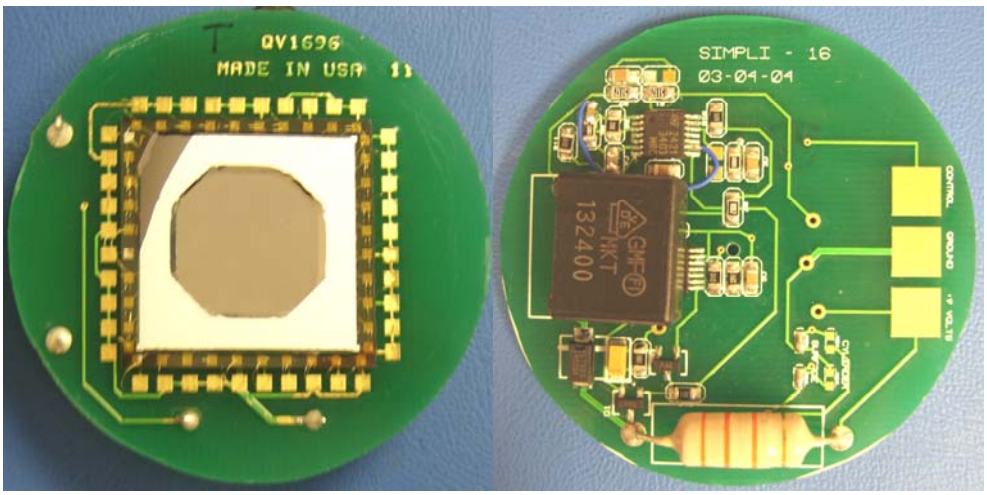


Simpli™ is a low cost, low power, single channel drive coupled with an AgilOptics 16mm Deformable Membrane Mirror (DM) (other mirror sizes available upon request). The Simpli™ Drive uses a 9-18v supply and a 1-3v control signal to output 10-320v on the DM. Actuator design may be customized to produce specific aberrations or the standard focal adjustment design may be utilized. The standard DM coating is Aluminum, custom coatings are available. Simpli™ standard packaging fits in a 2" tip-tilt mount.

Electrical Characteristics

| Parameter | Test Conditions | Min | Typ | Max | Units |
|---|---|---|---|---|---|
| Supply Voltage | | 9 | 9.5 | 18 | V |
| Supply Current* | 9.5v supply | 2 | | 53 | mA |
| Signal Voltage | 9.5v supply | 0 | | 4 | V |
| HV out | 9.5v supply .5v signal | 9.5 | | 10.5 | V |
| HV out | 9.5v supply 3.7v | 267 | 275 | 280 | V |
| Signal Input Impedance | | | 100 | | KΩ |
| Output ripple | | 1.5% HV out @ 1KHz | | | |

* See current vs. signal graph



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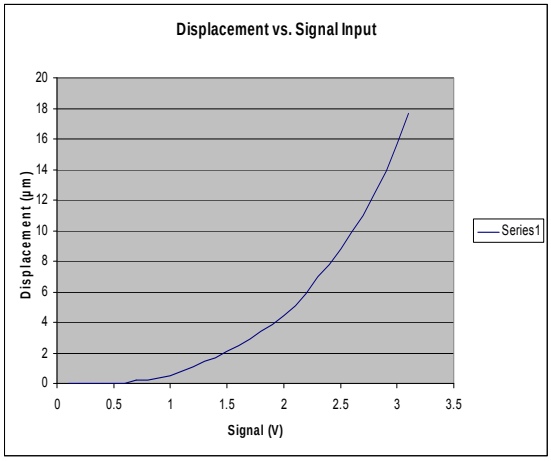
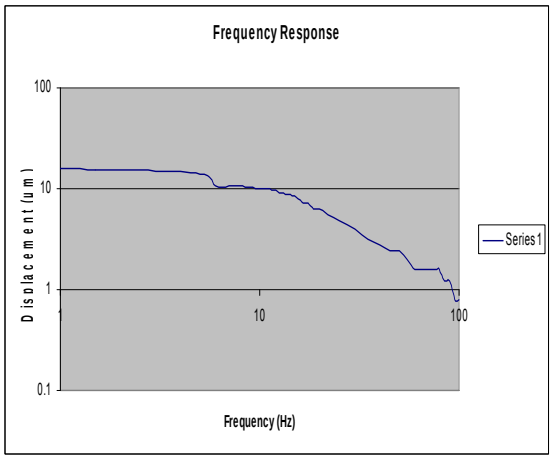
## Mechanical Characteristics

| Parameter | Test Conditions | Min | Typ | Max | Units |
|---|---|---|---|---|---|
| Membrane Displacement | | | 16 | 21.66 | µm |
| Fundamental Frequency | | | 4100 | | Hz |
| Actuator Voltage | | 0 | | 500* | V |
| Membrane Voltage | | 0 | | 500* | V |
| Minimum Focal Length | | | 1 | 0.74 | M |
| Flatness | | | | 633 | nm PV |
| Displacement Ripple | 90% Max Pull | | | <10 | nm |

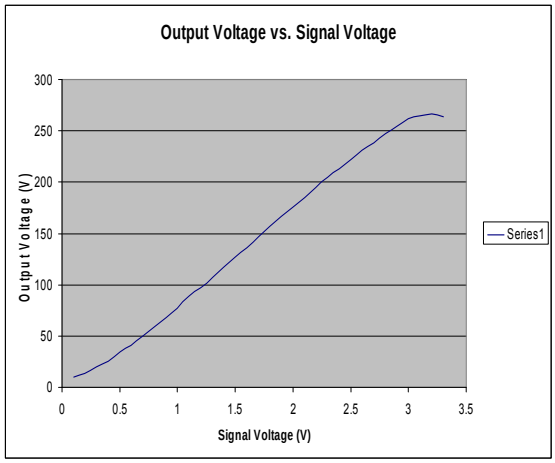
*Applying this voltage may cause mirror to Snap-Down(S/D), or come in contact with the pad array. S/D does not cause permanent damage to the membrane even after multiple S/D cycles. AgilOptics mirrors have been tested in excess of 500 million S/D cycles. Permanent deformation of the mirror may occur when voltage greater then the maximum specified in this data sheet is used to Snap-Down the mirror.



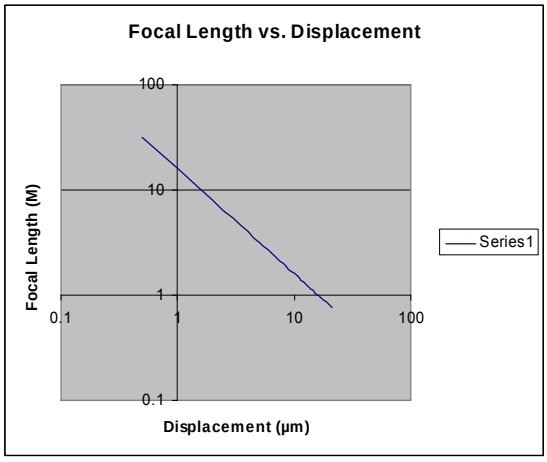

Input signal vs. displacement of the membrane 9.5v supply




Frequency response 9.5v supply .5-3v(2vp-p) sine wave .




Signal in vs. HV out 9.5v supply




Displacement of the membrane vs. the focal length produced



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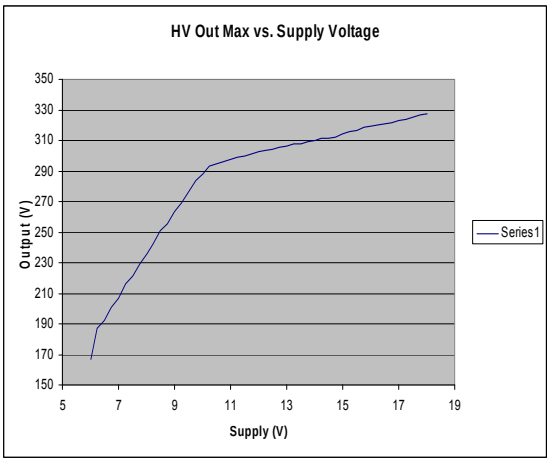
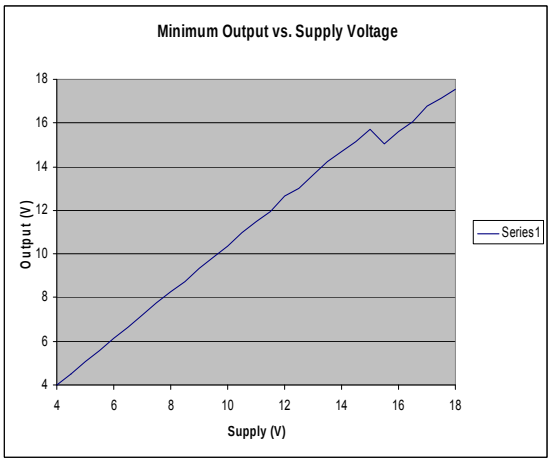
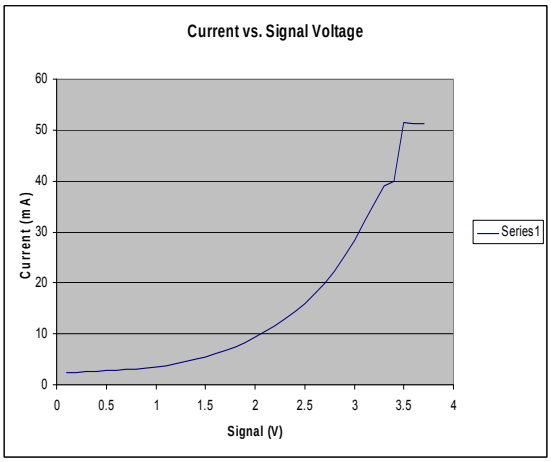


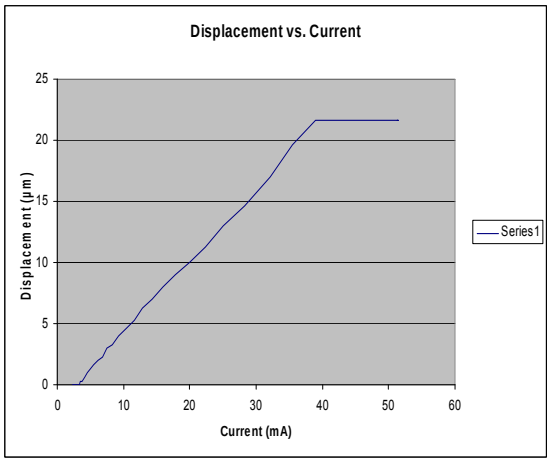

Max HV output of Simpli™ based on supply voltage




Minimum HV output of Simpli™ based on supply voltage




9.5v supply increasing signal input




Current draw vs. displacement of the membrane 9.5v supply

Displacement of the membrane is proportional to the current consumed by the drive. Normal operation of the Simpli™ is achieved with a 9.5v supply



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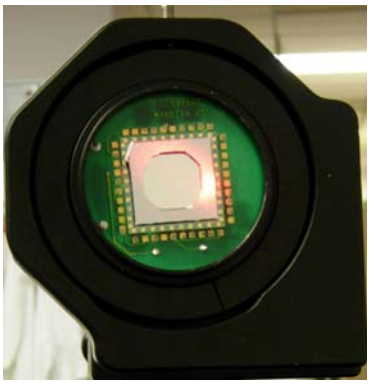
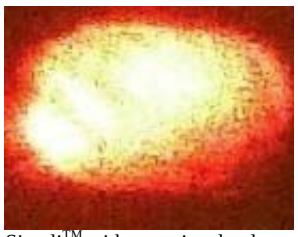
## Testing Your Simpli™



To test the Simpli™ you will need the following components.

- A mount to hold the Simpli™
- A laser pointer or other light source
- 9v battery or power supply
- 0-4v adjustable power supply, or just a 1.5v battery(on/off testing with a 1.5v battery may require greater then 2m to be noticeable)

Mount the Simpli™ rigidly. The laser pointer or light source needs to be mounted far enough from the mirror to fill ~80% of the mirror. Once the laser is pointed at the mirror, connect the 9v battery to the mirror and connect your control voltage to the signal input (be sure to ground the signal voltage to the ground on the Simpli™).



Simpli™ with zero signal voltage

Use the adjustable power supply to vary the signal voltage and watch the mirror focus change.

Simpli™ with signal voltage appropriate for focus



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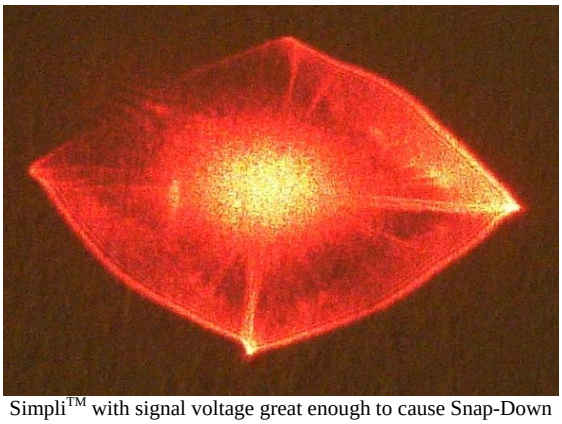
Should the mirror Snap-Down, reduce the signal voltage until the mirror is no longer snapped-down.



Simpli™ with signal voltage great enough to cause Snap-Down



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