

**FZ 14-M**

## FZ 14-M

The Polysilicon Floatzone Test Grower

### Main features of the FZ-14M

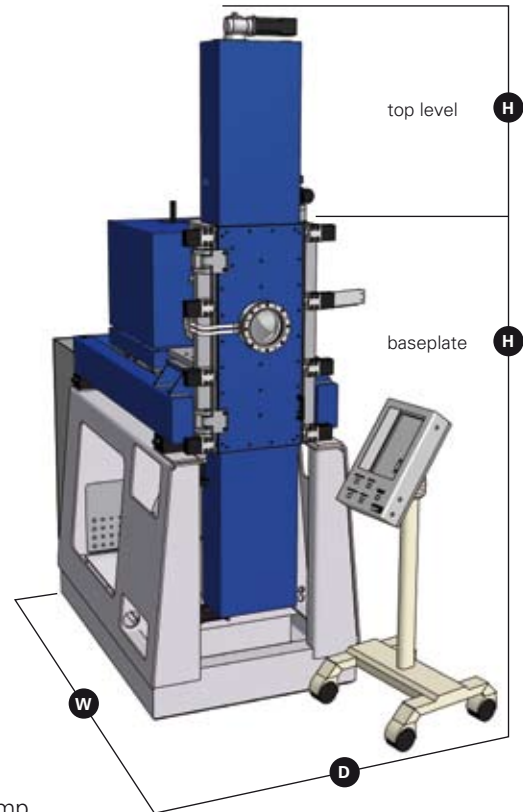
	Upper Spindle	Lower Spindle
Pulling length:	350 mm	350 mm
Pulling speed:	0 - 30 mm/min	0 - 30 mm/min
Fast travel speed:	100 - 300 mm/min	100 - 300 mm/min
Spindle rotation:	0 - 50 rpm	0 - 50 rpm

#### RF-Generator

RF output power:	10 kW
RF frequency:	3 MHz
Power control:	SCR-power thyristor triggered by pulse transformers
Oscillator valve:	water-cooled ceramic type ITK 15-2

#### Vacuum system

End vacuum:	$2.5 \cdot 10E-5$ mbar
Leak rate:	$< 1 \cdot 10E-3$ mbar 1/sec
Chamber walls:	polished stainless steel, $R_a < 0.1 \mu\text{m}$
Pump:	Turbo pump with diaphragm pre-/backing pump



The floor area required for the complete set-up including generator, closed loop cooling system, vacuum/gas system, control panel, operator's platform and computer station is approx. 3 x 4 meters.

Weight: approx. 2,500 kg (net) The weight includes the high frequency generator and control panel.

#### Pressure

Operating pressure:	-1 to +2 bar overpressure (0 to 3 bar absolute)
Test pressure:	2.6 bar over pressure

#### Cooling water

- Mechanically clean (mesh width 0.38 mm)
- Chemically neutral
- Carbonate hardness max. 8° DH
- Electrical conductivity max 300  $\mu\text{S}$

#### FZ-system

Quantity:	approx. 20 l/min
Pressure:	4-6 bar
Temp. Inlet:	12-25°C
Temp. Outlet:	max. 35°C

#### Generator

Quantity:	approx. 25 l/min
Pressure:	4-6 bar
Temp. Inlet:	12-20°C
Temp. Outlet:	max. 35°C

#### Argon

Quantity operation:	18 l/min
Quantity quick fill:	100 l
Pressure:	5-10 bar
Quality:	Semi standard C57-0305, grade 4.8.

#### Dimensions

	(approx.)	
excl. generator		
<b>H</b> Height		
top level		3,100 mm
baseplate		2,200 mm
<b>W</b> Width		3,200 mm
<b>D</b> Depth		1,800 mm

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