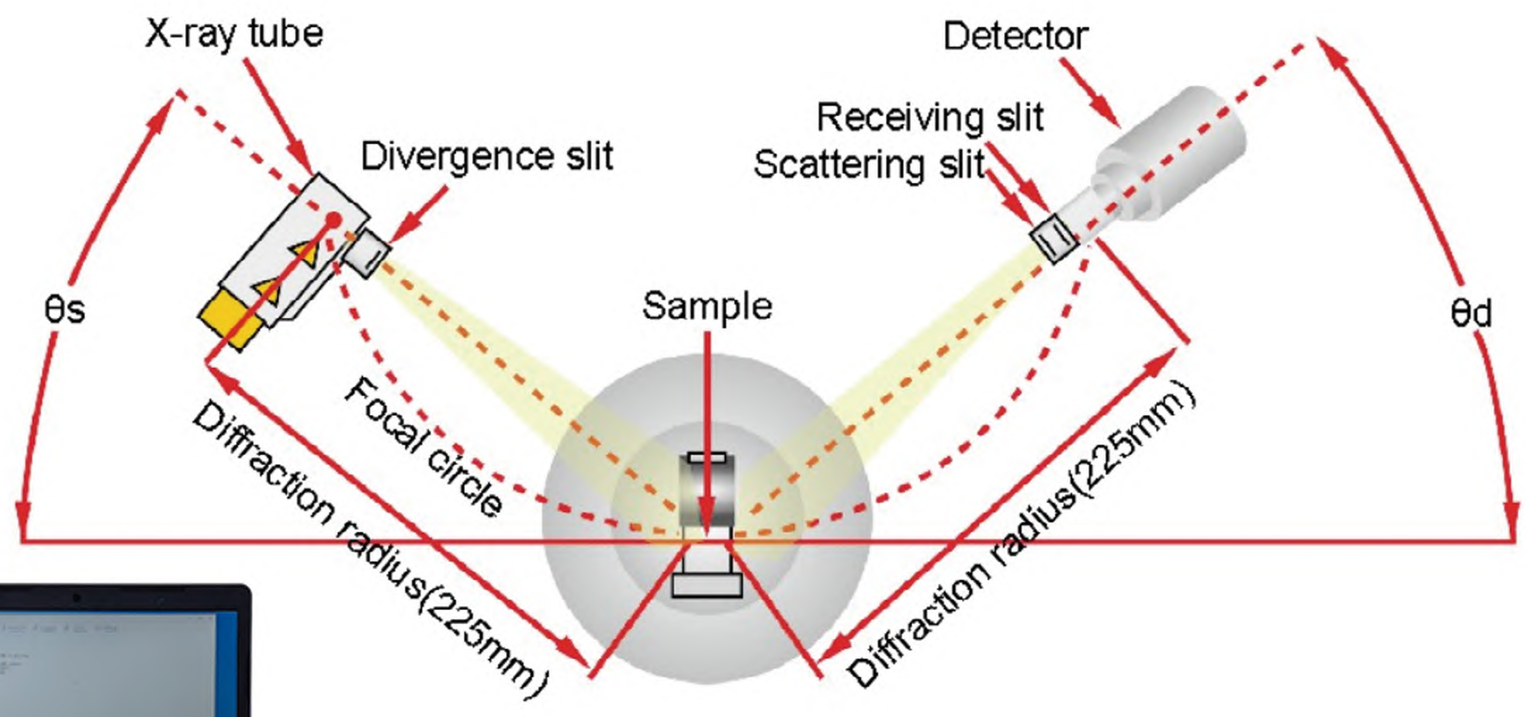
DW-27mini Desktop XRD Technical Solution

Profile：

- It is designed for commercial process and quality control. It is a concentration of advanced technology of XRD production, with multi-function and miniaturization. It can do qualitative analysis, quantitative analysis and crystal structure analysis on metal and nonmetal sample, especially for catalyst, titanium dioxide, cement and pharmacy industries.



θ-θ XRD Geometrical optical diagram

Parameters

Service rating（Tube voltage, tube current）	600W(40kV,15mA) Stability:0.005%
X-ray tube	Metal-ceramic X-ray tube, Cu target, Power 2.4kW, Focus size:1 x 10 mm; Air cooling or water cooling（water flow rate ＞1L/min）
Goniometer	θs-θd , diffraction radius 150mm
Measuring method	Continuous, stepping, Omg
Angular measurement range	Druing leakage time, θs/θd is -3°～150°.
Minimum step width	0.0001°
Angular reproducibility	0.0001°
Drive mode	servo motor drive + optical encoder control technology
Angle Positioning speed	1500°/min
Counter	Closed Proportional detector
Energy spectrum resolution	＜25%
Max. linear counting rate	≥5×105cps（Proportional）
Computer	Dell laptop

Soft ware	Controlling software	Windows 10 operating system; control the tube voltage, tube current, shutter of the X-ray generator and do aging training automatically; Control the goniometer continuous or stepping scanning and diffraction data collection; do routine processing: automatic peak-seeking, manual peaking-seeking, integrated intensity, peak height, core, background deduction, smoothness, Peak shape amplification and spectrogram comparation, etc.
	Data processing software	Qualitative and quantitative analysis of material phases , Kα1 ,α2 peeling, Full spectrum fitting, peak fitting, half-width and grain size calculation, crystal cell measuring, second kind stress calculation, diffraction line indexation, multiple plotting, 3D plotting, diffraction data calibration, background subtraction, quantitative analysis without standards, full spectral image fitting (WPF), XRD diffraction image simulation, etc.
Scattered radiation protection		Lead+ lead glass protection, shutter windows and protective guard linkage, the scattered radiation dose not exceeding 1μSv/h.
Instrument Comprehensive regulation		≤1‰
Overall dimension		600×410×670（w×d×h）mm

Standard Configuration List of DW-27mini XRD:

Part	Element Name	Unit	Qty	Remark
X-ray high-voltage Generator	①XRD40*600 high-frequency high-voltage generator X-ray generator	Set	1	Solid technology
	②X27.06 high voltage cable（100kVP）	Piece	1	Length：2.0 meter
	③3311 pipe sleeve	Set	1	
	④X25.02 stage（Metal shell）	Piece	1	Lead+ lead glass protection
	⑤AS2910/24 Metal ceramic insulation X-ray tube	Piece	1	Cu target, 2.4kW
Goniometer System	①AG-3511 goniometer	Set	1	θ-θ structure
	② Slit and powder sample holder	Piece	1	1 set for each
	③ Through-hole sample plate	Piece	5	Aluminium matrix
	④ Blind-hole sample plate	Piece	10	Quartz matrix
	⑤ Filter	Piece	1	Match with target material
	⑥ Slit Plate and Lighting System Adjustment Accessories	Set	1	
Recording and controlling system	①Closed proportional detector	Set	1	Including connecting cable
	②Recording and controlling unit	Set	1	
	③Motor and communication cable	Piece	1	2 motor cables, 1 communication cable
	④Power supply unit	Set	1	
PC system	①DELL Business notebook	Set	1	DELL
System Control and Applicable Software	① DW Series Diffractometer Control Program Software	Set	1	Windows10
	②Data processing and application software	Set	1	Jade 6
	③Diffraction data card base	Set	1	PDF2
	④Crystal Structure Data Base	Set	1	ICSD
Technical documents	① DW series XRD user manual	Copy	1	
	②Data Process and Application Software User Manual	Copy	1	
Spare parts	①Fuses 1、1.5、2、2.5、3、3+（A）	Piece	10	10 pieces for each
	②Tools	Set	1	
	③Agate Mortar ϕ100mm	Piece	1	