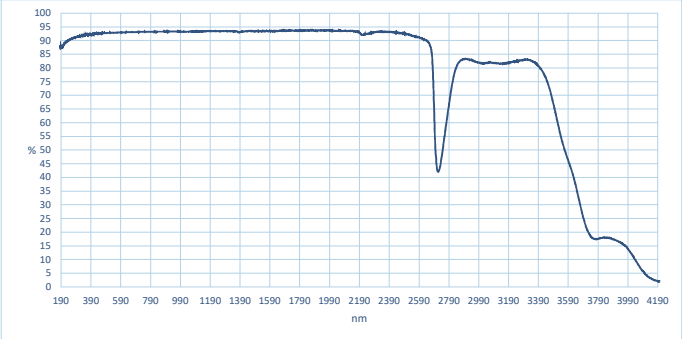
# Fused Silica KU1, KUVI, KV, KI

**KU1** transmission per 10mm incl. Fresnel reflection

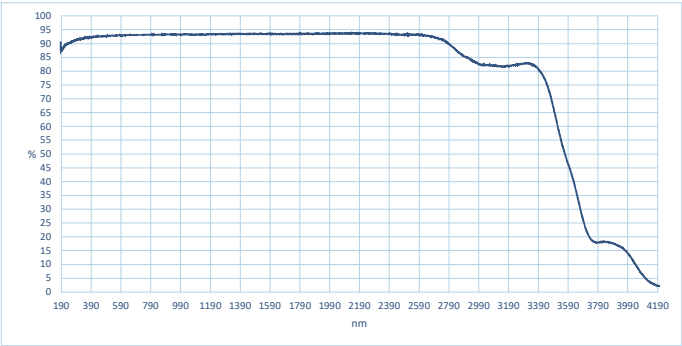



KU1 standard grade
(as a rule no bubbles, no striae, but not specified) 150 EUR/kg
ca.300-500x300-500x60-70mm, ca.25-40kg

KU1 standard grade
(as a rule no bubbles, no striae, but not specified) 165 EUR/kg
ca.150-250x150-250x60-70mm, ca.6-10kg

KU1 laser grade
(no bubbles, no striae) 264 EUR/kg
ca.400-500x300-350x60-70mm, ca.15-30kg

**KUVI** transmission per 10mm incl. Fresnel reflection



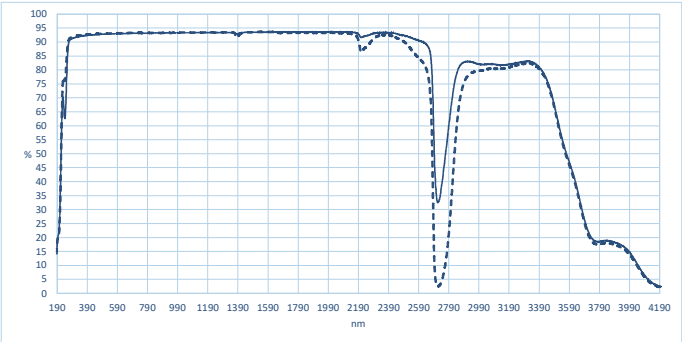

KUVI laser grade
(no bubbles, no striae) 1,254 EUR/kg
ca.400-500x400-500x200-250mm, ca.70-135kg

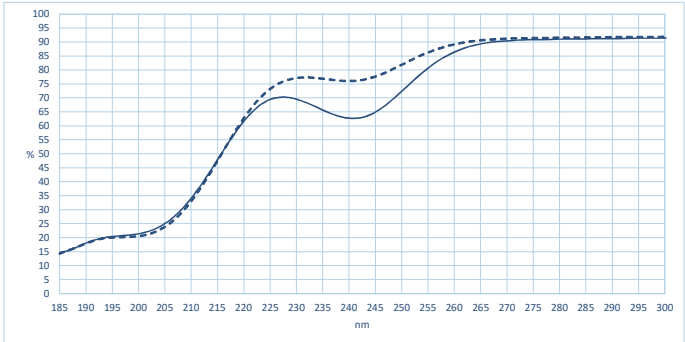
KV Type I technical grade
(bubbles and striae are not specified, possible) 132 EUR/kg
ca.200x300x60-75mm, ca.10kg

KV Type II standard grade
(bubbles and striae are not specified, possible) 182 EUR/kg
ca.200x300x60-75mm, ca.10kg

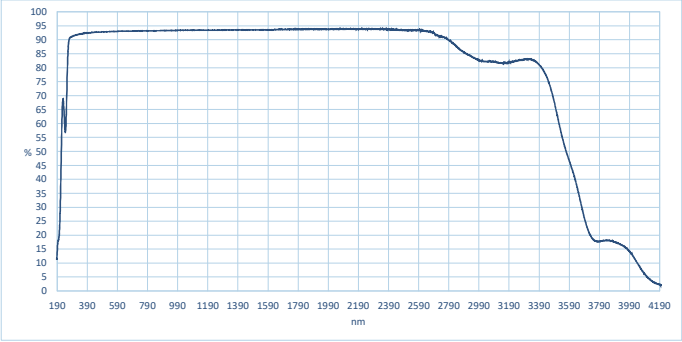
KI technical grade
(bubbles and striae are not specified, possible) 842 EUR/kg
ca.200x300x60-75mm, ca.10kg

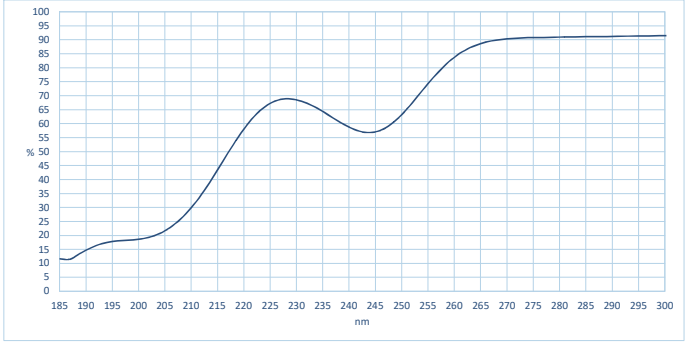
**KV Type I** and **KV Type II (dashed)** transmission per 10mm incl. Fresnel reflection




**KI** transmission per 10mm incl. Fresnel reflection



# Fused silica KU1, KUVI, KV, KI

**refraction**

| λ [nm] | KU1 | KUVI | KV / KI |
|---|---|---|---|
| 170.0 | 1.615 | 1.615 | |
| 185.0 | 1.57502 | 1.57509 | |
| 194.2 | 1.55892 | 1.55899 | |
| 214.4 | 1.53372 | 1.53379 | |
| 280.3 | 1.49404 | 1.49409 | 1.4944 |
| 302.2 | 1.48719 | 1.48724 | 1.4880 |
| 365.0 | 1.47454 | 1.47460 | 1.4746 |
| 404.7 | 1.46962 | 1.46967 | 1.4698 |
| 435.8 | 1.46662 | 1.46675 | 1.4668 |
| 546.1 | 1.46008 | 1.46014 | 1.4602 |
| 587.6 | 1.45846 | 1.45852 | 1.4586 |
| 589.3 | 1.45840 | 1.45847 | 1.4586 |
| 643.8 | 1.45670 | 1.45676 | |
| 656.3 | 1.45637 | 1.45643 | 1.4565 |
| 706.5 | 1.45515 | 1.45521 | |
| 852.1 | 1.45247 | 1.45253 | 1.4526 |
| 1014.0 | 1.45024 | 1.45030 | |
| 1083.0 | 1.44941 | 1.44947 | 1.4497 |
| 1128.7 | 1.44887 | 1.44893 | 1.4487 |
| 1395.1 | 1.44584 | 1.44590 | 1.4459 |
| 1709.1 | 1.44208 | 1.44214 | |
| 1813.1 | 1.44070 | 1.44076 | 1.4410 |
| 2058.1 | 1.43722 | 1.43730 | 1.4382 |
| 2437.4 | 1.43095 | 1.43102 | 1.4318 |
| 2500.0 | | | |
| 2720.0 | | | |
| 2800.0 | | | 1.4239 |
| 2900.0 | | | |
| 3000.0 | | | 1.4194 |
| 3100.0 | | | |
| 3243.9 | 1.41312 | 1.41319 | 1.4144 |
| 3302.6 | 1.41154 | 1.41162 | |
| 3507.0 | 1.40568 | 1.40575 | 1.4090 |
| 3706.7 | 1.39929 | 1.39937 | |

| properties | KU1 | KUVI | KV / KI |
|---|---|---|---|
| density, g/cm$^3$ | 2.2 | 2.2 | 2.2 |
| Young module, kg/mm$^2$ | 7,28 | 7,16 | 7,20 |
| Poisson ratio | 0.17 | 0.17 | 0.17 |
| compression strength, kg/mm$^2$ | 120 | 110 | 115 |
| bending strength, kg/mm$^2$ | 7.0 | 6.9 | 7.0 |
| tensile strength, kg/mm$^2$ | 5.6 | 5.5 | 5.5 |
| torsional rigidity, kg/mm$^2$ | 3,15 | 3,14 | 3,10 |
| Vicker hardness, kg/mm$^2$ | 950 | 940 | 940 |
| Knoop hardness, kg/mm$^2$ | 680 | 680 | 620 |
| CTE, 1/K | 5.5x10$^{-7}$ | 5.5x10$^{-7}$ | 5.5x10$^{-7}$ |
| softening point, °C | 1,700 | 1,700 | 1,730 |
| annealing point, °C | 1,160 | 1,160 | 1,180 |
| strain point, °C | 1,060 | 1,060 | 1,080 |
| specific heat at 20°C, kJ/kg x K | 0.74 | 0.74 | 0.74 |
| thermal condustivity, W/m x K | 1.1 | 1.1 | 1.4 |
| metal impurities, ppm | <0.01 | <0.01 | 0.1-20 |
| Cl, ppm | <5 | <2000 | - |
| OH, ppm | <200 | <1 | <50 (KV)<br><5 (KI) |

**Note**
KUVI is the broad band fused silica with good transmission between 2µm and 3.5µm and the rest absorption below 1ppm/cm at 1000...1100nm. It is suitable for high power laser applications.

**dispersion**

| λ [nm] | ν(λ) |
|---|---|
| e-line 546.2 | 67.7 |
| d-line 587.7 | 67.8 |

**recommended polishing slurries**
- OXAPA BS SP
- OXAPA BS 69
- OXAPA BS N
- OXAPA BS PLUS
- OXAPA BS NANO *for finishing*

**recommended polishing pads**
- OXAPA polishing pad hard 8
- OXAPA polishing pad intermediate 5
- OXAPA polishing pad soft 4, 19

**recommended polishing pitches**
- OXAPA PP 15-45