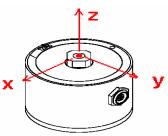


Extraneous Load Factors

Equation: $\sigma_{\text{max}} \ge (A)Fx + (B)Fy + (C)Fz + (D)Mx + (E)My + (F)Mz$



Material: Aluminum 2024-T4 (*AL), 17-4 P.H. Stainless Steel

Model #	Capacity (lb)	A	В	С	D	E	F
LCF300 (*AL)	10	195.52	195.52	638.19	286.81	286.81	373.22
	25	107.80	107.80	252.48	192.76	192.76	161.96
	50	107.80	107.80	258.00	192.76	192.76	161.96
	100	87.33	87.33	131.42	123.81	123.81	122.15
LCF300	100	119.53	119.53	384.85	143.09	143.09	190.01
	250	82.81	82.81	167.15	123.36	123.36	132.06
	500	55.89	55.89	106.78	84.53	84.53	94.15

$\sigma_{ ext{max}}$ Table

Material	Static Load (=60% Y.S.)	Fatigue (Non Reversing Loads)	Fatigue (Full Reversing Loads)
2024-T4/T351	28,000	18,000	15,000
17-4PH S.S	87,000	78,000	62,000*

^{*}Value is 75% of Fatigue Strength based on $10\text{-}20 \times 10^6$ cycles and allow for factors that influence Fatigue such as surface finish, stress concentrations, corrosion, temperature and other variables for the production of the transducer, for infinite Fatigue Life (100×10^6) use 75% of values shown.

Deflection & Natural Frequency

Model #	Capacity (lb)	Deflection (in.)	Natural Frequency (Hz)	β
LCF300 (*AL)	10 (*AL)	0.0012	1,100	0.0649
	25 (*AL)	0.0012	1,800	0.0649
	50 (*AL)	0.0025	1,700	0.0649
	100(*AL)	0.0023	2,600	0.0649
LCF300	100	0.0021	1,500	0.1984
	250	0.0026	2,200	0.1984
	500	0.0018	3,700	0.1984

Natural Frequency & Frequency Response Equation's:

Natural Frequency (FN) =
$$3.13 \sqrt{\frac{1}{\frac{\beta}{Capacity}} \bullet Deflection}}$$
 (Hz)

This documentation was generated and completed to the best ability of FUTEK's Engineering Team using FEA Analysis, Empirical data and Multiple Testing Simulations. The information and recommendations on this document are presented in good faith and believed to be correct however, FUTEK Advanced Sensor Technology makes no representations or warranties as to the completeness or accuracy of the information.

Doc#: EL1018 Model # LCF300 (L1665) Series



Frequency Response with load (FR) =
$$3.13 \sqrt{\frac{1}{\frac{\beta + AppliedLoad}{Capacity}}} \bullet Deflection$$
 (Hz)

*Where β values are obtained by Futek Engineers

This documentation was generated and completed to the best ability of FUTEK's Engineering Team using FEA Analysis, Empirical data and Multiple Testing Simulations. The information and recommendations on this document are presented in good faith and believed to be correct however, FUTEK Advanced Sensor Technology makes no representations or warranties as to the completeness or accuracy of the information.