

## 48TSL SCANNING LENS DATA

### Common data for all lenses

The lenses are meniscus form; one concave and one convex surface. The concave always faces the incident beam.

Diameter 48.0 +/-0.1 mm

Edge thickness 3.0 +/-0.1 mm

Material ZnSe, refractive index 2.4028 at 10.6µm

X scanning mirror is 34.8mm from the edge of the first (concave) surface

Y scanning mirror is 17.1mm from the edge of the first (concave) surface

Any 48TSL lens can therefore replace the any other in the lens cell and be correctly positioned

Each scanning mirror deflects the beam by up to 20 deg from the central position

Focused spot diameters are based on an incident 15mm full beam diameter (11.8mm  $1/e^2$ ) and TEM<sub>00</sub> mode

The 'average' is the mean from 25 field positions

The lenses give the smallest possible spot diameters for a single element with the given mirror locations and incident beam diameter

Lens	Focal length (mm)	Field size (mm)	Working distance (mm)	Focused spot diameters (µm) .... For given field angles (deg)										Average	(Diffraction limit)
				X = 0, Y = 0	X = 10, Y = 0	X = 20, Y = 0	X = 0, Y = 10	X = 10, Y = 10	X = 20, Y = 10	X = 0, Y = 20	X = 10, Y = 20	X = 20, Y = 20			
48TSL75	75,2	50 x 50	74,17	181	154	113	147	135	153	213	235	315	171	86	
48TSL100	101,3	70 x 70	101,39	172	159	142	155	153	174	217	237	302	181	116	
48TSL150	149,1	105 x 105	150,59	202	197	197	196	199	221	242	260	319	219	171	
48TSL175	175	120 x 120	177,39	224	222	227	223	227	252	254	274	337	243	200	
48TSL180	179,2	125 x 125	179,23	226	225	231	226	231	257	259	279	342	247	205	
48TSL200	200,6	140 x 140	203,53	249	248	254	249	253	275	285	301	355	269	230	
48TSL225	225,5	155 x 155	227,96	281	279	284	278	280	296	321	332	369	296	258	
48TSL250	249,4	175 x 175	253,26	303	303	309	304	307	326	333	346	392	320	285	
48TSL300	298	210 x 210	302,56	357	357	365	359	362	378	388	397	434	373	341	
48TSL360	362,6	250 x 250	368,19	432	432	441	433	436	450	456	463	495	445	415	
48TSL400	394,4	280 x 280	401,44	468	469	477	470	473	488	487	495	532	481	451	
48TSL435	432,7	300 x 300	440,97	512	513	521	514	517	532	529	538	573	525	495	
48TSL482	482	340 x 340	492,3	569	569	577	572	574	587	588	594	625	581	551	
48TSL600	591,7	415 x 415	586,5	716	709	697	699	697	699	751	762	792	717	677	
48TSL720	716,5	500 x 500	730,03	841	842	851	844	845	856	857	859	878	850	820	
48TSL977	977,6	680 x 680	977,6	1144	1145	1151	1146	1146	1153	1161	1160	1167	1151	1118	
48TSL1150	1183	840 x 840	1205	1383	1383	1388	1385	1385	1390	1398	1397	1402	1389	1353	
48TSL1200	1201	850 x 850	1216	1403	1404	1411	1404	1405	1412	1415	1414	1422	1409	1374	

