

Communications & Power Industries Power Coupler Product Specification



The VWP3126 Fundamental Power Coupler is also known as the XFEL Power Coupler. The VWP3126 Power Coupler utilizes two ceramic cylinders to provide the vacuum interface. The ceramics are coated with titanium nitride to suppress multipactor. RF-conducting surfaces are electroplated with high-RRR copper. The VWP3126 is primarily a brazed and electron-beam welded assembly. The VWP3126 is cleaned and assembled in CPI's class 10 (ISO 4) clean room to XFEL standards before being conditioned at LAL in Orsay, France, assembled onto cryomodules at CEA Saclay, and incorporated into the XFEL accelerator at DESY, in Hamburg, Germany.

FEATURES:

- Frequency: 1300 MHz
- Peak power: 1110 kW
- Average power: 7.2 kW
- Cooling: Air

BENEFITS:

- Design is proven in the XFEL accelerator
- Full class 10 (ISO-4) cleaning and assembly at CPI

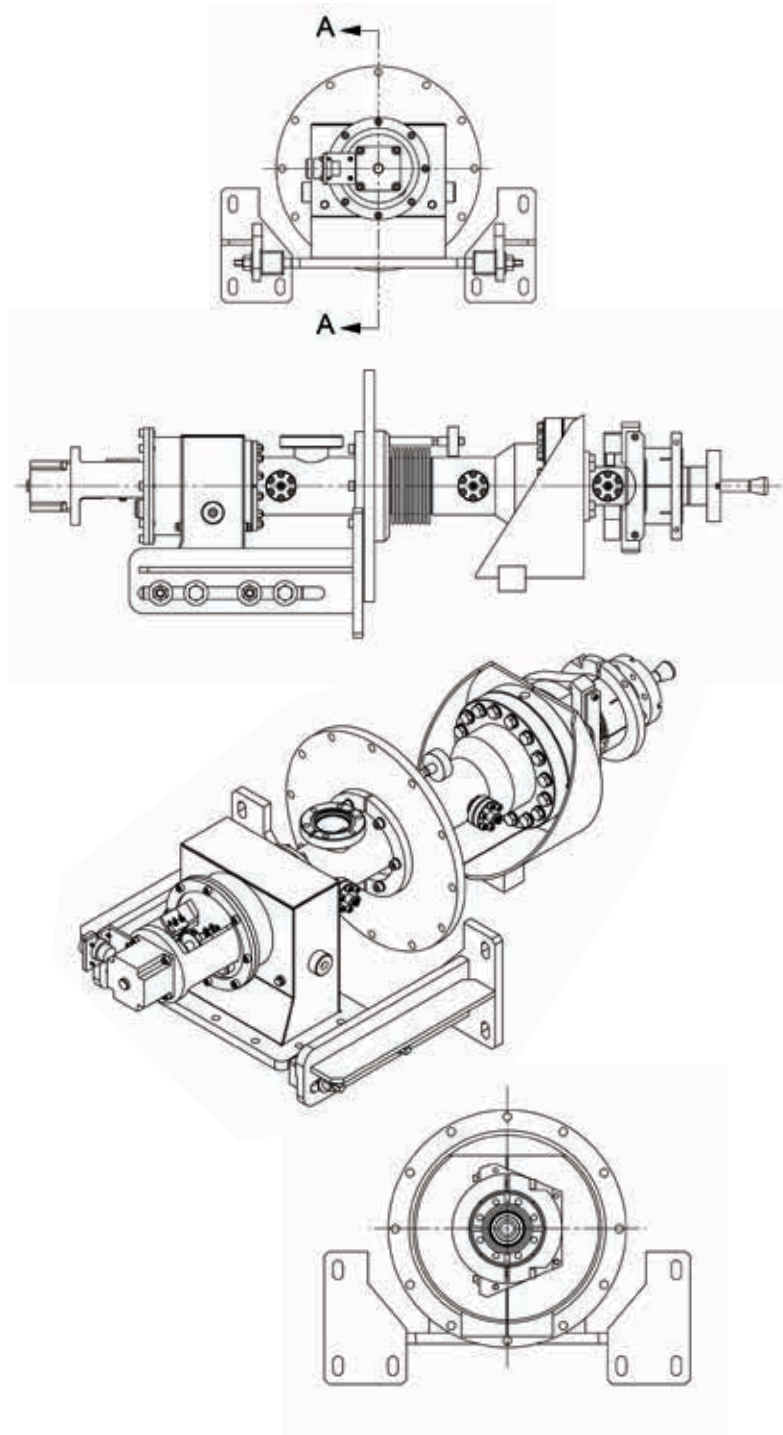
APPLICATIONS:

- XFEL superconducting linear accelerator

CPI 1110 kW CW Power Coupler product specification: VWP3126

Electrical Parameters

Operating frequency	1.3 GHz
Maximum CW power:	55 kW CW (Design limit) with matched load Tested to 25 kW (CW)
VSWR	≤ 1.15 (Design Value)
Static heat load (2k)	≤ 1 W (Design Value)
Dynamic heat load (2k)	≤ 1 W (Design Value)
Static heat load (80k)	≤ 10 W (Design Value)
Dynamic heat load (80k)	≤ 70 W (Design Value)
Installation transverse offset	> 10 mm
Axial offset	>5 mm
Vacuum leak rate	< 10 ⁻¹⁰ mbar.L/s
External qualify factor	8x10 ⁵ to 5x10 ⁶ variable adjustable
Cold assembly sealing type	TTF-III style aluminum Hex seal 1.752" diameter
Cold assembly outer conductor diameter	40 mm
Water cooling	Waveguide adaptor cooled with filtered water
Air cooling	Warm window cooled at waveguide adaptor and in inner conductor



Note: Product is supplied with a full set of Conflat gaskets RF contact gaskets, coated nuts and bolts, and thermocouples.