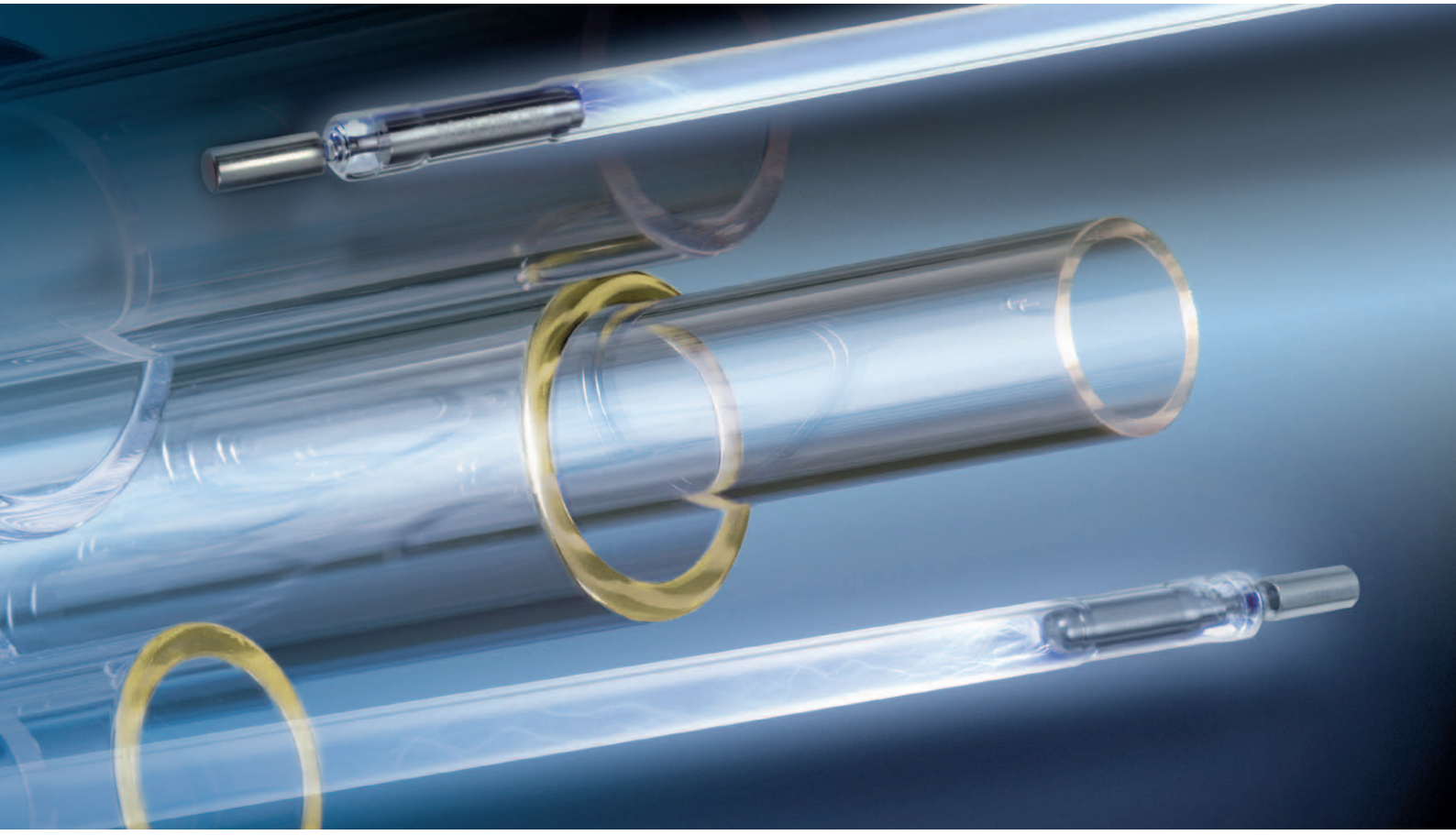
Heraeus



M 382 Plus / M 382 S Plus – Cerium doped fused quartz tubes and sleeves

M 382 Plus is a high purity semi-synthetic quartz with Cerium dopant blocking UV-transmission below 382 nm. It is typically used in applications in which high surface quality, good homogeneity and low bubble content are required. These include:

- Short arc lamps
- High energy laser flash lamps
- Continuous pulse laser lamps
- Solarization resistant lamps
- Laser excitation lamps

M382 Plus is produced by oxy-hydrogen flame fusion. The raw material is produced from high purity synthetic quartz crystals and a cerium containing dopant.

Cerium not only inhibits part of the UV spectrum but also improves laser efficiency due to its fluorescence. Heraeus proprietary multi-step production process allows the drawing of tubing without contact with any tooling. This eliminates any surface contamination and produces a nearly blemish free surface, no airlines, a very low bubble content and high homogeneity.

Due to the “free drawn” multi-step production process these tubes are available in a large range of diameters and wall thicknesses. It allows low minimum order quantities as well.

M 382 S Plus is similar to M 382 Plus but with improved UV blocking properties around 250nm.

M 382 Plus / M 382 S Plus – Cerium doped fused quartz tubes and sleeves

Dimensions (mm)

Outer Diameter	Tolerance	Wall thickness	Tolerance
≥ 2.0 – ≤ 8.0	± 0.3	≥ 0.4 – ≤ 0.5	± 0.15
		> 0.5 – ≤ 1.2	± 0.2
		> 1.2 – ≤ 2.0	± 0.3
> 8.0 – ≤ 17.0	± 0.4	≥ 0.8 – ≤ 1.2	± 0.2
		> 1.2 – ≤ 2.0	± 0.3
		> 2.0 – ≤ 2.8	± 0.4
		> 2.8 – ≤ 3.5	± 0.5
> 17.0 – ≤ 25.0	± 0.6	≥ 1.0 – ≤ 1.2	± 0.2
		> 1.2 – ≤ 2.0	± 0.3
		> 2.0 – ≤ 2.8	± 0.4
		> 2.8 – ≤ 3.7	± 0.5
		> 3.7 – ≤ 4.5	± 0.6
		> 4.5 – ≤ 6.0	± 0.7
> 25.0 – ≤ 30.0	± 0.7	> 1.2 – ≤ 2.0	± 0.3
		> 2.0 – ≤ 2.8	± 0.4
		> 2.8 – ≤ 3.7	± 0.5
		> 3.7 – ≤ 4.5	± 0.6
		> 4.5 – ≤ 6.0	± 0.7
> 30.0 – ≤ 35.0	± 0.8	> 1.2 – ≤ 2.0	± 0.3
		> 2.0 – ≤ 2.8	± 0.4
		> 2.8 – ≤ 3.7	± 0.5
		> 3.7 – ≤ 4.5	± 0.6
		> 4.5 – ≤ 6.0	± 0.7
> 35.0 – ≤ 40.0	± 1.0	> 1.2 – ≤ 2.0	± 0.3
		> 2.0 – ≤ 2.8	± 0.4
		> 2.8 – ≤ 3.7	± 0.5
		> 3.7 – ≤ 4.5	± 0.6
		> 4.5 – ≤ 6.0	± 0.7

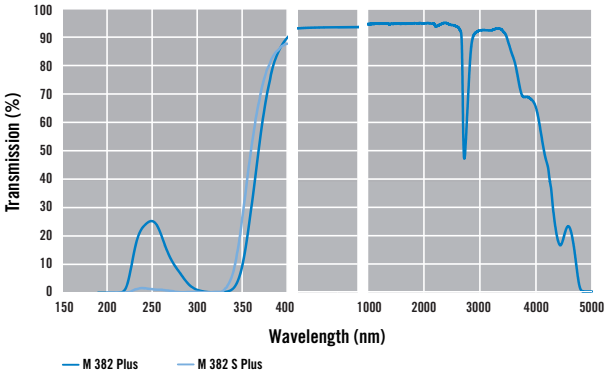
Other dimensions and tolerances on request.

Properties and Applications

Properties	M 382 Plus / M 382 S Plus
UV blocking	●
Homogeneity	●
Best surface finish	●
Application	
Long arc lamps (e.g. laser excitation)	●
Pulsed and continuous flash lamps	●

● *ideally suited* ● *ipartially suited*

Typical Spectral Transmittance of M 382 Plus / M 382 S Plus



Typical chemical impurities (bulk) (ppm, µg/g)

	Li	Na	K	Mg	Ca
M 382 Plus / M 382 S Plus	1	1	0.1	0.1	0.1
	Fe	**Cu**	**Cr**	**Mn**	**Al**
M 382 Plus / M 382 S Plus	0.2	0.1	0.1	0.05	10

OH content* (ppm, µg/g)

M 382 Plus / M 382 S Plus	130 – 220

*No change in OH content through annealing.

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