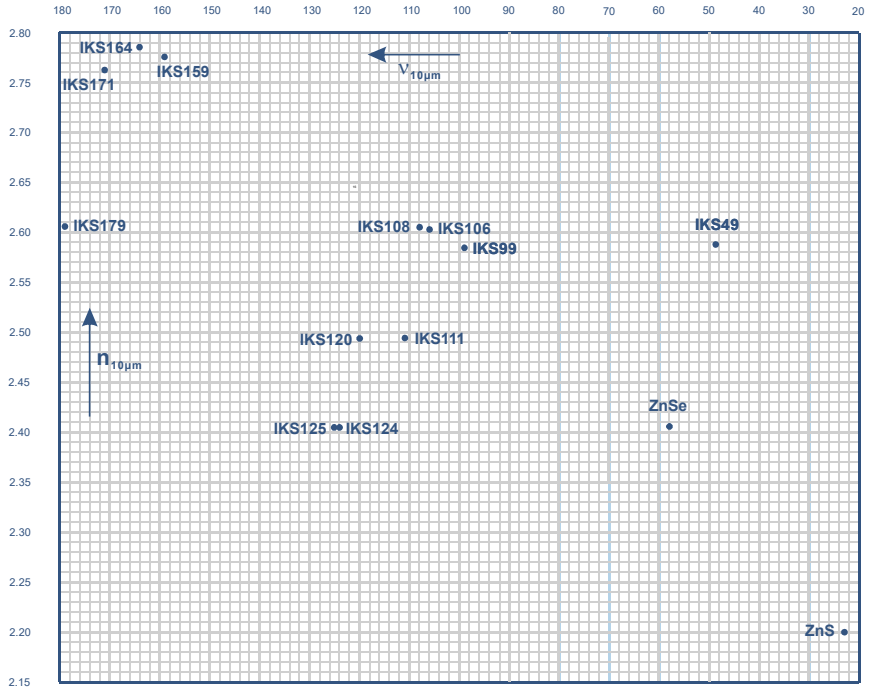
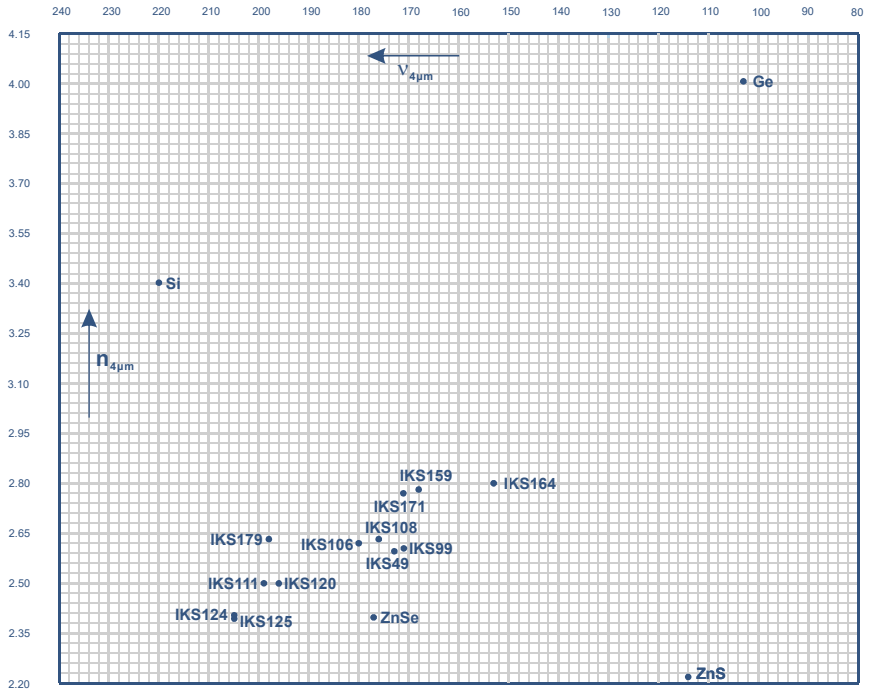
Infrared Glasses IKS and Crystals ZnSe, ZnS, Ge, Si

The infrared glasses IKS and crystals ZnSe, ZnS, Ge, Si are mainly used for applications in the wavelength range 3µm ... 12µm. The available standard sizes of the materials are approx. up to 150mm. The sizes over 150mm are also possible by request.

Abbe-diagram for IR glasses and crystals at 10µm



Abbe-diagram for IR glasses and crystals at 4µm



Infrared Glasses IKS (1µm ... 12µm)

refraction, transmission (with Fresnel reflection)

	IKS49(Ge-Se-Sb)		**IKS99**(Ge-Sb-Se)		**IKS106**(Ge-Sb-Se)		**IKS108**(Ge-Sb-Se)		**IKS111**(Ge-As-Se)	
λ [µm]	n	T(λ) [%]	n	T(λ) [%]	n	T(λ) [%]	n	T(λ) [%]	n	T(λ) [%]
1.00	-	-	-	-	-	-	2.7284	52.2	2.5969	60.1
2.00	2.6555	63.1	2.6261	63.8	-	-	2.6426	63.4	2.5298	65.9
3.00	2.6142	64.0	2.6116	64.1	2.6273	63.7	2.6278	63.7	2.5180	66.2
4.00	2.6084	64.2	2.6058	64.2	2.6224	63.9	2.6222	63.8	2.5133	66.3
5.00	2.6049	64.2	2.6022	64.3	2.6183	63.9	2.6186	63.9	2.5104	66.4
6.00	2.6015	64.3	2.5991	64.4	2.6157	64.0	2.6156	64.0	2.5078	66.4
7.00	2.5984	64.4	2.5962	64.4	2.6130	64.1	2.6128	64.1	2.5054	66.5
8.00	2.5957	64.4	2.5929	64.5	2.6099	64.1	2.6099	64.1	2.5026	66.5
9.00	2.5929	64.5	2.5895	64.6	2.6064	64.2	2.6067	64.2	2.4999	66.6
10.00	2.5886	64.6	2.5858	64.7	2.6026	64.3	2.6032	64.3	2.4968	66.7
11.00	2.5802	62.0	2.5816	64.8	2.5985	64.4	2.5995	63.3	2.4931	65.2
12.00	2.5634	55.2	2.5769	64.9	2.5948	51.0	2.5951	41.8	2.4891	40.3

dispersion

λ [µm]	ν(λ)	ν(λ)	ν(λ)	ν(λ)	ν(λ)
4.00	173	171	180	176	199
10.00	49	99	106	108	111

thermo-optical coefficient

λ [µm]	dn/ dT [x10^{-6}/ K]	dn/ dT [x10^{-6}/ K]	dn/ dT [x10^{-6}/ K]	dn/ dT [x10^{-6}/ K]	dn/ dT [x10^{-6}/ K]
4.00	41	62	90	64	68
10.00	39	58	87	61	67

density	4.7 g/cm^3	4.7 g/cm^3	4.7 g/cm^3	4.7 g/cm^3	4.4 g/cm^3
CTE@25°C	16x10^{-6}/K	15x10^{-6}/K	14x10^{-6}/K	14x10^{-6}/K	12x10^{-6}/K

recommended polishing slurries
- OXAPA D *for standard polishing and finishing*
- OXAPA AL *for standard polishing and finishing*
- OXAPA SOL *under appropriate conditions*

recommended polishing pads
- OXAPA polishing pad hard 4
- OXAPA polishing pad soft 4, 19 *for finishing*

recommended polishing pitches
- OXAPA PP 15-34

Infrared Glasses IKS (1µm ... 12µm)

refraction, transmission (with Fresnel reflection)

	IKS120(As-Se)		**IKS124**(Ge-As-Se)		**IKS125**(Ge-As-Se)		**IKS159**(As-Se)		**IKS164**(Ge-As-Se-Te)	
λ [µm]	n	T(λ) [%]	n	T(λ) [%]	n	T(λ) [%]	n	T(λ) [%]	n	T(λ) [%]
1.00	2.5796	64.8	-	-	-	-	2.9314	53.2	-	-
2.00	2.5267	66.0	2.4325	68.1	2.4223	68.2	2.8200	59.7	2.8321	59.5
3.00	2.5148	66.3	2.4217	68.4	2.4215	68.4	2.8017	60.1	2.8111	59.9
4.00	2.5100	66.4	2.4175	68.5	2.4173	68.5	2.7948	60.2	2.8034	60.0
5.00	2.5071	66.4	2.4148	68.6	2.4146	68.6	2.7910	60.3	2.7993	60.1
6.00	2.5047	66.5	2.4127	68.6	2.4125	68.6	2.7882	60.3	2.7965	60.2
7.00	2.5024	66.5	2.4110	68.7	2.4108	68.7	2.7857	60.4	2.7941	60.2
8.00	2.4999	66.6	2.4092	68.7	2.4087	68.7	2.7833	60.5	2.7919	60.3
9.00	2.4973	66.7	2.4069	68.8	2.4067	68.8	2.7808	60.5	2.7896	60.3
10.00	2.4944	66.7	2.4046	68.8	2.4041	68.8	2.7781	60.6	2.7870	60.4
11.00	2.4911	66.8	2.4017	68.0	2.4014	68.9	2.7753	60.6	2.7841	59.4
12.00	2.4874	66.0	2.3979	66.0	2.3975	67.0	2.7721	60.7	2.7810	36.9

dispersion

λ [µm]	ν(λ)	ν(λ)	ν(λ)	ν(λ)	ν(λ)
4.00	196	205	205	168	153
10.00	120	124	125	159	164

thermo-optical coefficient

λ [µm]	dn/ dT [x10^{-6}/ K]	dn/ dT [x10^{-6}/ K]	dn/ dT [x10^{-6}/ K]	dn/ dT [x10^{-6}/ K]	dn/ dT [x10^{-6}/ K]
4.00	61			36	106
10.00	55			32	102

density	4.4 g/cm^3	4.7 g/cm^3	4.7 g/cm^3	4.6 g/cm^3	4.8 g/cm^3
CTE@25°C	17x10^{-6}/K	20x10^{-6}/K	12x10^{-6}/K	20x10^{-6}/K	13x10^{-6}/K

recommended polishing slurries
- OXAPA D *for standard polishing and finishing*
- OXAPA AL *for standard polishing and finishing*
- OXAPA SOL *under appropriate conditions*

recommended polishing pads
- OXAPA polishing pad hard 4
- OXAPA polishing pad soft 4, 19 *for finishing*

recommended polishing pitches
- OXAPA PP 15-34

Infrared Glasses IKS (1µm ... 12µm)

IKS171(Se-As-Sb-Sn) **IKS179**(Ge-As-Se)

refraction, transmission (with Fresnel reflection)

λ [µm]	n	T(λ) [%]	n	T(λ) [%]
1.00	-	-	2.7249	60.1
2.00	2.8028	60.1	2.6413	63.4
3.00	2.7847	60.4	2.6274	63.7
4.00	2.7780	60.6	2.6220	63.9
5.00	2.7743	60.6	2.6192	63.9
6.00	2.7716	60.7	2.6169	64.0
7.00	2.7693	60.7	2.6150	64.0
8.00	2.7671	60.8	2.6131	64.1
9.00	2.7648	60.8	2.6112	64.1
10.00	2.7624	60.9	2.6066	64.1
11.00	2.7597	60.9	2.6066	63.0
12.00	2.7568	61.0	2.6041	36.1

dispersion

λ [µm]	ν(λ)	ν(λ)
4.00	171	198
10.00	171	179

thermo-optical coefficient

λ [µm]	dn/ dT [x10^{-6}/ K]	dn/ dT [x10^{-6}/ K]
4.00	20	23
10.00	18	20

density	4.7 g/cm^3	4.5 g/cm^3
CTE@25°C	21x10^{-6}/K	20x10^{-6}/K

recommended polishing slurries
- OXAPA D *for standard polishing and finishing*
- OXAPA AL *for standard polishing and finishing*
- OXAPA SOL *under appropriate conditions*

recommended polishing pads
- OXAPA polishing pad hard 4
- OXAPA polishing pad soft 4, 19 *for finishing*

recommended polishing pitches
- OXAPA PP 15-34