

## NdGaO<sub>3</sub> (Neodymium Gallate) Substrate

Although it has an orthorhombic crystal structure, the Ga–Ga interatomic distance is approximately 0.386 nm on the (110) and (001) planes, making it widely used as a substrate with a lattice constant intermediate between  $\text{SrTiO}_3$  and  $\text{LaAlO}_3$ .

High-quality crystals can be reliably obtained through the Czochralski (CZ) method using a stoichiometric melt.

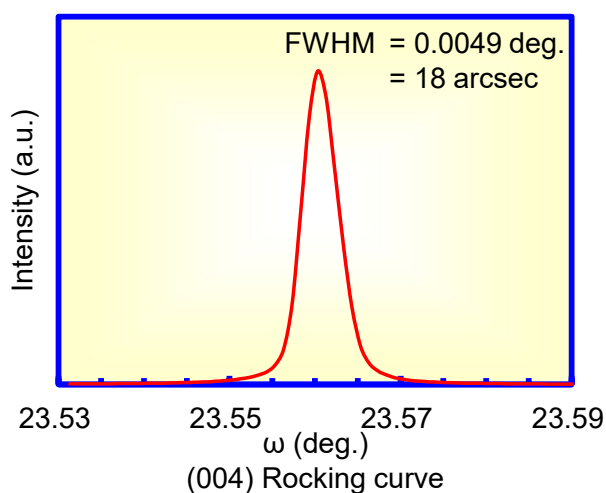
## 【Features】

- Lattice constant intermediate between  $\text{SrTiO}_3$  and  $\text{LaAlO}_3$  substrates
- High-quality crystals can be stably obtained
- In-house crystal production enables excellent QCD (Quality, Cost, Delivery) performance

### 【Characteristics】



Crystal system	Orthorhombic
Crystal structure	Perovskite
Lattice constant	a = 0.5431 nm b = 0.5499 nm c = 0.7710 nm
Melting point	1650 °C
Density	7.56 g/cm <sup>3</sup>
Dielectric constant	20~25 (27°C, 1MHz)
Thermal expansion	10 × 10 <sup>-6</sup> /°C



Detail site

### 【Standard Specifications】

Orientation	(100) , (001) , (110) , (011) Tolerance : $\pm 0.5^{\circ}$
Size	$10 \times 10 \times 0.5\text{mm}$ $15 \times 15 \times 0.5\text{mm}$ Tolerance (outside dimension) : $\pm 0.1\text{ mm}$ Tolerance (thickness) : $\pm 0.05\text{ mm}$
Polishing	One-side / Both-side
Surface roughness	$Ra \leq 1.0\text{nm}$ , $Rmax \leq 5.0\text{nm}$
Flatness	$10 \times 10 \times 0.5\text{mm} : \leq \lambda$ $15 \times 15 \times 0.5\text{mm} : \leq 1.5\lambda$ ( $\lambda = 632.8\text{nm}$ )

If you are looking for other specs, please contact us.

**All figures in graph and table are typical data (not guaranteed).**

## NdGaO<sub>3</sub> Model list

Size (mm)	Polishing	Orientation			
		(100)	(001)	(110)	(011)
10x10x0.5mm	One-side	○	○	★	△
"	Both-side	△	△	△	△
15x15x0.5mm	One-side	△	△	△	△
"	Both-side	△	△	△	△

★:Planned inventory

○:Standard

△:Made-to-order

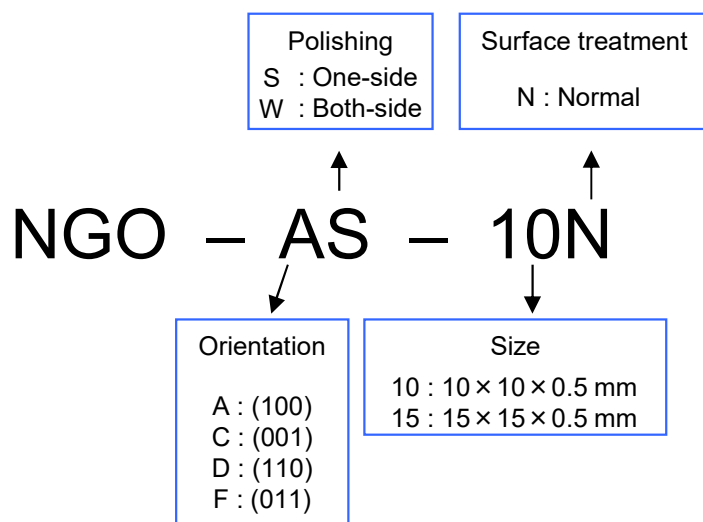
*Planned inventory: Production is regularly managed to ensure prompt delivery.*

*(Please note that specifications may change without prior notice.)*

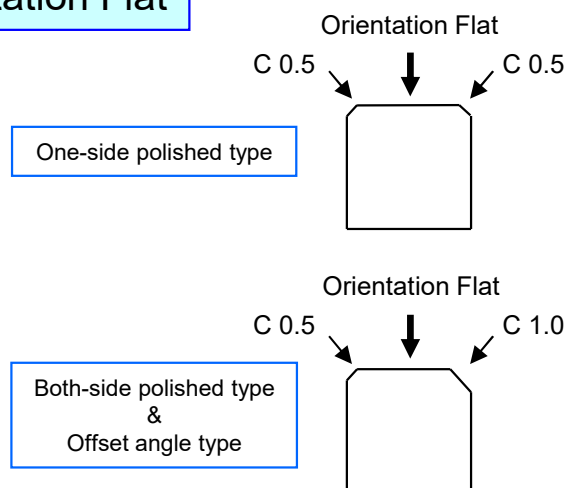
*We also accept orders for different sizes and off-spec substrates.*

*Please contact us for details.*

## Model Number



## Orientation Flat



Substrate Orientation	Orientation Flat
(100)	(001)
(001)	(100)
(110)	(001)
(011)	(001)

<Visual check note>

We pass over the following:

(a) Chips within 0.2mm from the circumference of substrates

(b) Chips on the edge strip under 1/2 size of substrate thickness

(c) Scratches and blemish on the back side of single-side polished substrates

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