

Case Study



Problem

Need of a system capable of measuring up-welling (reference standard to estimate solar irradiance) and down-welling (the target Earth surface) simultaneously and in two different spectral regions using two different spectrometers: one for the spectral region where the induced chlorophyll fluorescence estimation is possible and one across the wider near-infrared region.

Solution

We manufactured a double bifurcated fibre optic assembly routing light from two different sources to two different spectrometers configured for different wavelength ranges (UV/VIS and VIS/NIR).

Alker contribution double bifurcated assembly

This assembly has two fibres side by side in each of its two input legs. Both input legs hold fibres of different types: f1 and f2 (f1f2, f1f2). In the junction/central block they cross over into two legs each containing side by side fibres of the same type, f1f1 and f2f2. The legs are armoured and water-resistant. The four legs have a fitted IP68 gland. A 4 Ribbon electrical cable in one input leg splits in 2 ribbon cable in each one of the output legs. The input legs are keyed for alignment (by special construction/design of the connector ferrule).

The whole assembly is armoured and water resistant with the actual connectors protected by an IP68 gland.

Features

- 2 × 2 assembly;
- Both aligned: connectors with keyway polarisation, and unaligned fibre legs;
- SMA905 custom connectors specially design to sit both fibres, keyed for alignment;
- 400um and 600um core fibre;
- Armoured; Water resistant;
- IP68 gland;
- 4 Ribbon cable in one input leg that splits in 2 ribbon cable in each output leg;
- Lightweight design for use on in unmanned aircraft (UAV), less than 80g per assembly.

