Double Cam type DCM <NSM-1>

This typed DCM is only released by Kohzu.

It allows to optimize the distance between double crystal planes and the distance between the double crystal centers at the same time by using double cams.

**Features**

- 2 types (L and R)
- It allows to reduce the number of vacuum motors.
- The simple control by only rotating the main axis.
- The accuracy is within 10 arcsec with open loop.
- Don’t need to move other alignment stages to get a monochromatic beam in each angle.
- The quick scan is available.
- The footprint occurs on the first crystal.
- Direct beam can pass through the DCM.
- The first crystal is cooled by water.
- The first crystal alignment stages
  - Z1 : ±0.0 mm (manual)
  - \( \theta x_1 : \pm 1 \) degree (Coarse)
  - \( \pm 4.2 \) arcsec (Fine)
  - \( \theta y_1 : \pm 1 \) degree (manual)
- The second crystal alignment stages
  - Z2 : ±10 mm (manual)
  - \( \theta x_2 : \pm 1 \) degree (Coarse)
  - \( \theta y_2 : \pm 1 \) degree
- The supporting table
  - Xt : ±50mm
  - Zt : ±50mm

**Specifications**

<table>
<thead>
<tr>
<th>Model</th>
<th>NSM-1 (L, R)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beam Height</td>
<td>1200 mm (incident beam)</td>
</tr>
<tr>
<td>Beam Offset</td>
<td>25 mm Upward</td>
</tr>
</tbody>
</table>
| Bragg Angle Range | 5.0 – 72.0 degree (0 – 75 degree mechanically)  
|             | 5.0 – 50.0 degree (0 – 72 degree mechanically)  |
| Main \( \theta \) Rotation Center | Center, and surface of the second crystal |
| Output Beam Stability | ±20 um / m ( \( \theta = 5 – 10 \) degree, 60 – 70 degree)  
|             | ±10 um / m ( \( \theta = \) Except for above angle ) |
| Crystal Parallelism | 20 arcsec ( \( \theta = 5 – 10 \) degree, 60 – 70 degree)  
|             | 10 arcsec ( \( \theta = \) Except for above angle ) |
| Vacuum Pressure | 1.33 x 10E-5 Pa |
| Crystal Size  | 100 x 70 x 10 (W x L x T : mm)  
|             | 1130 x 1811 x 1675 (W x L x H : mm)  |
| Dimension    |                     |

*1 In a case of compton shield installed  *2 The crystal is not available

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Double Cam type DCM <NSM-1> Continued

Data (Main Axis Accuracy) 7 arcsec

Data (Parallelism) 7 arcsec (pitch), 5 arcsec (roll)

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◆ The first crystal alignment stages
  Z1 : ±10.0 mm (manual)
  θ x1 : ±1 degree (Coarse) : ±4.2 arcsec (Fine)
  θ y1 : ±1 degree (manual)

◆ The second crystal alignment stages
  Z2 : ±10mm (manual)
  θ x2 : ±1 degree (Coarse)
  θ y2 : ±1 degree

◆ The supporting table
  X : ±50mm
  Z : ±50mm

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