

Temperature control

For high-quality  
plastic seams



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**Improve quality**

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**Weld faster**

02

**Integrate easily**

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**Operate easier**

01

## Improve quality

With the temperature control high-value and optically attractive seams are achieved when laser welding plastic joints. The sensor system monitors the temperature at the joining zone and its relation to the set limit values. What's more, the laser power can be regulated to the nominal temperature. A quick process ramp-up is possible without sacrificing quality.

02

## Integrate easily

The temperature control sensor system is integrated directly into the laser scanner. With this you can lower the number of cables and the risk of errors. There is a compact control box enclosed in the delivery with the fixed optics. The configuration of the sensor system is done by using the central laser control. The temperature control can be combined with a position sensor of the TRUMPF melt travel monitor as a practical supplement to the quasi-simultaneous welding.

03

## Weld faster

With this innovative control concept, you can quasi-simultaneously weld at very high speeds with the scanner. For example, a contour length of 240 mm is possible at 6 m/s.

04

## Operate easier

The entire process is visualized online on a PC panel with multi-touch operation. Thus, the setting up of new components can be performed very easily. The integrated trend display shows process deviations, and in doing so enables quick corrective intervention.



**Optically attractive welding seams, even at higher speeds**

The TRUMPF temperature control for the laser welding of plastics measures the temperature of the joining zone with a pyrometer. The system registers the intensity of the thermal radiation in a predetermined wavelength spectrum and regulates the laser power towards the nominal temperature. Typical applications are the quasi-simultaneous welding of closed contours and the contour welding of round parts.



### TRUMPF temperature control

Available lasers	TruDiode 151, TruDiode 301, TruDiode 603, TruDiode 903, others on request
Available optics and focal lengths	PFO 20-2 post-objective f = 200 mm, f = 280 mm, f = 395 mm, f = 560 mm, f = 740 mm, more on request BEO D50 f = 200 mm, f = 250 mm
Measurement range	180–520°C (with emission factor $\epsilon = 1$ )
Pyrometer measurement rate	2.0 kHz (500 $\mu$ s)
Cycle frequency of the temperature controller	12.5 kHz (80 $\mu$ s)
Typical precision	3% at 350°C, providing there is an annual calibration

Subject to alteration. Only specifications in our offer and order confirmation are binding.