Pioneering the door to the future
with commitment to technology

Features

◆ The simplest calculated type DCM.

◆ Long 2nd crystal is mounted instead of using the translation stage to beam direction.

◆ Consists of:
   1. Crystal cooling system
   2. 1st. & 2nd. crystal alignment stages
   3. Main axis goniometer
   4. Direct beam stopper
   5. Supporting structure
   6. Vacuum chamber
   7. Controllers for motors

◆ LN2 crystal cooling

◆ Granite support table for better stability

◆ The first crystal alignment stages
   \[ D1 : +3 \sim -10 \text{ mm} \]
   \[ \theta 1 : \pm 2 \text{ degree (Coarse)} \]
   \[ : 0 \sim 33 \text{ arcsec (Fine motion by PZT)} \]

◆ The second crystal alignment stages
   \[ \phi 2 : \pm 2 \text{ degree} \]

◆ The main \( \theta \) axis
   Accuracy:
   \[ 10 \text{ arcsec / full stroke} \]
   \[ 5 \text{ arcsec / any 10 degree} \]
   Repeatability:
   \[ < 1 \text{ arcsec} \]
   Backlash:
   \[ < 5 \text{ arcsec} \]
   Encoder:
   \[ \text{ERO785 (Heidenhain)} \]

Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>KHL-6T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main ( \theta ) Height</td>
<td>1362.5 mm</td>
</tr>
<tr>
<td>Beam Offset</td>
<td>25 mm Upward</td>
</tr>
<tr>
<td>Bragg Angle Range</td>
<td>5 – 25 degree (-2 to +30 degree mechanically)</td>
</tr>
<tr>
<td>Energy Range : Si(111)</td>
<td>4.7 – 22.6 keV</td>
</tr>
<tr>
<td>Main ( \theta ) Rotation Center</td>
<td>Placed the intersection which corresponds with the normal through the center of the 1st crystal and the extension of the 2nd crystal surface.</td>
</tr>
<tr>
<td>Crystal Parallelism</td>
<td>10 arcsec (for full stroke) 2 arcsec (at any 3 degree)</td>
</tr>
<tr>
<td>Vacuum Pressure</td>
<td>4.00 x 10E-5 Pa</td>
</tr>
<tr>
<td>Crystal Size : Si(111)</td>
<td>50 x 50 x 40, 160 x 50 x 30 (L x W x T : mm)</td>
</tr>
<tr>
<td>Dimension</td>
<td>1300 x 1080 x 1780 (L x W x H : mm)</td>
</tr>
</tbody>
</table>

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Calculated type DCM <KHL-6T>

ALL MEASUREMENT is NOT with FEEDBACK

Data (Accuracy for main $\theta$) <KHL-6T>

Data (Parallelism : Pitch) <KHL-6T>

Data (Parallelism : Roll) <KHL-6T>

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  $D_1: +3 \sim -10$ mm
  $\theta_1: \pm 2$ degree (Coarse)
  : $0 \sim 33$ arcsec (Fine motion by PZT)

◆ The second crystal alignment stages
  $\varphi_2: \pm 2$ degree

◆ The main $\theta$ axis
  Accuracy:
  $10$ arcsec / full stroke
  $5$ arcsec / any 10 degree
  Repeatability:
  $<1$ arcsec
  Backlash:
  $< 5$ arcsec
  Encoder:
  ERO785 (Heidenhain)