



**Ace MODERN ADVANCE RESEARCH
TECHNOLOGY**



XD Series Powder Diffractometer



Excellent Design of Mechanical Security



High Performance X-ray Tube Supplied by International Famous Brand

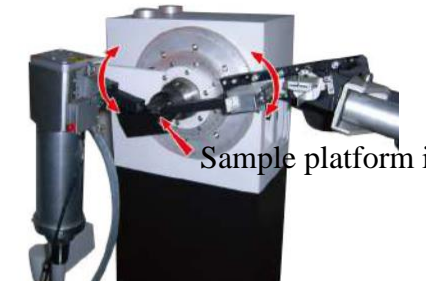


Vertical High Precision Goniometer

X-ray emission source is fixed



θ - 2θ



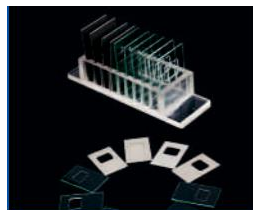
Sample platform is fixed

θ_s - θ_d

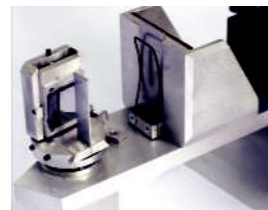
Scintillator Counter



Optional Accessories



Sample tablets



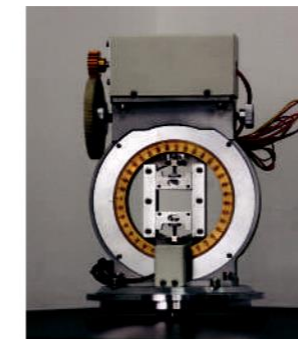
Curved graphite crystal monochromator



Punch machine



High temperature annex



Φ Scanning Annex



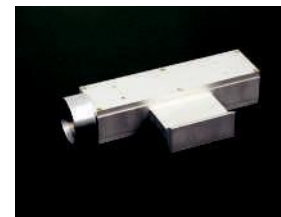
Automatic temperature control of circulating water cooling device



Agate mortar



Rotary sample platform

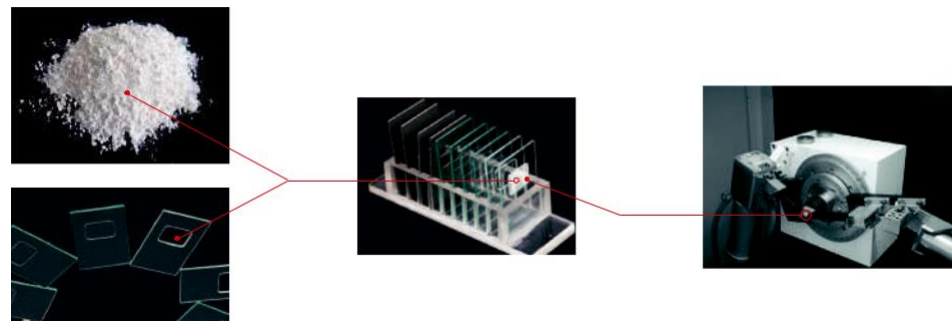


Parallel Beam Membrane

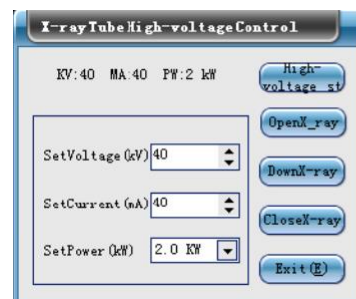
The composition and structure of materials could be studied and identified fundamentally by X-ray powder diffractometer; the applications are showed as follow:

1. The atom arrangement of all kinds of compounds in materials could be determined. Some performance of materials is related with atom arrangement.
2. Qualitative & Quantitative phase Analysis.
3. The ratio of all kinds of compounds could be determined.
4. Determine the grain size, stress, texture, orientation and crystallizable.

Analysis Process Description



Data Acquisition



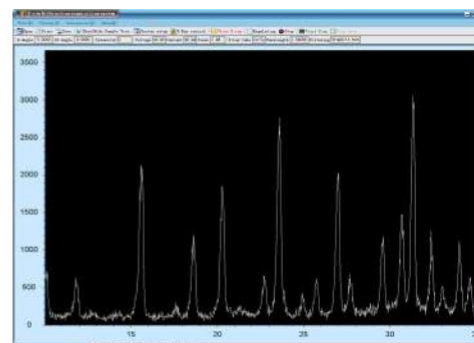
X-ray control



Scan parameters setting

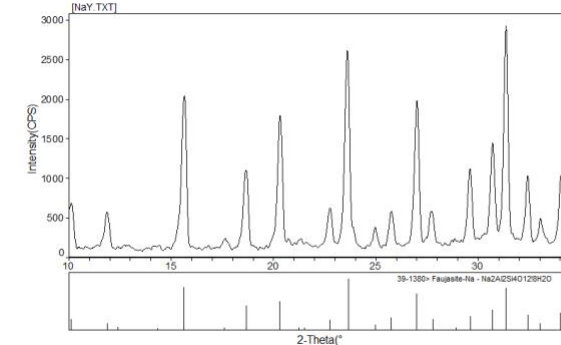


Scan parameters setting

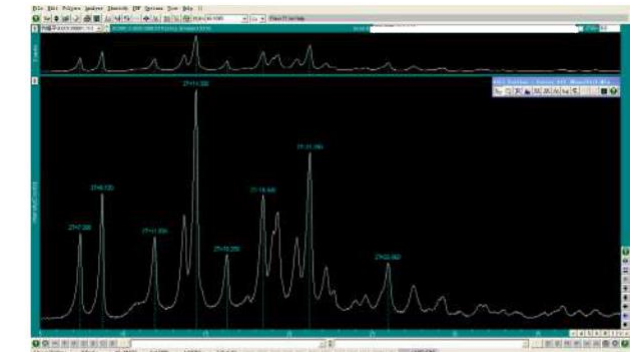


Intensity measurement

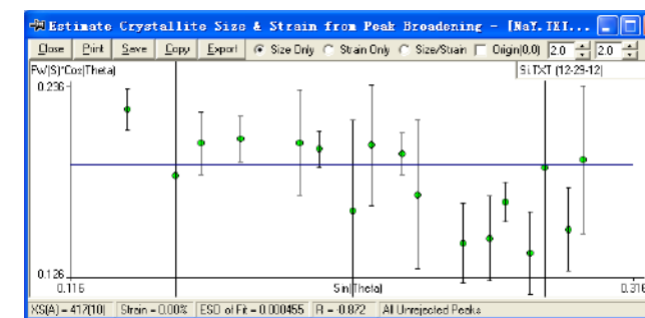
Data Analysis



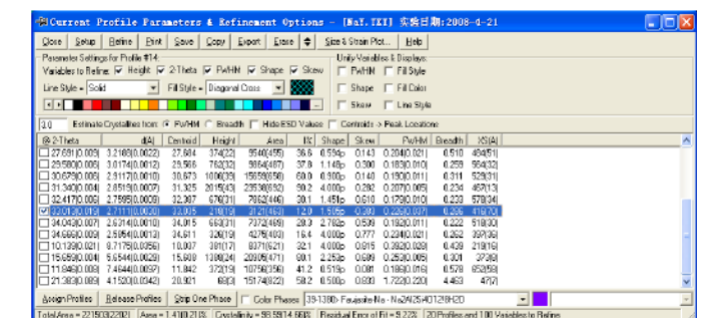
Qualitative analysis



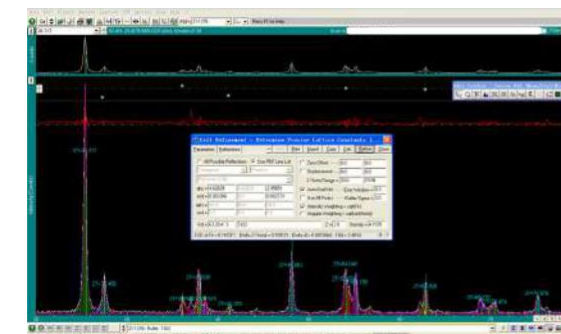
Peak search



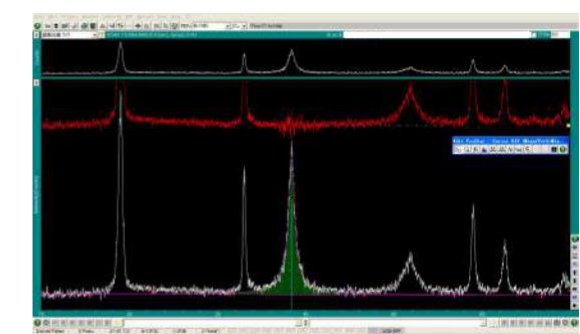
Grain size



Crystallinity



Cell parameters



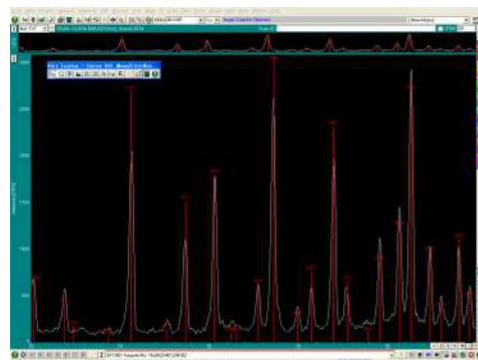
FWHM

Molecular sieves

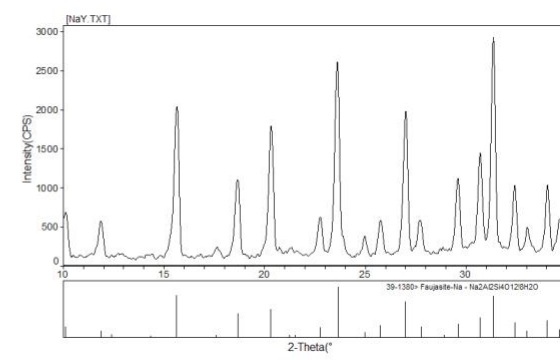
A, Y, ZSM, other types of molecular sieves.

1. Qualitative & Quantitative phase Analysis.
2. The ratio of all kinds of compounds could be determined. E.g. Si-Al ratio.
3. Determine the grain size, cell parameters, and crystallinity etc.

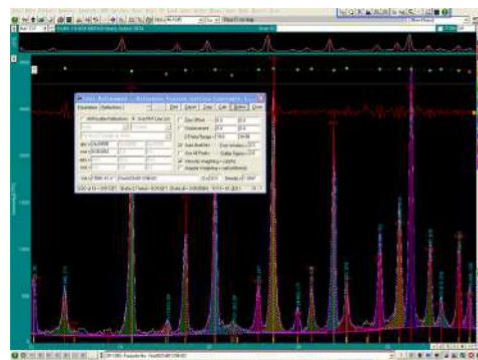
Data Analysis



Qualitative analysis



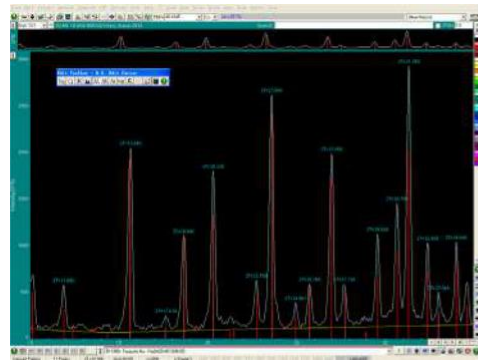
Qualitative analysis



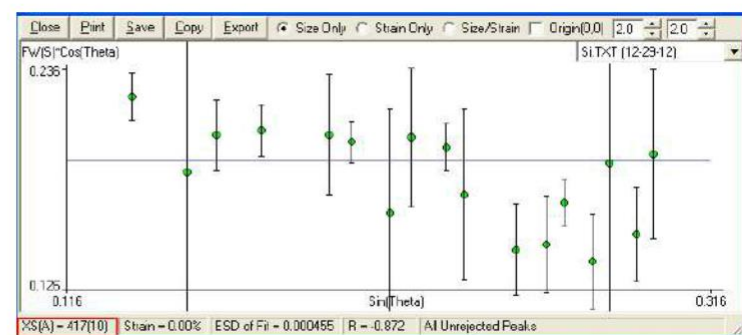
Cell parameters

2-Theta	Height	Area	Shape	Skew	FWHM	Strain
27.651(0.009)	3.2188(0.022)	27.684	374(2)	954(0.05)	36.6	0.534%
29.580(0.006)	3.0174(0.012)	29.566	762(2)	984(467)	37.8	1.14%
30.679(0.005)	2.9117(0.010)	30.673	1006(29)	15659(658)	60.0	0.900%
31.348(0.004)	2.8918(0.007)	31.325	2015(43)	23538(852)	80.2	4.00%
32.417(0.005)	2.7395(0.009)	32.387	676(3)	792(446)	30.1	1.45%
33.013(0.019)	2.7111(0.030)	33.029	218(19)	3121(82)	12.0	1.50%
34.043(0.007)	2.6714(0.010)	34.015	663(2)	737(469)	28.3	2.76%
34.696(0.009)	2.5954(0.013)	34.611	326(19)	4279(62)	16.4	4.00%
10.139(0.021)	0.7175(0.056)	10.037	381(17)	837(62)	32.1	4.00%
15.659(0.004)	5.6544(0.029)	15.608	1388(24)	20905(47)	80.1	2.25%
11.846(0.008)	7.4644(0.037)	11.842	372(19)	1079(256)	41.2	0.91%
21.382(0.009)	4.1530(0.042)	20.921	68(3)	1574(82)	59.2	0.90%

Crystallinity



Peak search



Grain size

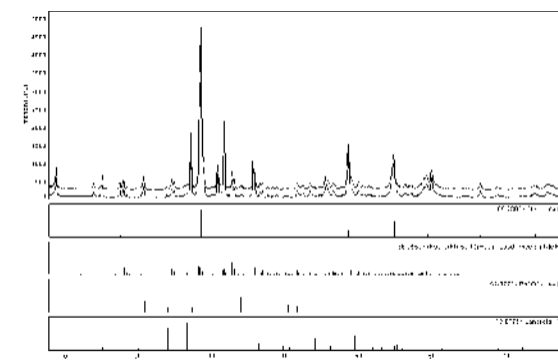
Battery

Battery: Lithium, lead, NI-MH battery, other types of battery.

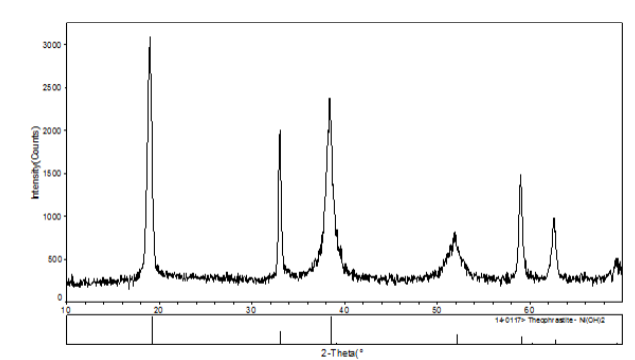
Battery material: e.g. graphite.

1. Qualitative & Quantitative phase Analysis.
2. Graphitization degree.

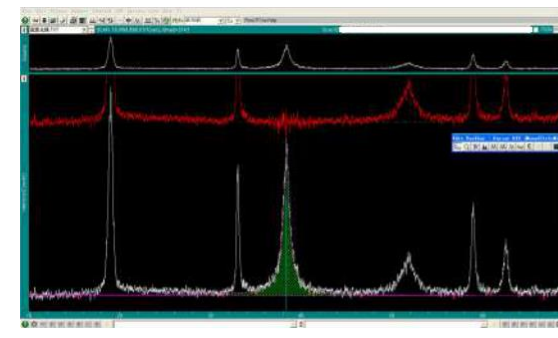
Data Analysis



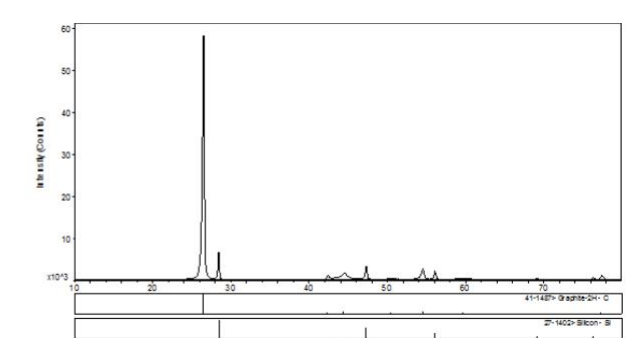
Qualitative analysis (lead battery)



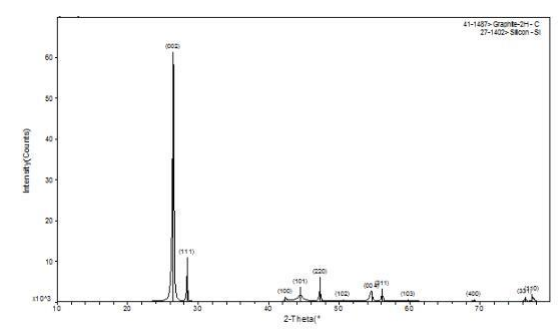
Qualitative analysis (NI-MH battery)



FWHM (lead battery)



Qualitative analysis (graphite)

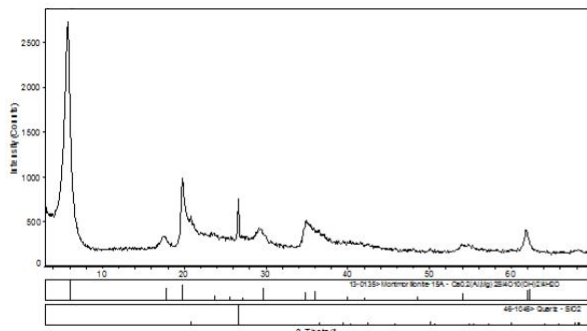


Graphitization degree

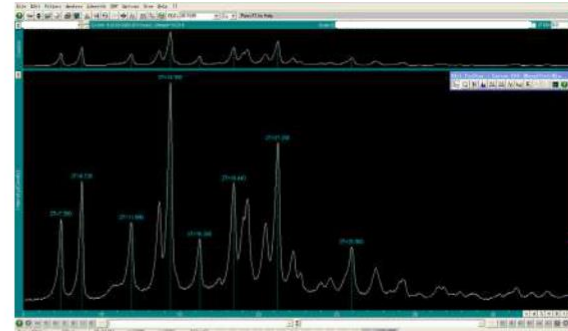
Pharmaceuticals

1. Qualitative analysis of pharmaceutical raw materials.
2. Identification of impurities.
3. Determine the grain size, crystal form, and crystallinity etc.

Data Analysis



Qualitative analysis (Montmorillonite Powder)

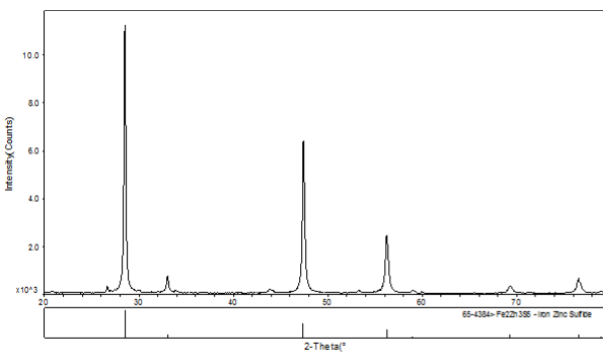


Peak search

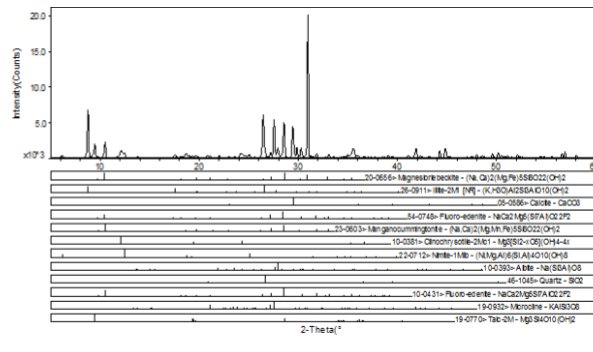
Mineral

1. Qualitative & Quantitative phase Analysis.

Data Analysis



Qualitative analysis (zinc concentrate)

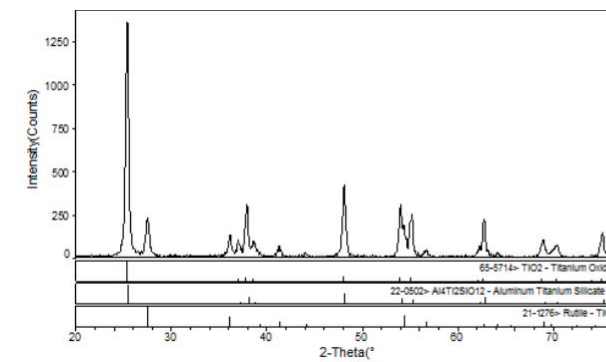


Qualitative analysis (amphibole)

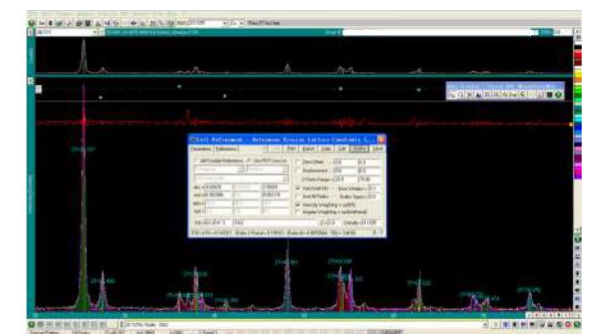
Titanium dioxide

1. Qualitative & Quantitative phase Analysis.
2. The ratio of all kinds of compounds could be determined.
3. Determine the grain size, crystal form, and cell parameters etc.

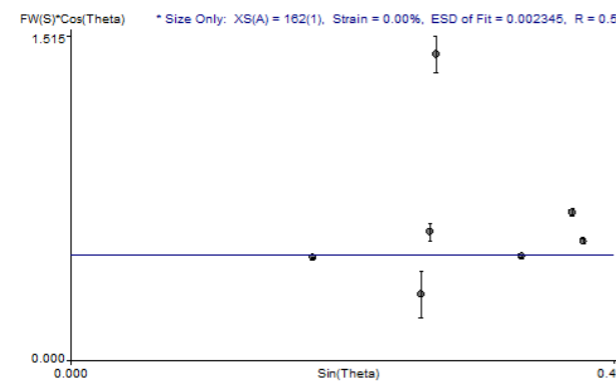
Data Analysis



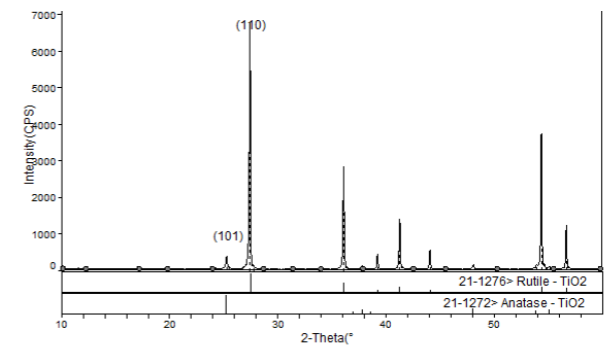
Qualitative analysis



Cell parameters



Grain size



Qualitative analysis

Specifications

XD series x-ray powder diffractometer main unit

Item	XD-2	XD-3	XD-6
X-ray Tube			
Type	Cu Target,NF Model		
Focus Dimensions	1.0×10mm ²		
Maximum Power	2 KW		
X-ray Generator			
Maximum Power	3 KW	4 KW	
X-ray Tube Voltage	15kV ~ 60kV		
Tube Voltage Step Width	1kV		
X-ray Tube Current	6mA ~ 50mA	6mA ~ 80mA	
Tube Current Step Width	1mA		
Tube Voltage,Tube Current Stability	≤0.01% (Supply Voltage Fluctuations 10%)		
Alarm Device	kV Low, kV Over Top, mA Overload, Water Discharge, Temperature		
Ray Power Protection	0.35kW, 0.7kW, 1.0kW, 1.5kW, 2.0kW, 2.7kW Six Grade		
Goniometer			
Goniometer Type	Vertical(θ-2θ)	Vertical(θ-θ)	
Scanning Radius	180mm	150mm ~ 285mm Continuously Adjustable	
Scanning Mode	θ-2θ Linkage Or θ,2θ Single Move	θ _s -θ _d Linkage Or θ _s ,θ _d Single Move	
Measurement Range (via software)	0°~ 140°(θ)	0°~ 140°(θ _d)	
Maximum Speed	120°/min	1800°/min	
Operation Mode	Continuous Scanning ,Timing Step Scanning, Constant Step Scanning		
Continuous Scanning Speed	0.125°/min ~ 120°/min		
Angle Repeatability	≤0.0006°	≤0.0005°	
Measurement Accuracy	0.001°	≤0.001°	
Minimum Step Size	0.00025°	0.0001°	
Divergence Slit(DS)	1/6°, 0.5°, 1°, 2°		
Anti-scattering Slit(SS)	0.5°, 1°, 2°		
Receiving Slit(RS)	0.1mm, 0.15mm, 0.3mm, 0.45mm, 0.6mm, 1mm, 2 mm		
Zero Dedicated Slit	0.02mm		
Detector Counter			
The Type Of Detector	Scintillator Counter		
Crystal Type	NaI		
Pulse-height Analyzer(PHA)	Output High Voltage 0V ~ 1000V Stability ≤0.01%(8h)		
Machine Cabinet			
Cabinet Size(mm)	1200(L)×800(W)×1850(H)		
Machine Weight(kg)	500		
Observation Window	600(L)×400(W)×10(T) Lead Glass		
X-ray Leakage	≤0.1μ Sv/h (Non Deduction Natural Background)		
Safety Precautions	Door Interlock Protection(The door to a designated location, light gates open only to produce X-ray)		
Filter			
Ni Filter	Corresponding Cu Target		
Integrated Whole Stability	≤0.3%		

Automatic temperature control of circulating water-cooling device (indoor unit +outdoor unit)

Model	CW-2F
Cooling Power(W)	4000
Power Supply	220V,50Hz
Input Power(W)	1800
The Largest Dimensions(mm)	Indoor Unit 600(L)×400(W)×960(H)
	Outdoor Unit
Weight(kg)	Indoor Unit 50
	Outdoor Unit
Noise(dB)	Indoor Unit ≤55
	Outdoor Unit ≤65
Cooling Water Pressure(Mpa)	0~0.7
Coolling Water Flow(L/min)	≥3.5
Ambient Temperature	5℃~ 40℃
Temperature Control Range	-49℃~ 50℃
Temperature Control Accuracy	±1℃
Warning Device	Temperature, Water Shortage

Company Overview

AceMART is a leading research technology company of analytical instrumentation. We develop, sell, maintain, and provide laboratory services and manufacture innovative products for laboratories in industry, science and governmental institutions. With our customer-oriented strategy and our high-quality service, we strive to be a World market leader.

Our technology is aimed at customer needs; it serves the well-being of people and is in accordance with ethical values, environment and nature. Our products lines include analytical systems for spectroscopy (UV/Vis, AAS and AFS), Chromatography (HPLC, GC and GCMS), X-Ray Powder Diffractometer, X-Ray Fluorescence Spectrometer.

Address in Liberia:
17th street, Sinkor Monrovia
Liberia, West Africa
TEL: (+231) 770429263

Address in China:
Wuyue Plaza, NO. 402,
Xianshuigu, Jinna District,
Tianjin City, China
TEL: (+86) 17822439303

E-mail
acemartofficial@acemart.com

www.acemartech.com