



FZ 14-M

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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:	2.8 MHz nominal
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, Ra < 0.1 μ 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)
- Carbonate hardness max. 8° DH
- Chemically neutral
- Electrical conductivity max 300 μ 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

Height (top level)	3,220 mm
(baseplate)	2,200 mm
Width	2,650 mm
Depth	1,500 mm

Rev. - Stand: 010