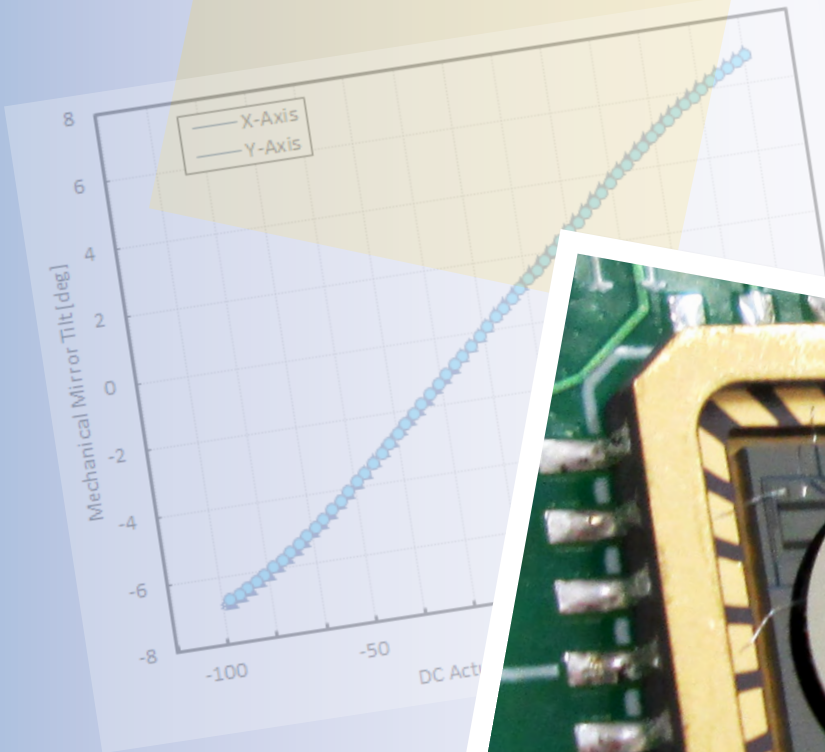




## Gimbal-Less Two-Axis Scanning MEMS Micromirrors

Device Datasheet  
S45889



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# Device Parameters Summary

**Device ID :** S45889

**Actuator Type:** A5L3.3(C1)

**Actuator Mode :** Gimbal-less Dual-Axis Quasistatic

**Mirror Type and Size :** Bonded mirror of 3.0mm diameter

**Mirror Coating :** Aluminum

**Maximum Mech. Angle - X Axis [degrees] :** 2.8074

**Maximum Mech. Angle - Y Axis [degrees] :** 2.7866

**Maximum Vdifference - X Axis [V] :** 180

**Maximum Vdifference - Y Axis [V] :** 180

**Driver Bias Voltage (Vbias) [V] :** 90

**Maximum Mech. Angle - Coupled Axes [degrees] :** 3.5259

**Resonant Frequency - X Axis [Hz] :** 1455

**Resonant Frequency - Y Axis [Hz] :** 1445

**Quality Factor - X Axis :** 100

**Quality Factor - Y Axis :** 109

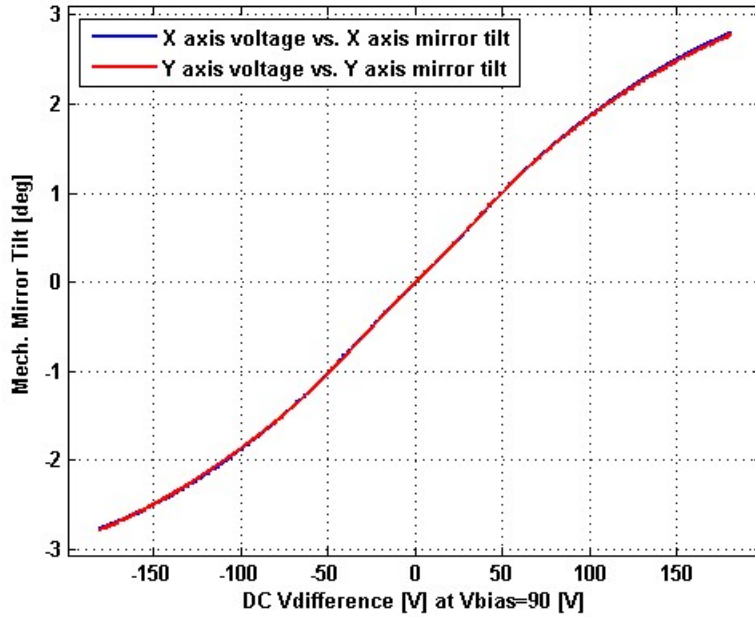
**Recommended LPF Cutoff Frequency (6th Order Bessel) [Hz] :** 720

**Date and Time Report was Created:** 16-Aug-2019 at 13:13:23

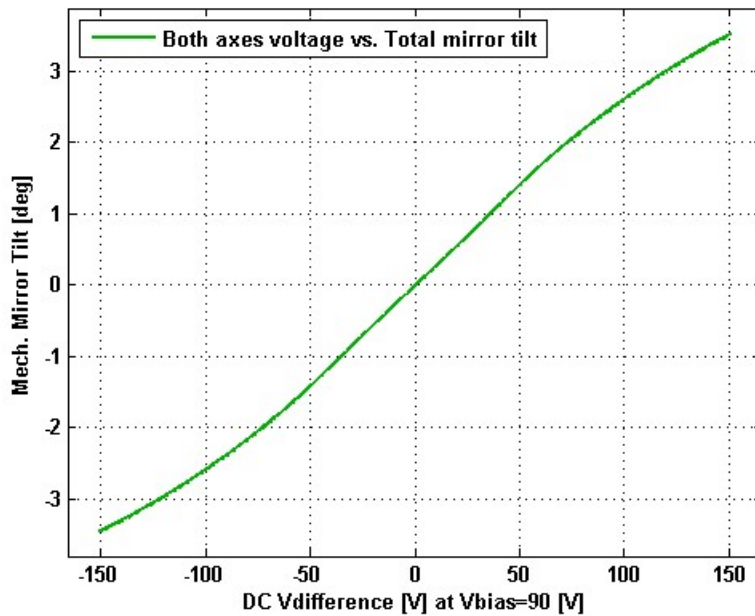
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# Static Response

## Voltage vs. Mech. Angle - Individual Axes



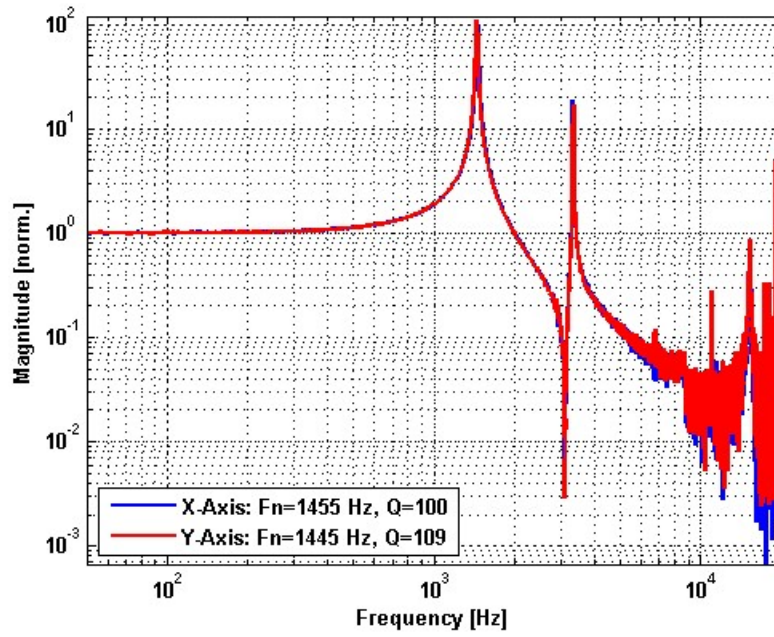
## Voltage vs. Mech. Angle - Coupled Axes



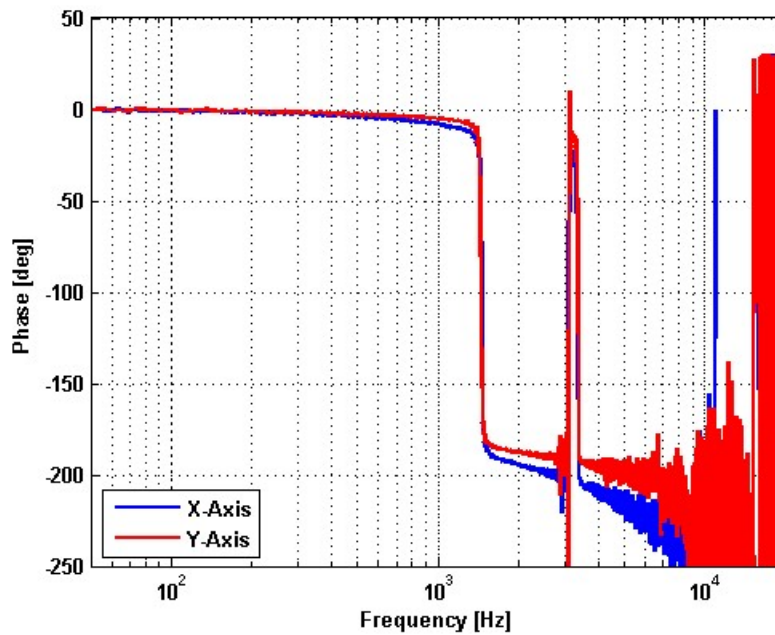
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# Frequency Response

## Small Signal Frequency Response - Magnitude



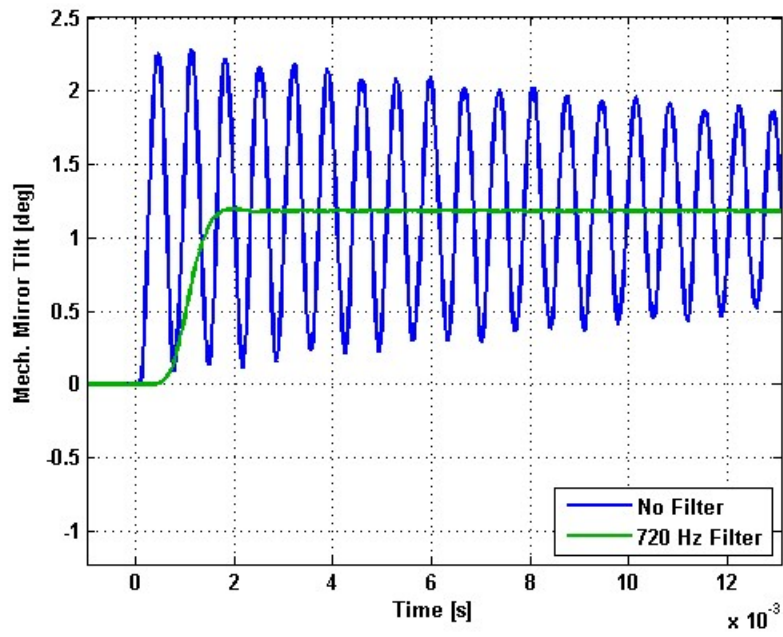
## Small Signal Frequency Response - Phase



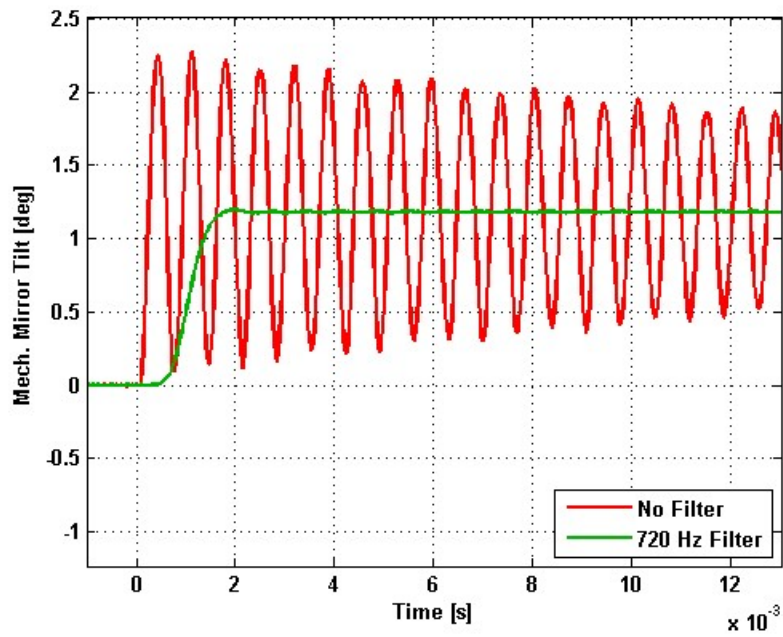
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# Step Response

## X-Axis Step Response



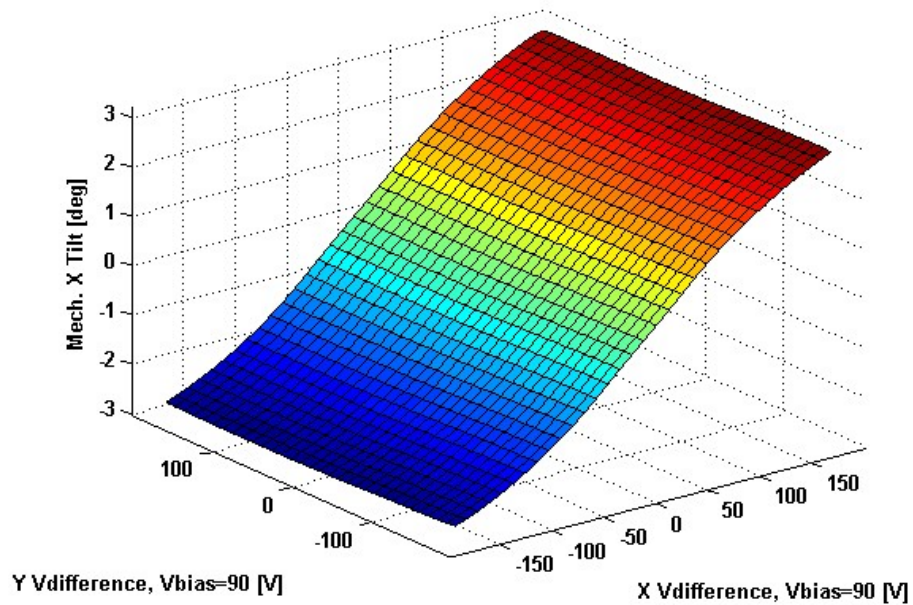
## Y-Axis Step Response



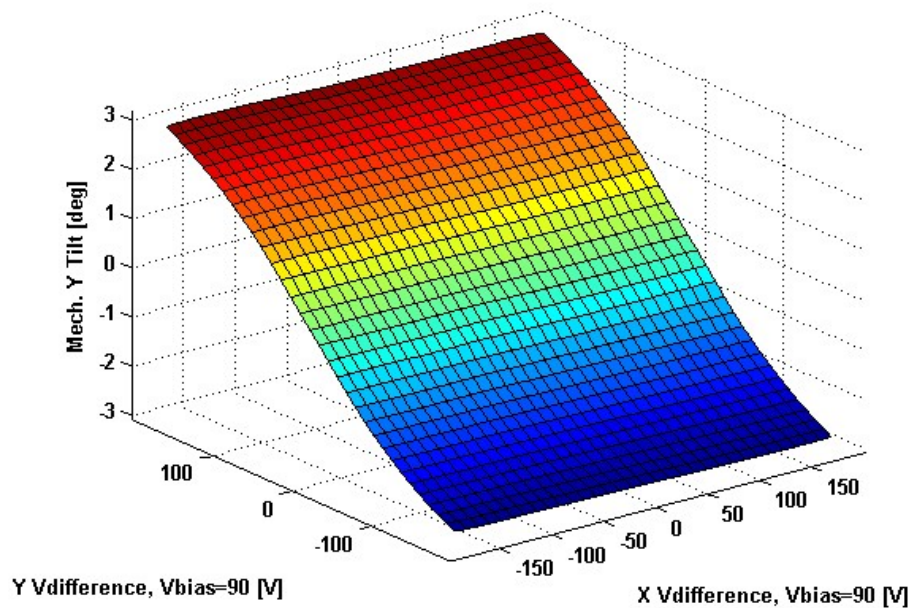
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# 2D Lookup Tables

## Voltage vs. X Mech. Angle - Lookup Table



## Voltage vs. Y Mech. Angle - Lookup Table



# Y vs. X Tilt - Addressable Mech. Angles

