北京众星联恒科技有限公司
BEIJING TOP-UNISTAR SCI.&TECH.CO.LTD.

X-ray Diffraction Tubes

SEIFERT Analytical X-ray

SEIFERT Analytical X-ray offers a wide array of X-ray Tube types and anode materials to deliver the appropriate wavelength (λ) and match a variety of user application requirements.

The choice of anode material can be determined by the desired wavelength and fluorescence radiation of the components under investigation (Table 3). Appropriate Filters, necessary to cut out K-beta radiation, are listed in Table 2.

SEIFERT Analytical X-ray tubes are available with Fine, Long Fine, Normal or Broad Spot focus. Micro focus is available upon request.



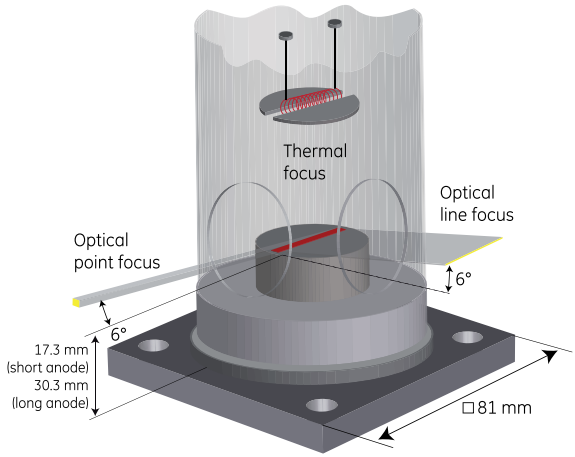


Fig. 1 point focus / line focus

Tubes have four Beryllium windows with a diameter of 14 mm and a thickness of just 300 µm.

Two windows deliver point focus and two deliver line focus for maximum versatility (Fig. 1). Five different spot sizes are available.

A Broad focus tube is preferred if intensity is the only major requirement. However, in most powder diffractometry applications both high diffraction line resolution and high intensity are required. In this case, a Long Fine focus tube is ideal because it combines the focal width of the Fine focus tube with the length of the Broad focus tube.

Technical Data

Table 1
General Information

Weight	1,5 kg (short anode), 1,8 kg (long anode)	
Temperature	+5°C ... +40°C (operation), - 40°C ... +70°C (storage)	
Cooling Water	Flow	3,5 ... 6 l / min
	Temperature	> dew point ... 35°C / 95°F
	Pressure	max. 8 bar

Table 2
Material and Transmission

Material	Transmission	K_β-Filter
MoKα	98%	Zr
CuKα	94%	Ni
CoKα	92%	Fe
FeKα	89%	Mn
CrKα	82%	V

Table 3
Characteristics of anode materials

Material	Wavelength Kα	Applications	Fluorescence radiation from sample
Mo	λ = 0,70930 A	Heavily Absorbing Samples, High Penetration Depth	Y, Sr, Rb
Cu	λ = 1,54056 A	Standard Powder Analysis and HR XRD	Co, Fe, Mn
Co	λ = 1,78897 A	Ferrogenious Samples and/or Stress Analysis	Mn, Cr, V
Fe	λ = 1,93604 A	Minerals	Cr, V, Ti
Cr	λ = 2,28970 A	Large Lattice Constants and/or Stress Analysis	Ti, Sc, Ca
W	λ = continuous	Laue Exposures	---

Tube Types
(Other tube types available upon request)

Normal Focus
optical focal spot at 6° take-off angle: 0.1 x 10 (line), 1.0 x 1.0 (spot) [mm²]

Tube type	Part-No. short anode	Part-No. long anode
DX-Cu 10x1-y 2000 W	9365700	9365710
DX-Cr 10x1-y 1800 W	9365800	9365810
DX-Mo 10x1-y 2400 W	9365740	9365750
DX-Co 10x1-y 1800 W	9365760	9365770
DX-Fe 10x1-y 1500 W	9365780	9365790
DX-W 10x1-y 2400 W	9365720	9365730
DX-Ag 10x1-y 2000 W	9365820	9365830

y = S (short anode) or y = L (long anode)

Broad Focus
optical focal spot at 6° take-off angle: 0.2 x 12 (line), 2.0 x 1.2 (spot) [mm²]

Tube type	Part-No. short anode	Part-No. long anode
DX-Cu 12x2-y 2700 W	9365840	9365850
DX-Cr 12x2-y 2700 W	9365940	9365950
DX-Mo 12x2-y 2700 W	9365880	9365890
DX-Co 12x2-y 2700 W	9365900	9365910
DX-Fe 12x2-y 2200 W	9365920	9365930
DX-W 12x2-y 2700 W	9365860	9365870
DX-Ag 12x2-y 2700 W	9365960	9365970

y = S (short anode) or y = L (long anode)

Fine Focus
optical focal spot at 6° take-off angle: 0.04 x 8 (line), 0.4 x 0.8 (spot) [mm²]

Tube type	Part-No. short anode	Part-No. long anode
DX-Cu 8x04-y 1500 W	9365560	9365570
DX-Cr 8x04-y 1300 W	9365660	9365670
DX-Mo 8x04-y 2000 W	9365600	9365610
DX-Co 8x04-y 1200 W	9365620	9365630
DX-Fe 8x04-y 900 W	9365640	9365650
DX-W 8x04-y 2000 W	9365580	9365590
DX-Ag 8x04-y 1500 W	9365680	9365690

y = S (short anode) or y = L (long anode)

Long Fine Focus
optical focal spot at 6° take-off angle: 0.04 x 12 (line), 0.4 x 1.2 (spot) [mm²]

Tube type	Part-No. short anode	Part-No. long anode
DX-Cu 12x04-y 2200 W	9365420	9365430
DX-Cr 12x04-y 1900 W	9365520	9365530
DX-Mo 12x04-y 3000 W	9365460	9365470
DX-Co 12x04-y 1800 W	9365480	9365490
DX-Fe 12x04-y 1000 W	9365500	9365510
DX-W 12x04-y 3000 W	9365440	9365450
DX-Ag 12x04-y 2200 W	9365540	9365550

y = S (short anode) or y = L (long anode)

Accessories

Cooling Head DX / CX - short anode for changing line to point focus	9380650
Service Kit for DX Tube - one of each: O-ring short + long, filter, nozzle for short- and longanode	9445670
Cooling Head DX short anode	9408770
Extension Set DX for changing from short to long anode	9408560

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