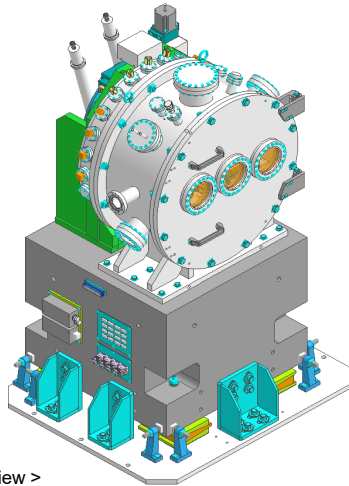
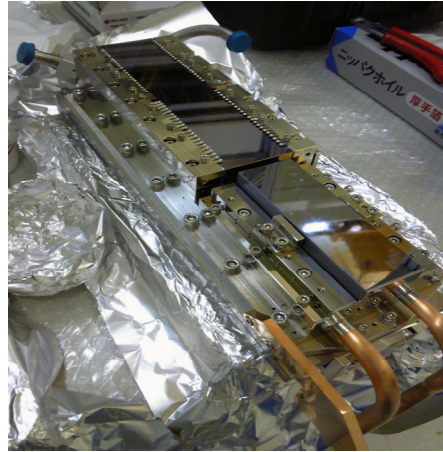


# Calculated Type Double Crystal and Multilayer Monochromator

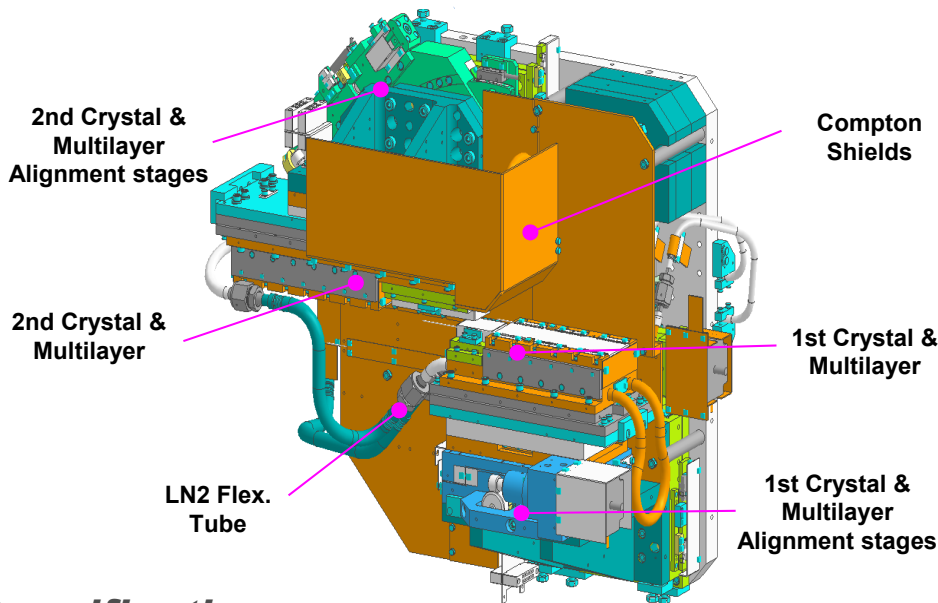
<TWF-2>



<General View >



< Crystal holder with Si and multilayer >



## Specifications

Model	TWF-2
Main $\theta$ Height	1350 mm
Beam Offset	15 mm upward for both Si and Multilayer
Bragg Angle Range	Si: 4 – 31 deg, Multilayer: 0.9 – 2.4 deg
Main $\theta$ Rotation Center	Center of the 1 <sup>st</sup> crystal and multilayer surface
Crystal Parallelism	10 arcsec (for full stroke) 2 arcsec (at any 3 degree )
Vacuum Pressure	4.00 x 10E-5 Pa
Crystal Size : Si(111)	50 x 38 x 30, 120 x 38 x 30 (L x W x T : mm)
Multilayer Size : Mo/B4C	170 x 50 x 30, 210 x 50 x 30 (L x W x T : mm)
Dimension	1030 x 1080 x 1825 (L x W x H : mm)

## Features

◆ Calculated type DCMM with crystal & multilayer.

◆ Pairs of crystal and multilayer are placed in **tandem** to X-ray beam.

◆ Crystal or multilayer have same beam offset, 15mm upward.

◆ Long 2<sup>nd</sup> crystal & multilayer are mounted instead of using the translation stage to beam direction.

◆ Consists of :

1. Crystal cooling system
2. 1<sup>st</sup>. & 2<sup>nd</sup>. crystal alignment stages
3. Main axis goniometer
4. Direct beam stopper
5. Supporting structure
6. Vacuum chamber
7. Controllers for motors

◆ LN2 both crystal & multilayer cooling

◆ Granite support table for better beam stability

◆ The first crystal alignment stages  
Z1 : -3 ~ +10 mm  
 $\chi$ 1 :  $\pm$  1 degree

◆ The second crystal alignment stages  
Z2 : +10 ~ -2.5 mm  
 $\theta$ 2 :  $\pm$ 0.5 degree (Coarse)  
: 0 ~ 23 arcsec  
(Fine motion by PZT)



# Calculated type DCMM <TWF-2>

**ALL MEASUREMENT is NOT with FEEDBACK**

## Features

◆ Calculated type DCMM with crystal & multilayer.

◆ Pairs of crystal and multilayer are placed in **tandem** to X-ray beam.

◆ Crystal or multilayer can have same beam offset, 15mm upward.

◆ Long 2<sup>nd</sup> crystal & multilayer are mounted instead of using the translation stage to beam direction.

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

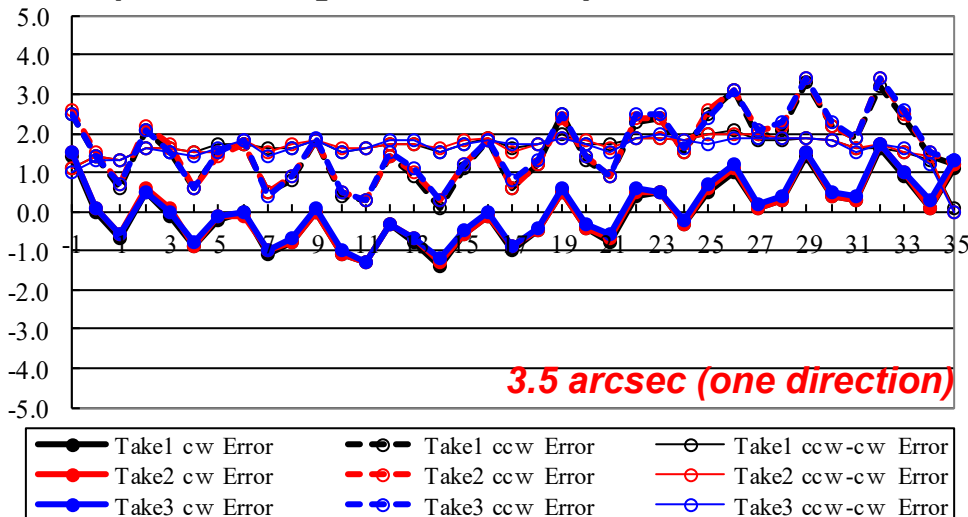
◆ LN2 both crystal & multilayer cooling

◆ Granite support table for better beam stability

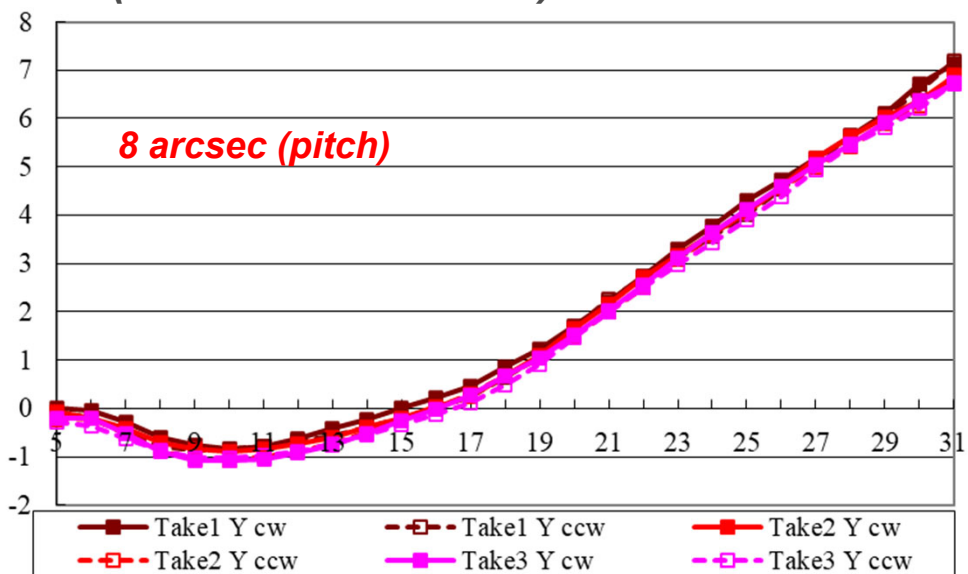
◆ The first crystal alignment stages  
Z1 : -3 ~ +10 mm  
X1 : ± 1 degree

◆ The second crystal alignment stages  
Z2 : +10 ~ -2.5 mm  
θ2 : ±0.5 degree (Coarse)  
: 0 ~ 23 arcsec  
(Fine motion by PZT)

Data (Accuracy for main  $\theta$ ) <TWF-2>



Data (Parallelism : Pitch) <TWF-2>



Data (Parallelism : Roll) <TWF-2>

