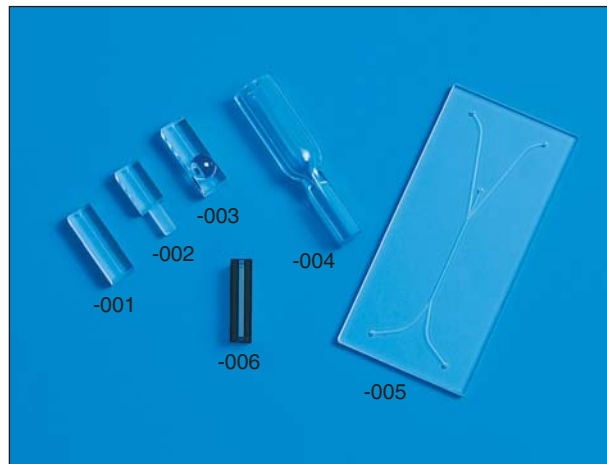


OVERVIEW

Hamamatsu provides a wide variety of precision glass products such as flow cells. These are designed and manufactured based on our 60 years of experience in the production of vacuum tubes such as photomultiplier tubes along with our well-established glass processing technology. We welcome your requests for custom products.

FEATURES

- High dimensional accuracy: Minimum tolerance ± 0.005 mm
- Available in various shapes (polishing, grinding, gas processing, lens bonding)
- Materials: synthetic fused silica, synthetic black quartz, etc.
- Custom products with sample inlet/outlet mechanism available



APPLICATIONS

- Flow cytometry
- Blood analysis
- Imaging flow cytometry
- Particle counter

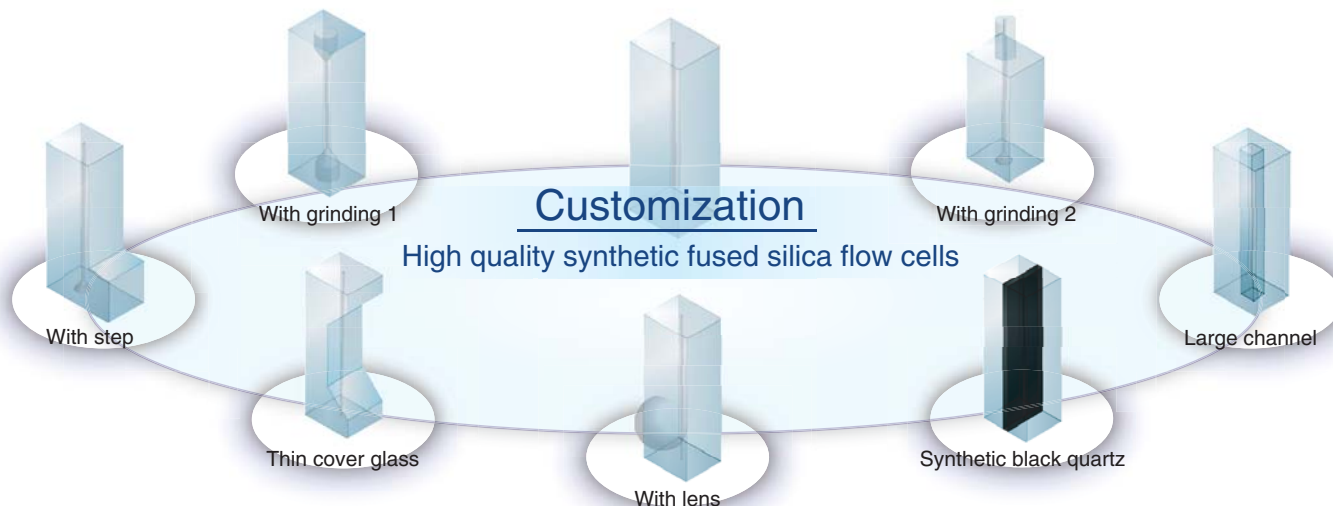
SPECIFICATIONS

Type No.	Material	Flow channel size (mm)	Features
J11020-000-001	Synthetic fused silica	0.25 ± 0.025	Standard type. Suitable flow channel for detecting minute particles.
-002			Grinded type. Standard type with nipple-type outlet.
-003			Standard type flow cell with a synthetic fused silica hemisphere lens attached by UV glue.
-004			Combined glass pipe with flow cell by gas-process. Smooth laminar flow and hydrodynamic focusing.
-005		Trapezoid *2	Plate type.
-006	Synthetic fused silica *1 Synthetic black quartz	1.0 ± 0.025	Synthetic black quartz glass type. Less stray light and low fluorescence from material.

*1: Index of refraction of synthetic fused silica: nC (656 nm) 1.456, nd (587 nm) 1.458, nF (486 nm) 1.463

*2: Upper base: 0.2 mm ± 0.03 mm, Lower base: 0.15 mm ± 0.03 mm, Height: 0.2 mm ± 0.03 mm

Customization options: Size, shape, etc.



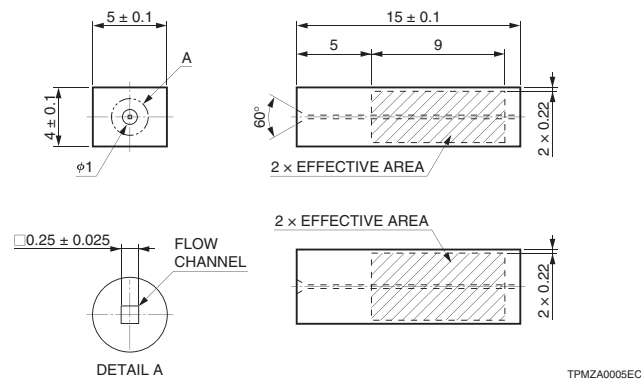
FLOW CELLS

●Surface quality

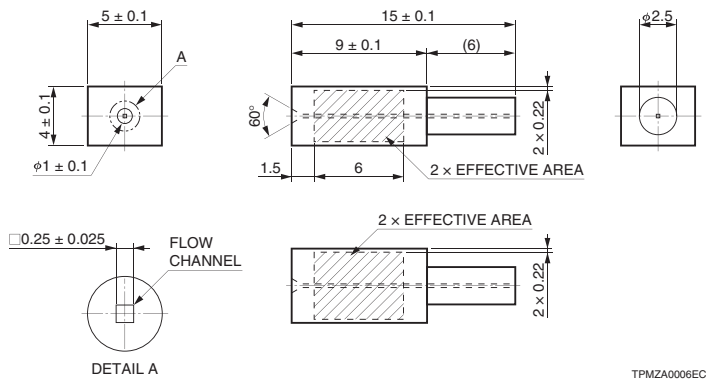
Parameter	Optical active areas or flow channel	Other polished surfaces
Scratch	Width 0.004 mm Max.	Width 0.02 mm Max.
Dig	Size 0.025 mm Max.	Size 0.1 mm Max.
Bubble and inclusion	Size 0.025 mm Max.	Size 0.1 mm Max.
Chipping	Width 0.025 mm Max.	Width 0.1 mm Max.
Stain	Size 0.01 mm Max.	Size 0.1 mm Max.

●Dimensional outline (Unit: mm)

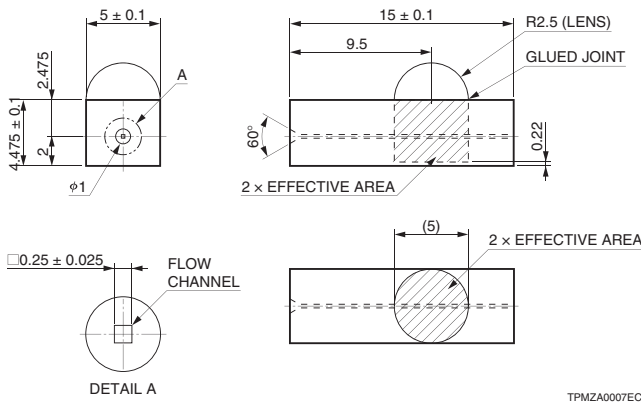
J11020-000-001



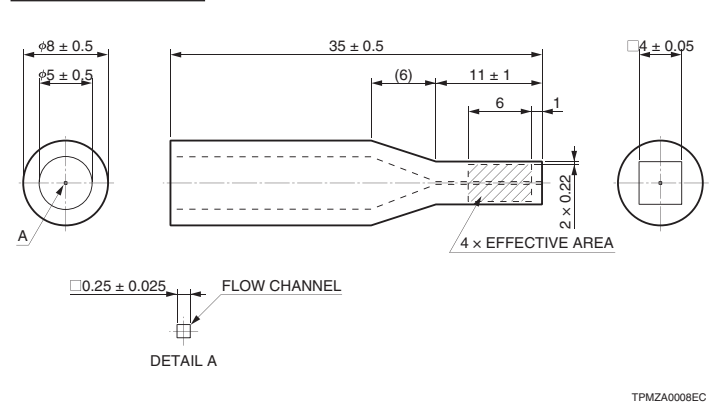
J11020-000-002



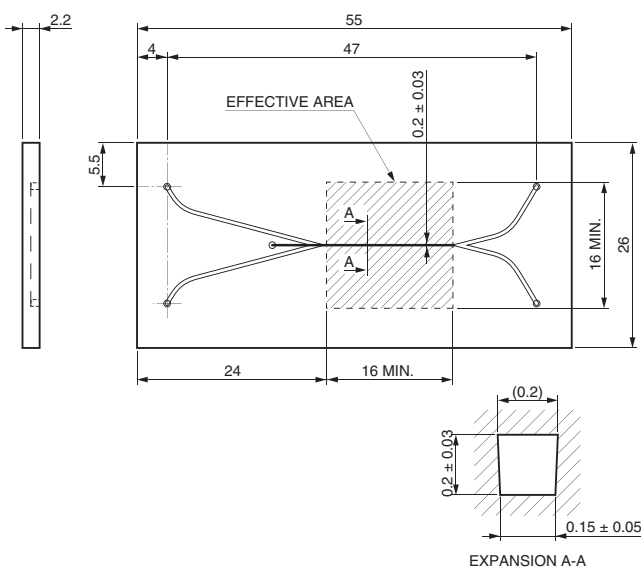
J11020-000-003



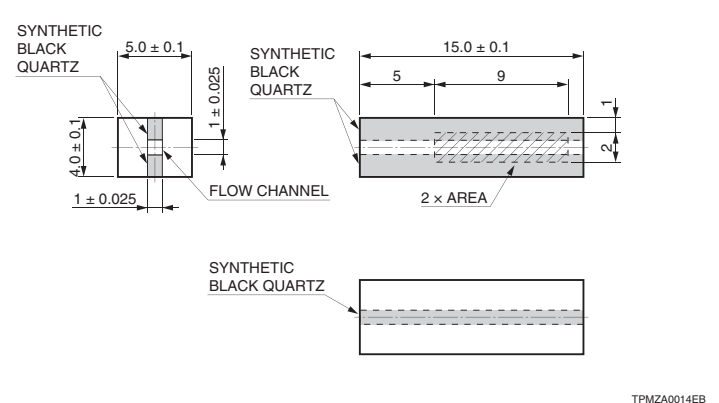
J11020-000-004



J11020-000-005



J11020-000-006

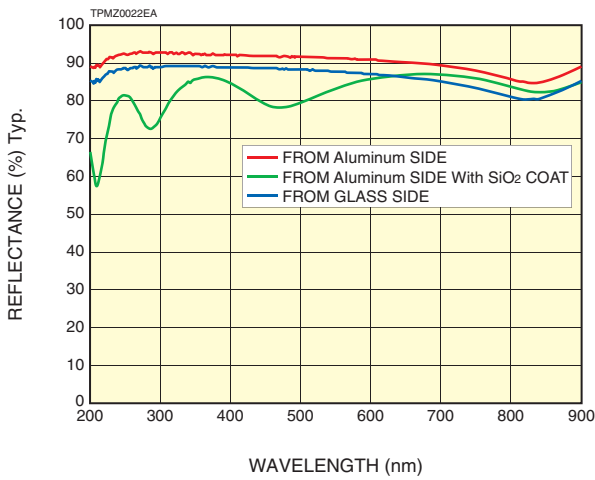


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● **Other capabilities**

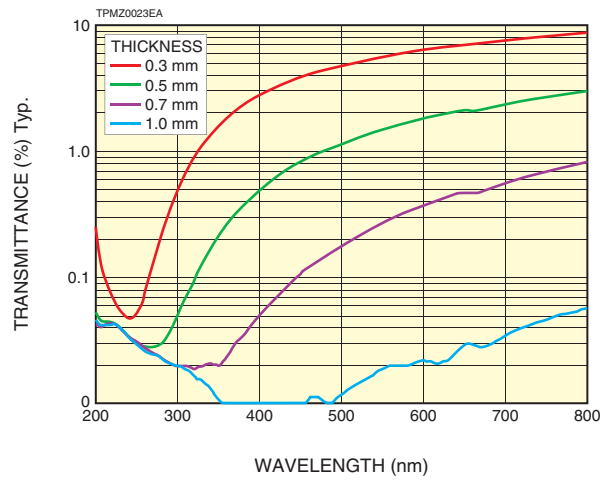
Mirror coating

Ex.: Aluminum mirror: reflectance characteristics



* The values on the above chart are sample values only

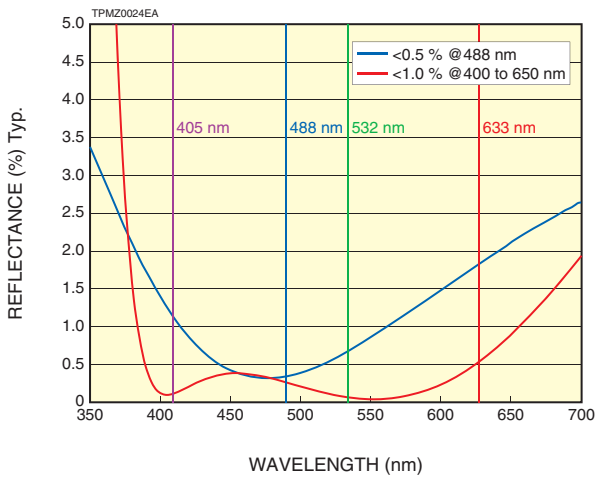
Transmittance of synthetic black quartz



* The values on the above chart are sample values only

Optical thin film coating

Ex.: AR (Antireflection) coating: reflectance characteristics



* The values on the above chart are sample values only

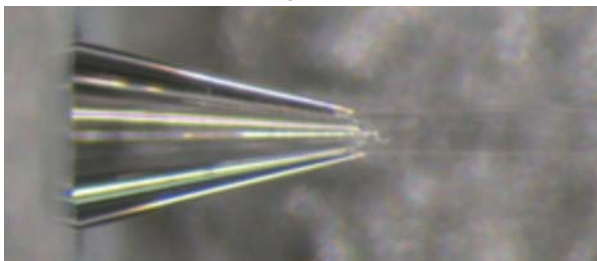
Marking



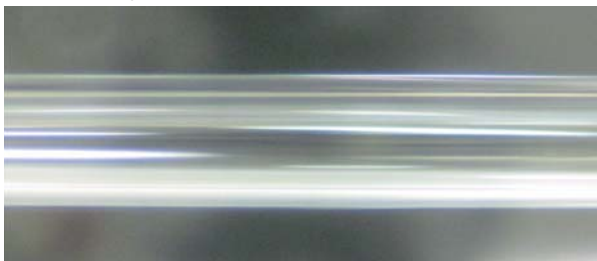
- Serial number
- Part number
- Flow path diameter

Clear polishing for grinded inner surface

Ex.: Conical shape / 30 deg

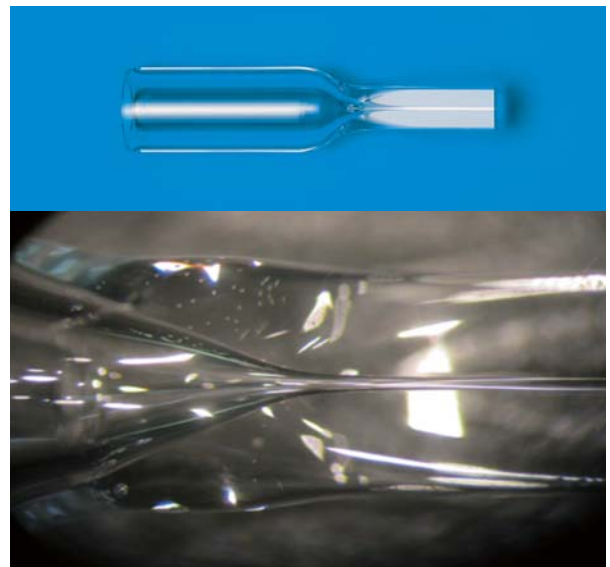


Ex.: Micro cylindrical / 0.5 mm diameter



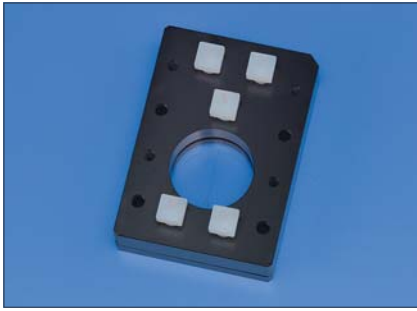
Fusion welding

Ex.: J11020-000-004



FLOW CELLS

FLOW CELL ASSEMBLY J12800 SERIES



▲J12800-000-101



▲J12800-000-103

FEATURES

- Alignment free
- Can use commercial tube fitting
- Easy to install
- Repetition stability
- Stable laminar flow

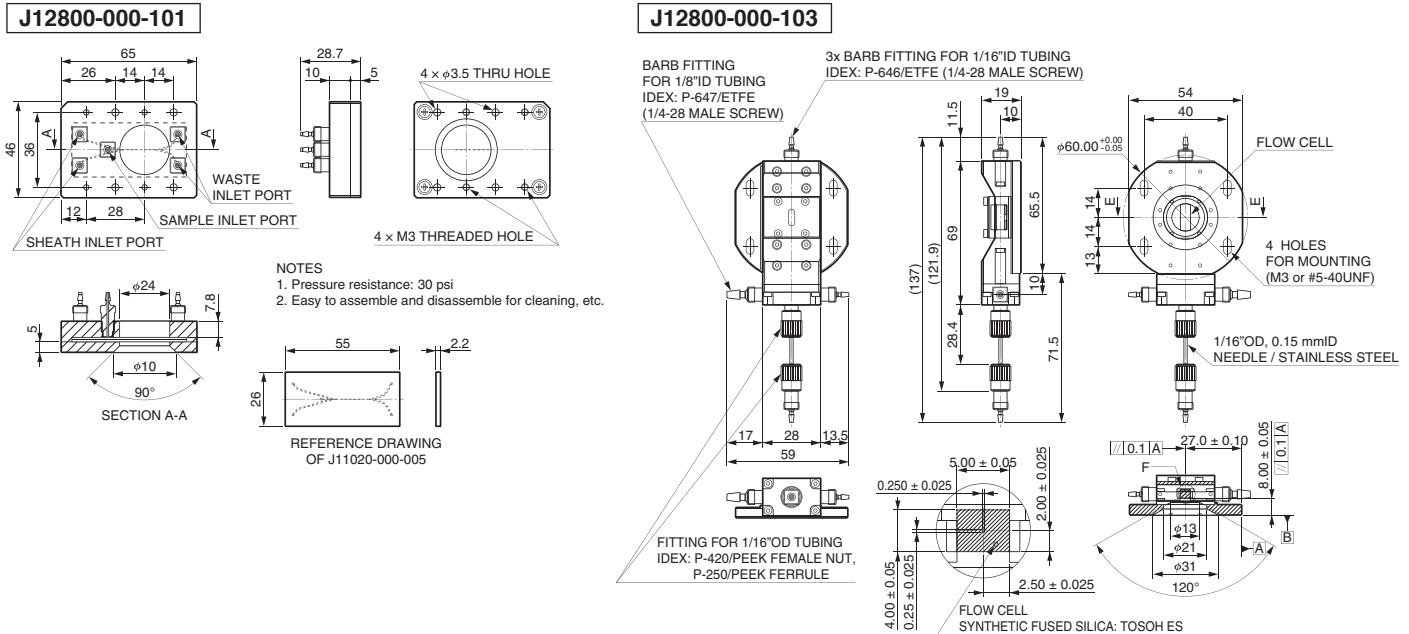
TECHNOLOGIES

- Proposed assembly structure design based on laminar flow model
- Flow simulation technology
- High pressure toughness

SPECIFICATIONS

Parameter		J12800-000-101	J12800-000-103	Unit
Flow cell	Flow channel	Please refer to J11020-000-005	250 × 250	μm
	Outside dimension		20.0 (H) × 5.0 (W) × 4.0 (D)	mm
	Material		Synthetic fused silica	
Assembly	Outside dimension	65.0 (H) × 46.0 (W) × 28.7 (D)	137.0 (H) × 59.0 (W) × 19.0 (D)	mm
	Accuracy of position	—	± 100	μm
	Fitting of sheath port	for 1/16ID tubing	for 1/8ID tubing	inch
	Fitting of the other ports	for 1/16ID tubing		inch
	Control pressure	-50 to +200	+10 to 70	kPa

●Dimensional outline (Unit: mm)



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