



INSTRUMENTATION TUBING FRACTIONAL SIZES

Part No.	Outside Diameter (inches)	Wall Thickness (inches)	Type	Nominal Length (feet)	Material Standard
TL-1-012-S-304/L-A269	1/16"	0.012	Seamless	20	A269/A213
TL-1-012-S-316/L-A269					
TL-1-014-S-304/L-A269					
TL-1-014-S-316/L-A269					
TL-1-016-S-304/L-A269					
TL-1-016-S-316/L-A269					
TL-1-020-S-304/L-A269					
TL-1-020-S-316/L-A269					
TL-2-028-S-304/L-A269	1/8"	0.028			
TL-2-028-S-316/L-A269					
TL-2-035-S-304/L-A269					
TL-2-035-S-316/L-A269					
TL-3-028-S-304/L-A269	3/16"	0.028			
TL-3-028-S-316/L-A269					
TL-3-035-S-304/L-A269					
TL-3-035-S-316/L-A269					
TL-3-049-S-304/L-A269					
TL-3-49-S-316/L-A269					
TL-4-028-S-304/L-A269	1/4"	0.028			
TL-4-028-S-316/L-A269					
TL-4-035-S-304/L-A269					
TL-4-035-S-316/L-A269					
TL-4-049-S-304/L-A269					
TL-4-049-S-316/L-A269					
TL-4-065-S-304/L-A269					
TL-4-065-S-316/L-A269					
TL-6-035-S-304/L-A269	3/8"	0.035			
TL-6-035-S-316/L-A269					
TL-6-049-S-304/L-A269					
TL-6-049-S-316/L-A269					
TL-6-065-S-304/L-A269					
TL-6-065-S-316/L-A269					
TL-8-035-S-304/L-A269	1/2"	0.035			
TL-8-035-S-316/L-A269					
TL-8-049-S-304/L-A269					
TL-8-049-S-316/L-A269					
TL-8-065-S-304/L-A269					
TL-8-065-S-316/L-A269					
TL-8-083-S-304/L-A269					
TL-8-083-S-316/L-A269					
TL-12-049-S-304/L-A269	3/4"	0.049			
TL-12-049-S-316/L-A269					
TL-12-065-S-304/L-A269					
TL-12-065-S-316/L-A269					
TL-12-083-S-304/L-A269					
TL-12-083-S-316/L-A269					
TL-12-095-S-304/L-A269					
TL-12-095-S-316/L-A269					
TL-12-109-S-304/L-A269					
TL-12-109-S-316/L-A269					
TL-14-083-S-304/L-A269	7/8"	0.083			
TL-14-083-S-316/L-A269					
TL-14-095-S-304/L-A269					
TL-14-095-S-316/L-A269					
TL-14-109-S-304/L-A269					
TL-14-109-S-316/L-A269					

INSTRUMENTATION TUBING FRACTIONAL SIZES

Part No.	Outside Diameter (inches)	Wall Thickness (inches)	Type	Nominal Length (feet)	Material Standard
TL-16-065-S-304/L-A269	1	0.065	Seamless	20	A269/A213
TL-16-065-S-316/L-A269					
TL-16-083-S-304/L-A269					
TL-16-083-S-316/L-A269		0.083			
TL-16-095-S-316/L-A269		0.095			
TL-16-095-S-316/L-A269					
TL-16-109-S-316/L-A269		0.109			
TL-16-109-S-316/L-A269					
TL-16-12-S-316/L-A269		0.12			
TL-16-12-S-316/L-A269					
TL-20-083-S-304/L-A269	1 1/4	0.083			
TL-20-083-S-316/L-A269					
TL-20-095-S-316/L-A269		0.095			
TL-20-095-S-316/L-A269					
TL-20-109-S-316/L-A269		0.109			
TL-20-109-S-316/L-A269					
TL-20-12-S-316/L-A269		0.120			
TL-20-12-S-316/L-A269					
TL-20-134-S-316/L-A269		0.134			
TL-20-134-S-316/L-A269					
TL-20-156-S-316/L-A269	0.156				
TL-20-156-S-316/L-A269					
TL-20-188-S-316/L-A269	0.188				
TL-20-188-S-316/L-A269					
TL-24-095-S-316/L-A269	1 1/2	0.095			
TL-24-095-S-316/L-A269					
TL-24-109-S-316/L-A269		0.109			
TL-24-109-S-316/L-A269					
TL-24-12-S-316/L-A269		0.120			
TL-24-12-S-316/L-A269					
TL-24-134-S-316/L-A269		0.134			
TL-24-134-S-316/L-A269					
TL-24-156-S-316/L-A269		0.156			
TL-24-156-S-316/L-A269					
TL-24-188-S-316/L-A269	0.188				
TL-24-188-S-316/L-A269					
TL-32-109-S-316/L-A269	2"	0.109			
TL-32-109-S-316/L-A269					
TL-32-12-S-316/L-A269		0.120			
TL-32-12-S-316/L-A269					
TL-32-134-S-316/L-A269		0.134			
TL-32-134-S-316/L-A269					
TL-32-156-S-316/L-A269		0.156			
TL-32-156-S-316/L-A269					
TL-32-188-S-316/L-A269	0.188				
TL-32-188-S-316/L-A269					

INSTRUMENTATION TUBING MILLIMETER SIZES

Part No.	Outside Diameter (Millimeter)	Wall Thickness (Millimeter)	Type	Nominal Length (feet)	Material Standard
TL-3MM-08-S-304/L-A269	3	0.8	Seamless	20	A269/A213
TL-3MM-08-S-316/L-A269					
TL-6MM-08-S-304/L-A269	6	0.8			
TL-6MM-08-S-316/L-A269					
TL-6MM-1-S-304/L-A269		1			
TL-6MM-1-S-316/L-A269					
TL-6MM-1.2-S-304/L-A269		1.2			
TL-6MM-1.2-S-316/L-A269					
TL-6MM-1.5-S-304/L-A269	8	1.5			
TL-6MM-1.5-S-316/L-A269					
TL-8MM-1-S-304/L-A269		1			
TL-8MM-1-S-316/L-A269					
TL-8MM-1.2-S-304/L-A269		1.2			
TL-8MM-1.2-S-316/L-A269					
TL-8MM-1.5-S-304/L-A269	10	1.5			
TL-8MM-1.5-S-316/L-A269					
TL-10MM-09-S-304/L-A269		0.9			
TL-10MM-09-S-316/L-A269					
TL-10MM-1-S-304/L-A269		1			
TL-10MM-1-S-316/L-A269					
TL-10MM-1.2-S-304/L-A269	12	1.2			
TL-10MM-1.2-S-316/L-A269					
TL-10MM-1.5-S-304/L-A269		1.5			
TL-10MM-1.5-S-316/L-A269					
TL-12MM-1-S-304/L-A269		1			
TL-12MM-1-S-316/L-A269					
TL-12MM-1.2-S-304/L-A269		1.2			
TL-12MM-1.2-S-316/L-A269					
TL-12MM-1.25-S-304/L-A269		1.25			
TL-12MM-1.25-S-316/L-A269					
TL-12MM-1.5-S-304/L-A269		1.5			
TL-12MM-1.5-S-316/L-A269					
TL-12MM-1.8-S-304/L-A269	14	1.8			
TL-12MM-1.8-S-316/L-A269					
TL-12MM-2-S-304/L-A269		2			
TL-12MM-2-S-316/L-A269					
TL-14MM-1-S-304/L-A269		1			
TL-14MM-1-S-316/L-A269					
TL-14MM-1.2-S-304/L-A269		1.2			
TL-14MM-1.2-S-316/L-A269					
TL-14MM-1.5-S-304/L-A269		1.5			
TL-14MM-1.5-S-316/L-A269					
TL-14MM-1.8-S-304/L-A269		1.8			
TL-14MM-1.8-S-316/L-A269					
TL-14MM-2-S-304/L-A269	15	2			
TL-14MM-2-S-316/L-A269					
TL-14MM-2.2-S-304/L-A269		2.2			
TL-14MM-2.2-S-316/L-A269					
TL-15MM-1-S-304/L-A269		1			
TL-15MM-1-S-316/L-A269					
TL-15MM-1.2-S-304/L-A269		1.2			
TL-15MM-1.2-S-316/L-A269					
TL-15MM-1.5-S-304/L-A269		1.5			
TL-15MM-1.5-S-316/L-A269					
TL-15MM-1.8-S-304/L-A269		1.8			
TL-15MM-1.8-S-316/L-A269					
TL-15MM-2-S-316/L-A269	2				
TL-15MM-2-S-316/L-A269					
TL-15MM-2.2-S-316/L-A269	2.2				
TL-15MM-2.2-S-316/L-A269					

INSTRUMENTATION TUBING MILLIMETER SIZES

Part No.	Outside Diameter (Millimeter)	Wall Thickness (Millimeter)	Type	Nominal Length (feet)	Material Standard
TL-16MM-1.2-S-316/L-A269	16	1.2	Seamless	20	A269/A213
TL-16MM-1.2-S-316/L-A269					
TL-16MMT-1.5-S-316/L-A269		1.5			
TL-16MM-1.5-S-316/L-A269					
TL-16MM-1.8-S-316/L-A269		1.8			
TL-16MM-1.8-S-316/L-A269					
TL-16MM-2-S-316/L-A269		2			
TL-16MM-2-S-316/L-A269					
TL-16MM-2.2-S-316/L-A269		2.2			
TL-16MM-2.2-S-316/L-A269					
TL-18MM-1.2-S-316/L-A269	18	1.2			
TL-18MM-1.2-S-316/L-A269					
TL-18MM-1.5-S-316/L-A269		1.5			
TL-18MM-1.5-S-316/L-A269					
TL-18MM-1.8-S-316/L-A269		1.8			
TL-18MM-1.8-S-316/L-A269					
TL-18MM-2-S-316/L-A269		2			
TL-18M-2-S-316/L-A269					
TL-18MM-2.2-S-316/L-A269		2.2			
TL-18MM-2.2-S-316/L-A269					
TL-18MM-2.5-S-316/L-A269	2.5				
TL-18MM-2.5-S-316/L-A269					
TL-20MM-1.2-S-316/L-A269	20	1.2			
TL-20MM-1.2-S-316/L-A269					
TL-20MM-1.5-S-316/L-A269		1.5			
TL-20MM-1.5-S-316/L-A269					
TL-20MM-1.8-S-316/L-A269		1.8			
TL-20MM-1.8-S-316/L-A269					
TL-20MM-1-S-316/L-A269		2			
TL-20MM-2-S-316/L-A269					
TL-20MM-2.2-S-316/L-A269		2.2			
TL-20MM-2.2-S-316/L-A269					
TL-20MM-2.5-S-316/L-A269	2.5				
TL-20MM-2.5-S-316/L-A269					
TL-20MM-2.8-S-316/L-A269	2.8				
TL-20MM-2.8-S-316/L-A269					
TL-22MM-1.2-S-316/L-A269	22	1.2			
TL-22MM-1.2-S-316/L-A269					
TL-22MM-1.5-S-316/L-A269		1.5			
TL-22MM-1.5-S-316/L-A269					
TL-22MM-1.8-S-316/L-A269		1.8			
TL-22MM-1.8-S-316/L-A269					
TL-22MM-2-S-316/L-A269		2			
TL-22MM-2-S-316/L-A269					
TL-22MM-2.2-S-316/L-A269		2.2			
TL-22MM-2.2-S-316/L-A269					
TL-22MM-2.5-S-316/L-A269	2.5				
TL-22MM-2.5-S-316/L-A269					
TL-22MM-2.8-S-316/L-A269	2.8				
TL-22MM-2.8-S-316/L-A269					
TL-25MM-1.8-S-316/L-A269	25	1.8			
TL-25MM-1.8-S-316/L-A269					
TL-25MM-2-S-316/L-A269		2			
TL-25MM-2-S-316/L-A269					
TL-25MM-2.2-S-316/L-A269		2.2			
TL-25MM-2.2-S-316/L-A269					
TL-25MM-2.5-S-316/L-A269	2.5				
TL-25MM-2.5-S-316/L-A269					

INSTRUMENTATION TUBING MILLIMETER SIZES

Part No.	Outside Diameter (Millimeter)	Wall Thickness (Millimeter)	Type	Nominal Length (feet)	Material Standard
TL-25MM-2.8-S-316/L-A269	25	2.8	Seamless	20	A269/A213
TL-25MM-2.8-S-316/L-A269					
TL-25MM-3-S-316/L-A269					
TL-25MM-3-S-316/L-A269					
TL-28MM-2-S-316/L-A269	28	2			
TL-28MM-2-S-316/L-A269					
TL-28MM-2.2-S-316/L-A269					
TL-28MM-2.2-S-316/L-A269					
TL-28MM-2.5-S-316/L-A269					
TL-28MM-2.5-S-316/L-A269					
TL-28MM-2.8-S-316/L-A269					
TL-28MM-2.8-S-316/L-A269					
TL-28MM-3-S-316/L-A269					
TL-28MM-3-S-316/L-A269					
TL-28MM-3.5-S-316/L-A269					
TL-28MM-3.5-S-316/L-A269					
TL-30MM-2-S-316/L-A269	30	2			
TL-30MM-2-S-316/L-A269					
TL-30MM-2.2-S-316/L-A269					
TL-30MM-2.2-S-316/L-A269					
TL-30MM-2.5-S-316/L-A269					
TL-30MM-2.5-S-316/L-A269					
TL-30MM-2.8-S-316/L-A269					
TL-30MM-2.8-S-316/L-A269					
TL-30MM-3-S-316/L-A269					
TL-30MM-3-S-316/L-A269					
TL-30MM-3.5-S-316/L-A269					
TL-30MM-3.5-S-316/L-A269					
TL-32MM-2-S-316/L-A269	32	2			
TL-32MM-2-S-316/L-A269					
TL-32MM-2.2-S-316/L-A269					
TL-32MM-2.2-S-316/L-A269					
TL-32MM-2.5-S-316/L-A269					
TL-32MM-2.5-S-316/L-A269					
TL-32MM-2.8-S-316/L-A269					
TL-32MM-2.8-S-316/L-A269					
TL-32MM-3-S-316/L-A269					
TL-32MM-3-S-316/L-A269					
TL-32MM-3.5-S-316/L-A269					
TL-32MM-3.5-S-316/L-A269					
TL-32MM-4-S-316/L-A269					
TL-32MM-4-S-316/L-A269					
TL-38MM-2.2-S-316/L-A269	38	2.2			
TL-38MM-2.2-S-316/L-A269					
TL-38MM-2.5-S-316/L-A269					
TL-38MM-2.5-S-316/L-A269					
TL-38MM-2.8-S-316/L-A269					
TL-38MM-2.8-S-316/L-A269					
TL-38MM-3-S-316/L-A269					
TL-38MM-3-S-316/L-A269					
TL-38MM-3.5-S-316/L-A269					
TL-38MM-3.5-S-316/L-A269					
TL-38MM-4-S-316/L-A269					
TL-38MM-4-S-316/L-A269					
TL-38MM-4.5-S-316/L-A269					
TL-38MM-4.5-S-316/L-A269					
TL-50MM-3-S-316/L-A269	50	3			
TL-50MM-3-S-316/L-A269					
TL-50MM-3.5-S-316/L-A269					
TL-50MM-3.5-S-316/L-A269					
TL-50MM-4-S-316/L-A269					
TL-50MM-4-S-316/L-A269					
TL-50MM-4.5-S-316/L-A269					
TL-50MM-4.5-S-316/L-A269					

Temperature Ratings

316 Stainless -325°F to 1200°F (-198°C to 648°C)

Tube Pressure Derating Factors at Elevated Temperatures

The following table lists derating factors that must be considered in applications above that of ambient temperatures.

Temperatures		Multiplier Factors			
° F	° C	304 SS	316 SS	Copper	Carbon Steel
200	93	1.00	1.00	0.80	0.95
400	204	0.94	0.97	0.50	0.86
600	315	0.82	0.85		0.77
800	427	0.76	0.80		0.59
1000	538	0.69	0.77		
1200	649	0.30	0.37		

Example

Type 316 Stainless Steel ¼" O.D x 0.49" wall at 800°F is.....7,500 PSI X .80 = 6,000 PSI
Therefore, the suggested allowable working pressure for 316 Stainless Steel – ¼" O.D. with 0.49" tube wall – at 800°F is 6,000 PSI

These charts are to be used as a guide only and are based on normal wall thicknesses, used for the various sizes. These ratings may vary widely from effects such as the proper use of sealants, size of stock, temperature, corrosion factors, etc. WADING-LOK Tube Stainless Steel Inc., assumes no responsibility for its accuracy in any individual design,

Tubo de instrumentacion estandar

Estandares del material

Grado	UNS	ASTM	ASME
316 / 316L	S31600 / S31603	A213 ^º / A269	SA213
304 / 304L	S30400 / S30403	A213 ^º / A269	SA213

^º Espesores de pared nominales, no mínimos

Pocentajes de composicion quimica

Elementos	Grado del material	
	316 / 316L	304 / 304L
	Composición, % del peso	
Cromo	16,0 a 18,0	18,0 a 20,0
Niquel	11,0 a 14,0	8,0 a 11,0
Molibdeno	2,00 a 3,00	-
Manganeso	2,00 max	2,00 max
Silicio	0,75 max	0,75 max
Carbono	0,035 max ^º	0,035 max ^º
Azufre	0,030 max	0,030 max

Raw Material Specifications

Fitting Material	Bar Stock	Forging	*Tubing Specification	Maximum Specification hardness (Tubing)
Stainless Steel	ASTM-A276 ASME-SA-479 Type 316-SS	ASME-SA-182 Type 316-SS	ASTM-A213 ASTM-A269	80 Rb

Gas Service

Extra care must be taken when tubing is used in gas service applications. Small gas molecules easily escape through minute leak paths, therefore, the tubing must be free of nicks, scratches and imperfections of any kind. In particular, when using large diameter tubing the possibility of surface defects is increased due to greater surface area. It is strongly recommended that the heavier wall thicknesses be selected.

Values in reverse tex are not recommended fo Gas Service

Note: Tables, calculated to the right, are suggested maximum working pressure ratings, in accordance with ASEM B31.3, but should be used for reference only is not responsible for its accuracy nor designs using these figures. All compatible WADING-LOK fittings will withstand pressures above those listed for maximum tubing working pressures.

It is the responsibility of the Engineer to refer to the technical pages in this catalog to ensure selection of the proper tubing material, tubing compatibility with the fitting, media and tubing wall thickness. Following the stated recommendations will ensure a safe application, free of leaks, The entire system must be considered when selecting the tube.

SUGGESTED ALLOWABLE WORKING PRESSURE TABLES (psig)

75,000 PSI
Tensile

Stainless Steel															
Tube Wall Thickness (inches)															
Tube Size O.D.	.012	.014	.016	.020	.028	.035	.049	.065	.083	.095	.109	.120	.134	.156	.188
1/16"	6800	8100	9400	12000											
1/8"					8500	10900									
3/16"					5400	7000	10200								
1/4"					4000	5100	7500	10200							
5/16"						4000	5800	8000							
3/8"						3300	4800	6500	8600						
1/2"							2400	3500	4700	6200					
5/8"								2900	4000	5200	6000				
3/4"								2400	3300	4200	4900	5800	6400		
7/8"								2000	2800	3600	4200	4800	5400	6100	
1"									2400	3100	3600	4200	4700	5300	
1 1/4"										2400	2800	3300	3600	4100	4900
1 1/2"											2300	2700	3000	3400	4000
2"												2000	2200	2500	2900
															3600

Stainless Steel															
Tube Wall Thickness (Millimeter)															
Tube Size O.D. mm	0.8	0.9	1	1.2	1.25	1.5	1.8	2	2.2	2.5	2.8	3	3.5	4	4.5
3	710														
6	330	351	420	520		670									
8		275	310	380		490						Working Pressure in Bar			
10		227	240	300		380									
12		165	200	240	250	310	380	430							
14			180	220	230	280	340	390	430						
15			170	200	210	260	320	360	400						
16				190	200	240	300	330	370						
18				170	180	210	260	290	320	370					
20				150	160	190	230	260	290	330	380				
22				130	140	170	210	230	260	300	340				
25							180	200	230	260	300	320			
28								180	200	230	260	280	330		
30								170	190	210	240	260	310		
32								160	170	200	230	240	290	330	
38									140	170	190	200	240	280	310
50												150	180	210	240

Note: For welded and drawn tubing, a derating factor must be utilized.

For double welded tube, multiply the above pressure rating by .85; and for single welded tube by .80 (ANSI B 31, Table A-1B).

WADING-LOK STAINLESS TUBE CO., LTD

Selección segura de componentes

Para garantizar un rendimiento seguro en sus aplicaciones y en el diseño de su sistema, debe considerar la selección segura de los componentes. La función que cumplirán los componentes, la clasificación de los componentes, la compatibilidad de los materiales, la instalación adecuada, el funcionamiento y el mantenimiento son responsabilidad exclusiva del diseñador del sistema y del usuario. Wading-Lok no asume ninguna responsabilidad por cualquier selección, instalación, operación o mantenimiento insdecuados.

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