blend of theory and practical hands on training. The course covers the essential elements of fibre technology, how it works, the hardware, test equipment, methods, techniques and best practice. It also covers the practical termination of cables which is a key part of the Hands-on requirement.

SAE 5602 Courses have an emphasis on military platform technology in particular MIL-PRF- 29504/4/ & /5 optical termini in 38999 Connectors.

SAE 5602/3 – Knowledge Competencies (3 Days)

The theory syllabus will cover:

- | | |
|---|----------------------------------|
| 1. Introduction to Fibre Optics | 9. Fibre Optic Cables |
| 2. Principles of Fibre Optic Transmission | 10. Fibre Optic Interconnects |
| 3. Safety awareness | 11. Termination Techniques |
| 4. Basic Principles of Light | 12. Connector Assembly |
| 5. Optical Fibre Construction & Theory | 13. Harness Assembly |
| 6. Optical Fibre Characteristics | 14. Labelling |
| 7. Fibre Optic Sources | 15. Test & Measurement Equipment |
| 8. Fibre Optic Detectors | 16. Test Methods & Application |

SAE 5602/4 – Hands-on Practical Training (2 Days)

This element covers the identification and use of hardware, inspection and cleaning of fibre optics, basic test of fibre cables, assembly and test of connectors (with a focus on ST, FC & MIL- PRF-29504 and 38999 connector technology). Students will terminate different cables, populate fibre optic connectors and perform insertion loss testing of the completed assemblies.

Additional Hands-on elements include: Identification of fibre/cable types (single-mode, multi-mode, core sizes etc.), identification of other common termini and connectors. Use of inspection and cleaning equipment, identification and classification of connector end-face defects, continuity testing, basic fault location, bend loss effects, wavelength visibility.

Exam - Optional

Students have the option to take the accredited SAE Fabricator exam. Administered through the ETA, successful students will hold the SAE 5602 Fabricator qualification.

SAFF – COMBINED SAE/ARINC FABRICATOR TRAINING

This 5-day combined programme covers all of the SAE and ARINC Fabricator theory syllabus with combined practical termination of MIL-PRF-29504/38999 connector technology as well as ARINC 801 (LuxCis) and EN4531 (ELIO) termini. Developed with the ETA this is the most comprehensive course available.

SAE 5602/3 – Knowledge Competencies (3 Days)

The theory syllabus will cover:

1. Introduction to Fibre Optics
2. Principles of Fibre Optic Transmission
3. Safety awareness
4. Basic Principles of Light
5. Optical Fibre Construction & Theory
6. Optical Fibre Characteristics
7. Fibre Optic Sources
8. Fibre Optic Detectors
9. Fibre Optic Cables
10. Fibre Optic Interconnects
11. Termination Techniques
12. Connector Assembly
13. Harness Assembly
14. Labelling
15. Test & Measurement Equipment
16. Test Methods & Application

SAE 5602/4 – Hands-on Practical Training (2 Days)

This element covers the identification and use of hardware, inspection and cleaning of fibre optics, basic test of fibre cables, assembly and test of connectors (ST, FC, MIL-PRF-29504/38999 connector technology, ARINC 801 (LuxCis) and EN4531 (ELIO) termini). Students will terminate different cables, populate fibre optic connectors and perform insertion loss testing of the completed assemblies.

Additional Hands-on elements include: Identification of fibre/cable types (single-mode, multi-mode, core sizes etc.), identification of other common termini and connectors. Use of inspection and cleaning equipment, identification and classification of connector end-face defects, continuity testing, basic fault location, bend loss effects, wavelength visibility.

Exam - Optional

Students have the option to take the accredited SAFF combined SAE/ARINC Fabricator exam. Administered through the ETA, successful students will hold the Combined SAFF Fabricator qualification.

CERTIFICATION

AVoptics is an approved certification administrator for the Electronics Technicians Association International (ETA International). Upon successful completion of the training, the individual will receive an ETA certification with endorsements for the types of termini, cable, and connectors completed during the course of instruction. The ETA will maintain certification records. The ETA administers both SAE and ARINC qualifications.

Where required, individuals shall be certified after successful completion of training and prior to working on fibre optic systems, components, or installations. Certification shall be compliant with harsh environments and highly regulated industries approved training programs.

Recertification: Please contact AVoptics for details of recertification requirements and top-up courses.

TRAINING LOCATIONS

Training also now available at customers facilities and online*

AVoptics Ltd
7 Oak Way
Lufton Trading Estate
Yeovil
Somerset
BA22 8HS

AVoptics (Lightworks) Ltd
2nd Floor, Nisbets
Unit 8
Newhouse Farm Industrial Estate
Chepstow
NP16 6UD



*Course dependant

Thank you for enquiring about the range of courses detailed in this pack
and if you have any further questions don't hesitate to get in touch at:

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7 Oak Way
Luffton Trading Estate
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Somerset
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