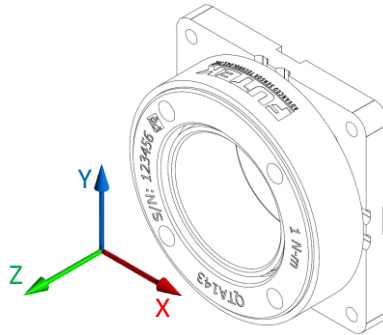


MODEL #QTA143

Extraneous Load Factors

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



Material: Aluminum 2024-T4 (*AL)

| Model # | Capacity (in-lb) | A [$\frac{1}{in^2}$] | B [$\frac{1}{in^2}$] | C [$\frac{1}{in^2}$] | D [$\frac{1}{in^3}$] | E [$\frac{1}{in^3}$] | F [$\frac{1}{in^3}$] |
|---------------|------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| QTA143 | 8.851 | 1,040 | 1,040 | 360 | 1,060 | 1,060 | 2,430 |

σ_{max} **Table**

| Material | Static Load (=60% Y.S.) | Fatigue (Non-Reversing Loads) | Fatigue (Full Reversing Loads) |
|--------------|-------------------------|-------------------------------|--------------------------------|
| 2024-T4/T351 | 28,000 Psi | 18,000 Psi | 15,000 Psi |

*Value is 75% of Fatigue Strength based on 10-20 x 10⁶ 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 x 10⁶) use 75% of values shown.

Deflection & Natural Frequency

| Material | Capacity (in-lb) | Torsional Stiffness (in-lb/rad) | Natural Frequency (Hz) |
|--------------|------------------|---------------------------------|------------------------|
| 2024-T4/T351 | 8.851 | 6,300 | 8,790 |

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