

Quartz Rod

Applications

Semiconduct **Optical Fiber** **Solar**

Characteristics

**Temperature stability, Heat shock resistance,
Low thermal expansion, Corrosion resistant**



Fused quartz rods manufactured by JNC Quarzglas are available in various material grades and dimensions.

NC-100

NC-100 series single-step quartz rods are directly drawn in a continuous electrical fusion process that covers an outer diameter range from 10 mm – 30 mm . These standard quality direct drawn quartz rods are a cost efficient solution for many industrial applications.

for example:electric heater,semiconductor material,optical fiber parts and so on.

NC-120 adopt high purity quartz sand,the metal concentrations is low,and low bubble content which is suitable high end application.



The oxhydryl content of NC-100 and NC-120 series are reduced by the furnace,according the requirement of customer.

Chemical element composition (Typical data) ppm

	Al	Fe	K	Li	Cu	Na	B	Ca	Mg	P	Ti	OH
NC-200	20	0.4	1	1.4	0.01	1.5	0.2	0.5	---	---	---	120-260
NC-210	15	0.2	0.6	0.4	0.02	0.8	0.1	0.4	0.05	0.06	1.2	120-260
NC-220	8	0.2	0.2	0.1	0.01	0.4	----	0.6	0.01	----	1.9	120-260
NC-100	25	0.8	1.2	0.8	0.08	2	0.5	0.8	0.25	---	---	150
NC-111	15	0.2	0.6	0.4	0.02	0.8	0.1	0.4	0.05	0.06	1.2	15
NC-120	8	0.2	0.2	0.1	0.01	0.4	---	0.6	0.01	---	1.9	110

Transparent Quartz Rod (NC-100) Dimension and tolerance (mm)

OD	Tolerance of OD	Ovality
$2 < \Phi \leq 5$	± 0.15	≤ 0.15
$5 < \Phi \leq 6$	± 0.20	≤ 0.20
$6 < \Phi \leq 8$	± 0.20	≤ 0.20
$8 < \Phi \leq 10$	± 0.20	≤ 0.20
$10 < \Phi \leq 12$	± 0.30	≤ 0.30
$12 < \Phi \leq 15$	± 0.30	≤ 0.30
$15 < \Phi \leq 18$	± 0.30	≤ 0.30
$18 < \Phi \leq 20$	± 0.40	≤ 0.30
$20 < \Phi \leq 25$	± 0.50	≤ 0.40
$25 < \Phi \leq 30$	± 0.50	≤ 0.40

NC-200

NC-200 series multi-step fused silica rods yield longer and bigger diameter quartz rod for industrial applications comparing with one step NC-100

Available sizes range from 3 to 200 mm outer diameter.

NC-220

NC-220 is a new selected grade that guarantees particularly low metal concentrations as required for super high purity semiconductor materials.

Transparent Quartz Tube (NC-200) Dimension and tolerance (mm)

OD	OD Tolerance Φ	Ovality
$3 < \Phi \leq 5$	± 0.20	≤ 0.20
$5 < \Phi \leq 6$	± 0.20	≤ 0.20
$6 < \Phi \leq 8$	± 0.30	≤ 0.20
$8 < \Phi \leq 10$	± 0.30	≤ 0.20
$10 < \Phi \leq 12$	± 0.30	≤ 0.30
$12 < \Phi \leq 15$	± 0.40	≤ 0.30
$15 < \Phi \leq 18$	± 0.40	≤ 0.30
$18 < \Phi \leq 20$	± 0.40	≤ 0.30
$20 < \Phi \leq 25$	± 0.50	≤ 0.40
$25 < \Phi \leq 30$	± 0.60	≤ 0.40
$30 < \Phi \leq 35$	± 0.70	≤ 0.40
$35 < \Phi \leq 60$	± 0.80	≤ 0.40
$60 < \Phi \leq 80$	± 1.0	≤ 0.50
$80 < \Phi \leq 100$	± 1.0	≤ 0.50
$100 < \Phi \leq 200$	± 1.0	≤ 0.50

Tranparent quartz glass rod property

Property	NC-100	NC-111	NC-200	NC-210
		NC-120		NC-220
Density	$2.2 \times 10^3 \text{kg/m}^3$	$2.2 \times 10^3 \text{kg/m}^3$	$2.21 \times 10^3 \text{kg/m}^3$	$2.21 \times 10^3 \text{kg/m}^3$
Hardness	570KHN ₁₀₀	580KHN ₁₀₀	580KHN ₁₀₀	580KHN ₁₀₀
Tensile Strength	$4.8 \times 10^7 \text{Pa(N/m}^2\text{)}$	$4.9 \times 10^7 \text{Pa(N/m}^2\text{)}$	$4.9 \times 10^7 \text{Pa(N/m}^2\text{)}$	$4.9 \times 10^7 \text{Pa(N/m}^2\text{)}$
Compression Strength	$>1.1 \times 10^9 \text{Pa}$	$>1.1 \times 10^9 \text{Pa}$	$>1.1 \times 10^9 \text{Pa}$	$>1.1 \times 10^9 \text{Pa}$
Coefficient of Thermal Expansion(20-300℃)	$5.5 \times 10^{-7} \text{cm/cm}^\circ\text{C}$	$5.5 \times 10^{-7} \text{cm/cm}^\circ\text{C}$	$5.5 \times 10^{-7} \text{cm/cm}^\circ\text{C}$	$5.5 \times 10^{-7} \text{cm/cm}^\circ\text{C}$
Thermal Conductivity(20℃)	1.4W/m℃	1.4W/m℃	1.4W/m℃	1.4W/m℃
Specific Heat	660J/kg℃	670J/kg℃	680J/kg℃	690J/kg℃
Softening Point	1630℃	1680℃	1700℃	1750℃
Annealing Point	1180℃	1215℃	1210℃	1250℃

