



| A PHOTONICS REVOLUTION

**TAPER MANUFACTURING STATION (TMS)**

The production-ready Taper Manufacturing Station (TMS) with integrated cleaving package is designed for use in the manufacturing of optical fiber tapers, bundles and couplers.

The TMS features 3SAE's patent pending Thermally Stabilized Plasma™. The manufacturing friendly TMS is a dedicated fiber tapering system that provides easy fiber access, unparalleled heating source control, stiction-free pulling results in the highest quality, lowest loss and best repeatability in the industry.

The TMS operates in partial vacuum which is advantageous in producing adiabatic fiber tapers. Operating 3SAE's patent pending Thermally Stabilized Plasma™ in partial vacuum allows the width of the plasma field to expand up to 10x along the axis of the fiber. Heat sources with a wider heat profile are better for tapering and bundling of fibers because the pull distance per unit time is distributed over the molten region in accordance with the profile. Narrow profiles create modulations and stress concentrations that induce losses. Our wider plasma field flattens and reduces the frequency of modulations resulting in losses of less than 1% in tapers.

An additional benefit of operating in partial vacuum is oxidation of the electrodes is minimized during the tapering process, resulting in virtually debris free tapers. Our new blunt electrode design increases life expectancy by > 10x while increasing throughput power capabilities for high power laser systems. High power testing confirms that TMS does not contaminate the glass surface, eliminating the need for etching and reducing the cost of production and rework.

The TMS features three customizable tapering modes, single direction tapering, bi-directional tapering and table based tapering.

Table based tapering method allows the flexibility of a syntax based software program to create a custom taper program while using a simplified Lab VIEW based GUI. Alternately, programs such as "MATLAB" or Microsoft Excel can be utilized to develop the tapering program



**Key Features:**

- Utilizes 3SAE's patent pending Thermally Stabilized Plasma™ in partial vacuum, resulting in the highest quality, lowest loss and best repeatability in the industry
- Three customizable tapering modes, single direction tapering, bi-directional tapering and table based tapering
- Ultra low contamination for high power applications
- New blunt electrode design increases life expectancy by > 10x

**Technical Specifications:**

- Dimensions: 75 (W) x 31 (D) x 28 (H) cm
- Weight: 44 kg
- Power Source: (2) 24V 200W
- Control / Operation: Each system ships with PC system with Windows Operating System, Serial communication to 3SAE Taper Manufacturing Station mother board, and a 23" 1920 x 1080 High res wide screen monitor.
- Flow: 126 L/min (4.5 ft<sup>3</sup>/min)
- Pressure: 0.4-0.6 MPa (~60-90psi)

| Product                                  | Part Number        | Qty |
|--|--------------------|-----|
| <b>Taper Manufacturing Station</b>       | <b>TMS-01-0400</b> |     |
| <b>Standard Package</b>                  |                    |     |
| TMS Integrated Piezo LDF Cleaving System | N/A                |     |
| Electrodes (Sold Individually)           | SPT-10-1638        | 3   |
| 6 mm Hose                                | N/A                | 1   |
| 24V Power Supply                         | ACC-01-0144        | 2   |

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