FGC-GA
Fiber Glass Geometry System

The FGC-GA is the all-in-one solution for precision measurements of the geometry of the widest range of optical fibers, V-grooves arrays, and ribbon connectors. With one unit, users can completely characterize V-groove block geometry, core-to-core pitch and core X & Y offset of multifiber arrays up to 27mm in width. With a huge 1200µm field of view as well as an automated lateral scanning stage the FGC-GA can give you all the results you need.

Features & Benefits

- V-groove array geometry - core to core pitch, X-offset, Y-offset and V-groove block geometry
- Arrays up to 27mm wide and up to ± 8° end angle
- MT ferrule measurements
- Dual wavelength illumination (525nm and 850nm) ensures best optical performance but maintains standards compliance
- Wide range of Arden holders available plus custom holders
- Single fibers up to 1mm in diameter
- Polarisation maintaining fibers (with optional extra PM illuminator)

FGC-GA software display

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Fiber Gallery

<< **Standard**

<< **PM**

<< **Octagonal**

<< **Multicore**

<< **Micro-Structured**

<< **Dual Clad**

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Measurement Capability	
Fiber diameter	Up to 1mm
End angle	± 8°

Single fibers	
Singlemode	Standard telecom
Multimode – Graded Index	OM1, OM2, OM3, OM4
Multimode – Step Index	From 50/125µm Up to 1000µm cladding diameter
Polarisation Maintaining	80µm and 125µm PANDA
Dual-clad	Minimum layer thickness = 10µm
Multi-core fiber	Up to 19 cores
Non-circular fiber	6 & 8 sides (can be part of double cladding structure)

Arrays	
Array Width	Up to 27mm
Fiber Types	Singlemode, Multimode, PM
Measurement Time	< 1 minute (excluding fiber preparation) for a 3-fiber array
MT ferrules	Positions of cores with respect to guide pins

Repeatability

Single fiber - Repeatability is measured on the FGC-GA using a single 20/400µm fiber with 525nm illumination without removing it from the unit.

Core Diameter	< 0.1 µm
Cladding Diameter	< 0.15 µm
Core Non-Circularity	< 0.5%
Cladding Non-Circularity	< 0.1%
Core-to-Cladding Concentricity	< 0.15 µm

Arrays - Repeatability is measured on the FGC-GA using a 3-fiber array, without removing it from the unit.

Core Diameter	< 0.1 µm
Core X/Y-offsets	< 0.1 µm
Core Non-circularity	< 0.5%
Core-core Distance	< 0.1%

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Optical	
Fiber illumination – Reflection	Dual wavelength, switchable 850nm and 525nm
Fiber illumination – Transmission	**Multiple LED array, 850nm and 525nm** ■ Suitable for single cores up to 1000µm ■ Requires Arden-style fiber holder
Fiber illumination – PM	External module – 850nm and 525nm options. Suitable for 80µm and 125µm fibers, PANDA style. Bow-tie style fibers can be imaged but not analysed. Software-controlled from main GUI.
Fiber illumination – External illuminator	External module 850nm and 525nm options. Suitable for bare fiber, FC, SC, ST, LC (and APC variants).
Maximum field of view	1200µm
Image sensor	35mm CCD; 4864 × 3232 pixels resolution
Exposure range	Global shutter; 0.1ms to 100ms exposure time

Physical	
Weight	13.6kg (with carry case 33kg)
Size	0.5m x 0.5m x 0.2m
Size of Fiber Handling Bench	0.5m x 0.5m x 0.1m
Operating temperature	10 – 30°C
Performance specification validated at	22°C
Power supply	15V (External power supply supplied)
Power consumption	60W
Data interface	1xUSB 3.0 (USB B to USB A: 2m cable supplied)
Computer requirements	All FGC systems are supplied with a computer running up-to-date Windows operating system

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