

## GALVANOMETERS

# HIGH-PERFORMING SINGLE AXIS CLOSED LOOP GALVANOMETER SCANNER

Novanta develops photonics solutions through our globally recognized brands— ARGES, Cambridge Technology, Laser Quantum and Synrad— specializing in cutting-edge components and sub-systems for laser-based diagnostic, analytical, micromachining and fine material processing applications. Powerful lasers, coupled with advanced beam steering and intelligent sub-systems incorporating software and controls, deliver extreme precision and performance, tailored to our customers' demanding applications.

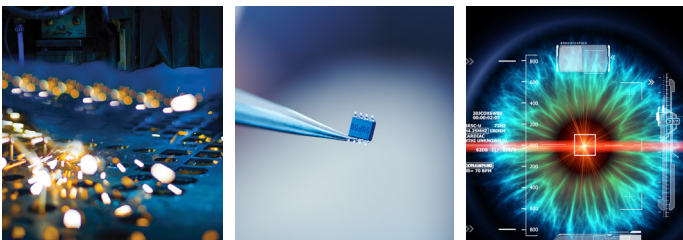
## HIGH SCANNING ACCURACY, SPEED AND RELIABILITY

Engineered by Cambridge Technology, our 83xxK and 62xxK series of scanners feature speed, reliability and high resolution and thermal stability for the most demanding high-precision applications. Each motor combines our moving magnet actuator technology with a position detector only available from Cambridge Technology. This patented technology features stable positioning while achieving the fastest scan speeds available in its category.



## ACHIEVE RELIABILITY FOR YOUR VALUE-DRIVEN APPLICATION

- Industry's fastest motor speeds deliver maximum throughput with long-term reliability
- High-accuracy output across a diverse range of application scanning needs
- Robust design supports consistent stability over long product lifetimes
- Footprint of compact models ensures ease of integration for small spaces
- Available with a wide range of mirrors sizes (3 to 50 mm) and coating options



*High Power Welding*

*Micromachining*

*Laser Treatment*

Our 83xxK series features even lower drift, ideal for applications requiring precise features such as micromachining and large field applications that are dependent on stability.

## GALVANOMETERS

| Specifications                            | 6200K<br>8300K                                                                               | 6210K<br>8310K       | 6215K<br>8315K       | 6220K<br>8320K       | 6230K<br>8330K       | 6231K<br>8331K       | 6240K<br>8340K      | 6250K<br>8350K       | 6260K<br>8360K      |
|-------------------------------------------|----------------------------------------------------------------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|---------------------|----------------------|---------------------|
| Recommended Aperture Size                 | 3 - 7 mm                                                                                     | 3 - 7 mm             | 3 - 7 mm             | 5 - 10 mm            | 8 - 15 mm            | 8 - 15 mm            | 12 - 25 mm          | 25 - 75 mm           | 30 - 100 mm         |
| Wavelength Options                        | 355 nm / 532 nm / 1030 nm - 1080 nm / 9.4 μm - 10.6 μm<br>Broadband Coatings: 350 nm - 12 μm |                      |                      |                      |                      |                      |                     |                      |                     |
| Maximum Scan Angle                        | 40°                                                                                          |                      |                      |                      |                      |                      |                     |                      |                     |
| Compatible Servo Drivers                  | Analog Series: 671, 672, 673   Digital Series: DC900, DC3000 Plus                            |                      |                      |                      |                      |                      |                     |                      |                     |
| Rotor Inertia (gm·cm <sup>2</sup> , ±10%) | 0.013                                                                                        | 0.018                | 0.028                | 0.125                | 0.97                 | 0.82                 | 2.4                 | 15.6                 | 47.5                |
| Torque Constant (dyne·cm/amp, ±10%)       | 1.20x10 <sup>4</sup>                                                                         | 2.79x10 <sup>4</sup> | 3.78x10 <sup>4</sup> | 6.17x10 <sup>4</sup> | 1.31x10 <sup>5</sup> | 1.11x10 <sup>5</sup> | 2.0x10 <sup>5</sup> | 7.08x10 <sup>5</sup> | 8.5x10 <sup>5</sup> |
| Maximum Rotor Temperature                 | 110°C                                                                                        |                      |                      |                      |                      |                      |                     |                      |                     |
| Thermal Resistance (Rotor to Case)        | 3.8 °C/watt                                                                                  | 2.0 °C/watt          | 1.0 °C/watt          | 1.0 °C/watt          | 0.8 °C/watt          | 1.0 °C/watt          | 0.62 °C/watt        | 0.35 °C/watt         | 0.2 °C/watt         |
| Coil Resistance (ohms, ±10%)              | 2.14                                                                                         | 3.7                  | 2.5                  | 2.79                 | 1.07                 | 1.27                 | 1.03                | 1.69                 | 0.60                |
| Coil Inductance (μH, ±10%)                | 52                                                                                           | 109                  | 94                   | 180                  | 173                  | 176                  | 350                 | 1030                 | 530                 |
| Back EMF Voltage (μV/°/sec, ±10%)         | 20.9                                                                                         | 48.7                 | 66                   | 108                  | 229                  | 195                  | 346                 | 1220                 | 1480                |
| RMS Current (A at Tcase = 50°C, maximum)  | 2.3                                                                                          | 2.4                  | 4.1                  | 3.9                  | 7.1                  | 5.8                  | 8.2                 | 7.1                  | 12                  |
| Peak Current (A, maximum)                 | 6                                                                                            | 8                    | 20                   | 20                   | 25                   | 25                   | 25                  | 20                   | 40                  |
| Weight                                    | 13.3 g                                                                                       | 18 g                 | 25.8 g               | 42.5 g               | 267 g                | 142 g                | 356 g               | 590 g                | 1200 g              |
| Position Detector                         |                                                                                              |                      |                      |                      |                      |                      |                     |                      |                     |
| Linearity                                 | 99.9% minimum, over 20°                                                                      |                      |                      |                      |                      |                      |                     |                      |                     |
|                                           | 99.5% typical, over 40°                                                                      |                      |                      |                      |                      |                      |                     |                      |                     |
| Repeatability, Short-Terms                | 8 μrad                                                                                       |                      |                      |                      |                      |                      |                     |                      |                     |
| Output Signal, Common Mode                | 155 μA (±25%) at AGC current of 25 mA                                                        |                      |                      |                      |                      |                      |                     |                      |                     |
| Output Signal, Differential Mode          | 12 μA/° (±5%) at common mode current of 155 μA                                               |                      |                      |                      |                      |                      |                     |                      |                     |
| 62xxK vs. 83xxK                           |                                                                                              |                      |                      |                      |                      |                      |                     |                      |                     |
| Scale Drift (maximum)                     | 62xxK: 50 ppm/°C                                                                             |                      |                      |                      |                      | 83xxK: 15 ppm/°C     |                     |                      |                     |
| Zero Drift (maximum)                      | 62xxK: 15 μrad/°C                                                                            |                      |                      |                      |                      | 83xxK: 5 μrad/°C     |                     |                      |                     |

### Notes:

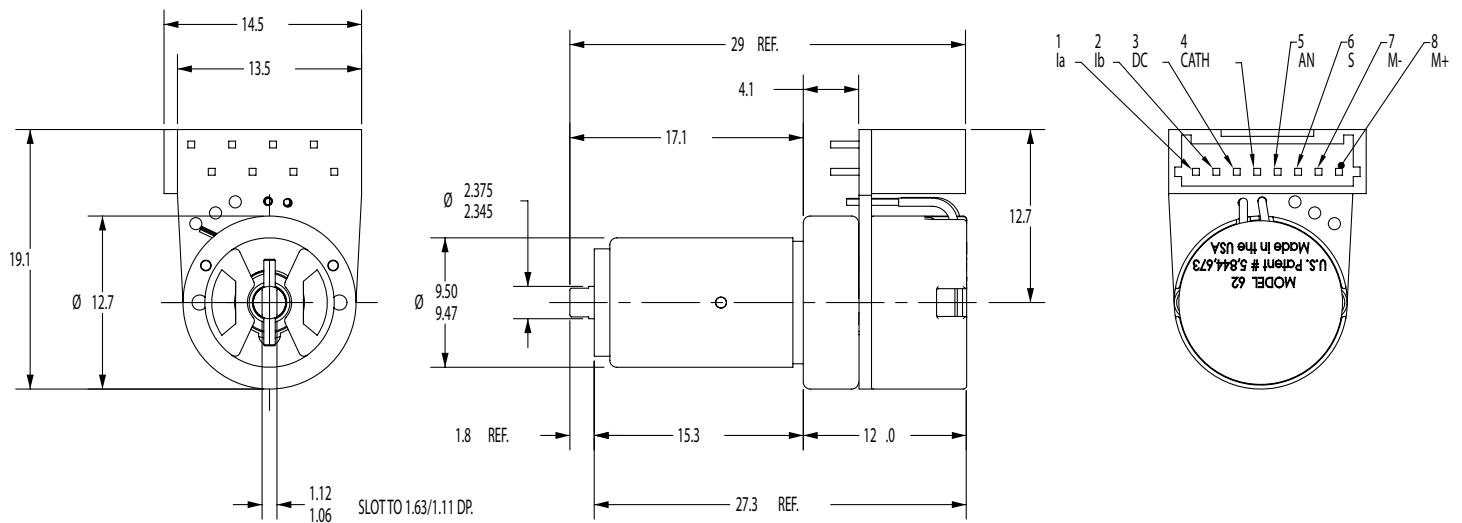
All angles are in mechanical degrees, unless otherwise noted. Dimensions are in millimeters. All specifications are subject to change without notice.

### References:

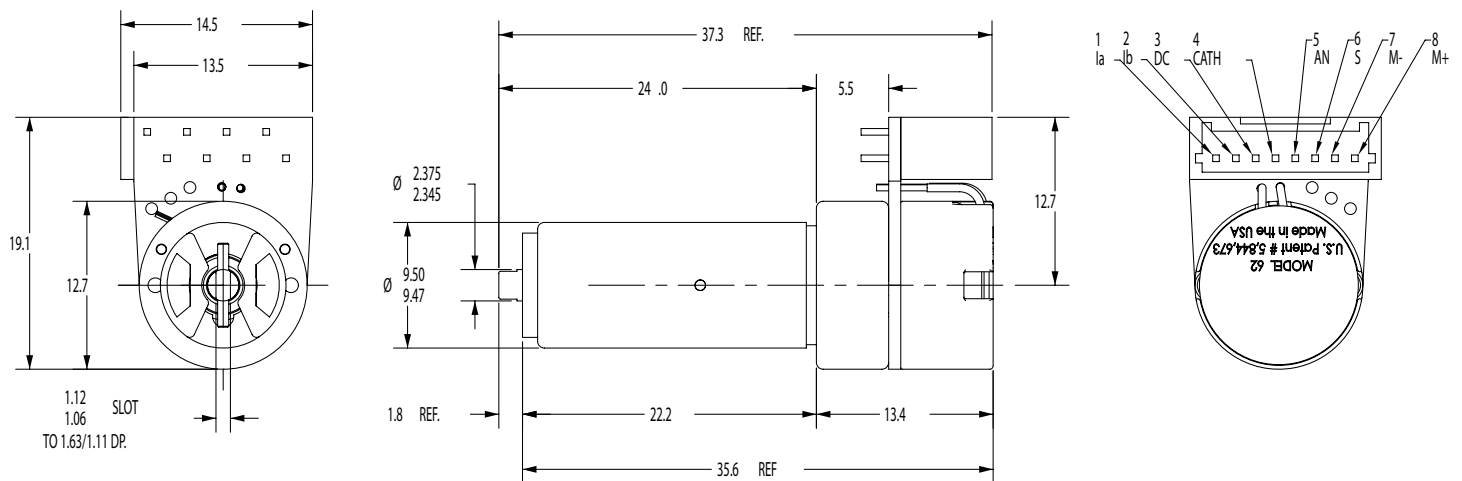
1. 0.1° step and settled to within 99% of the final position. Requires Cambridge Technology servo board

# GALVANOMETERS

## 6200K & 8300K



## 6210K & 8310K

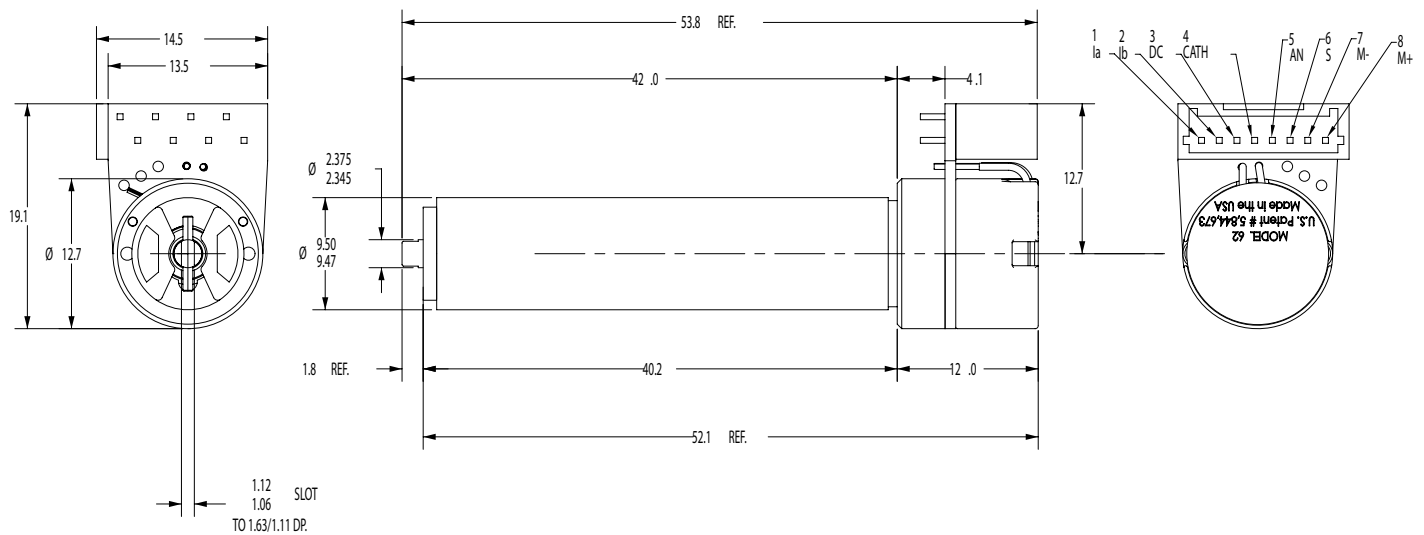


### Notes:

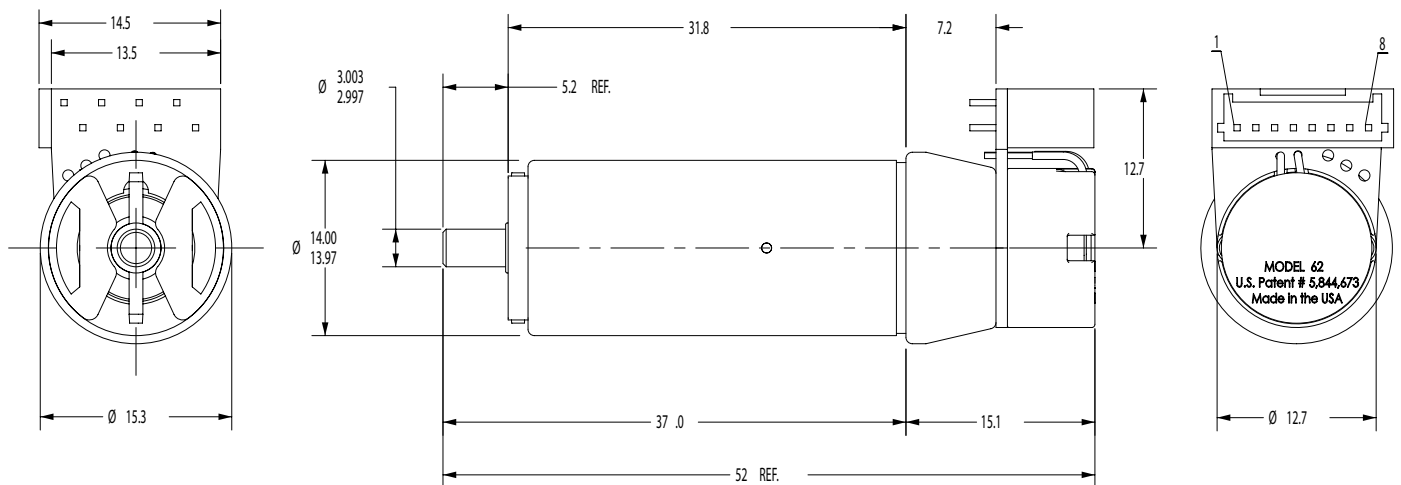
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# GALVANOMETERS

## 6215K & 8315K



## 6220K & 8320K

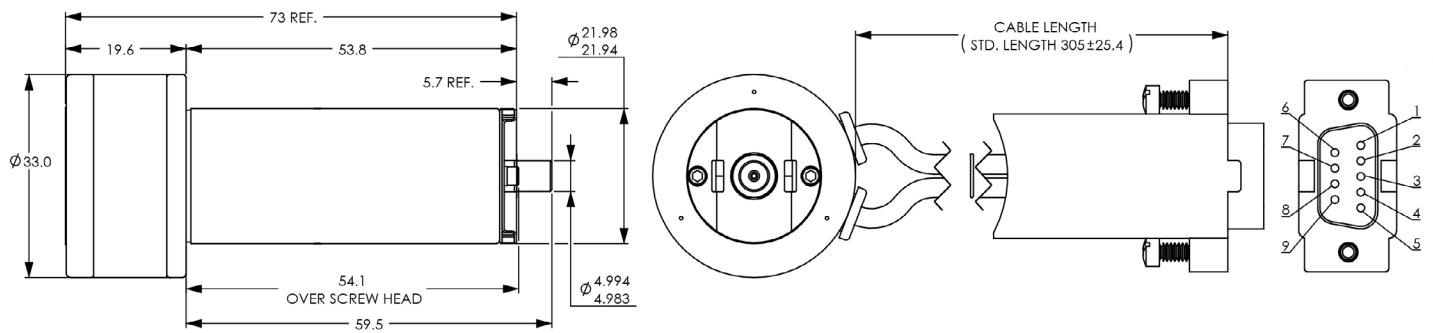


### Notes:

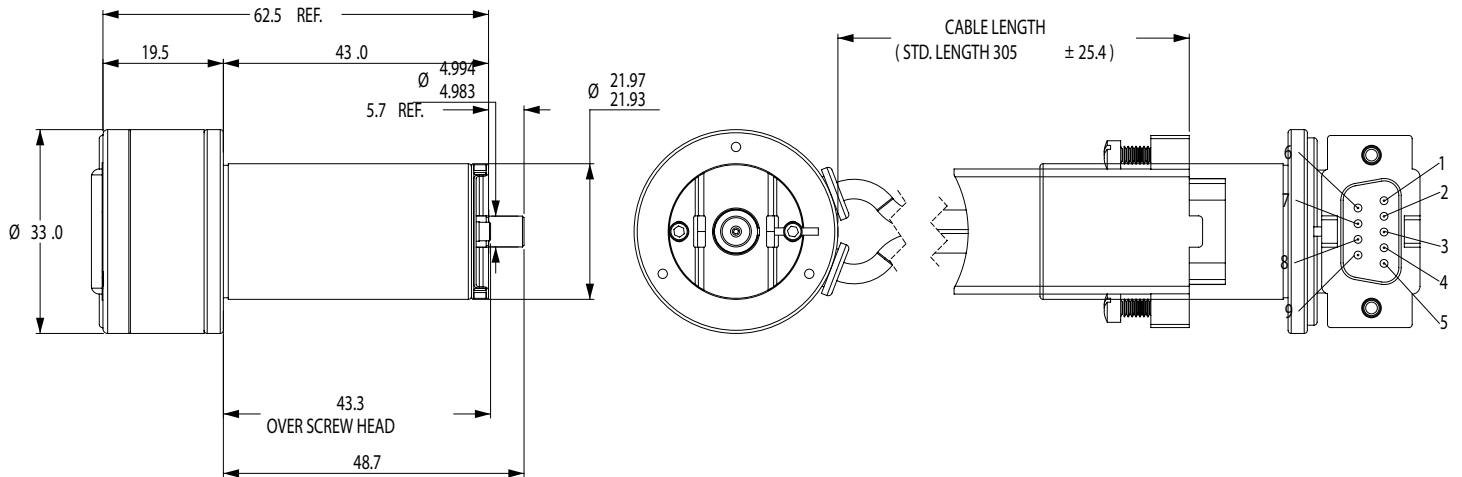
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## GALVANOMETERS

### 6230K & 8330K



### 6231K & 8331K

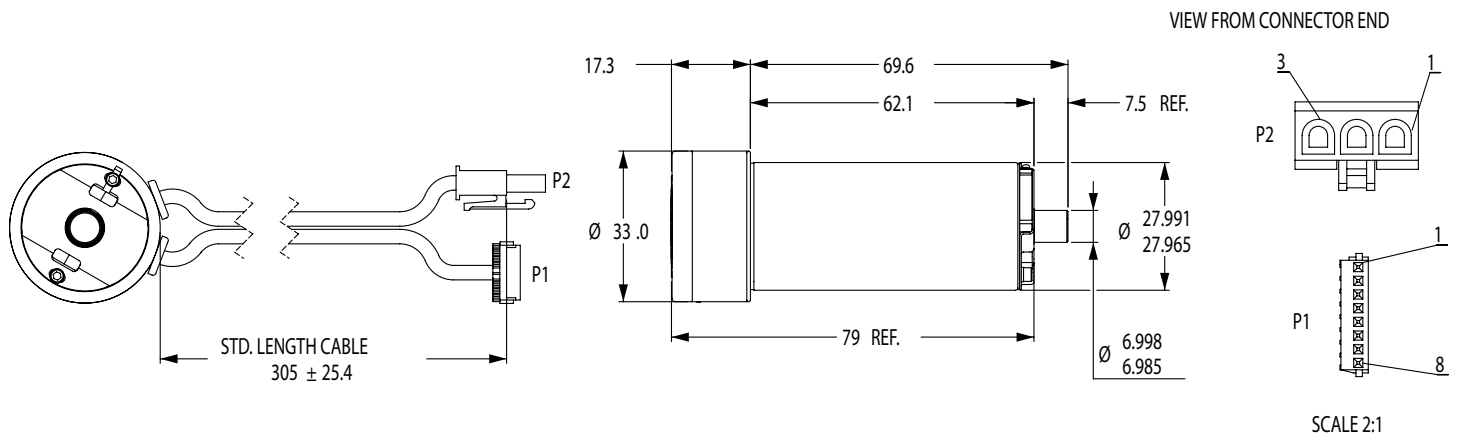


#### Notes:

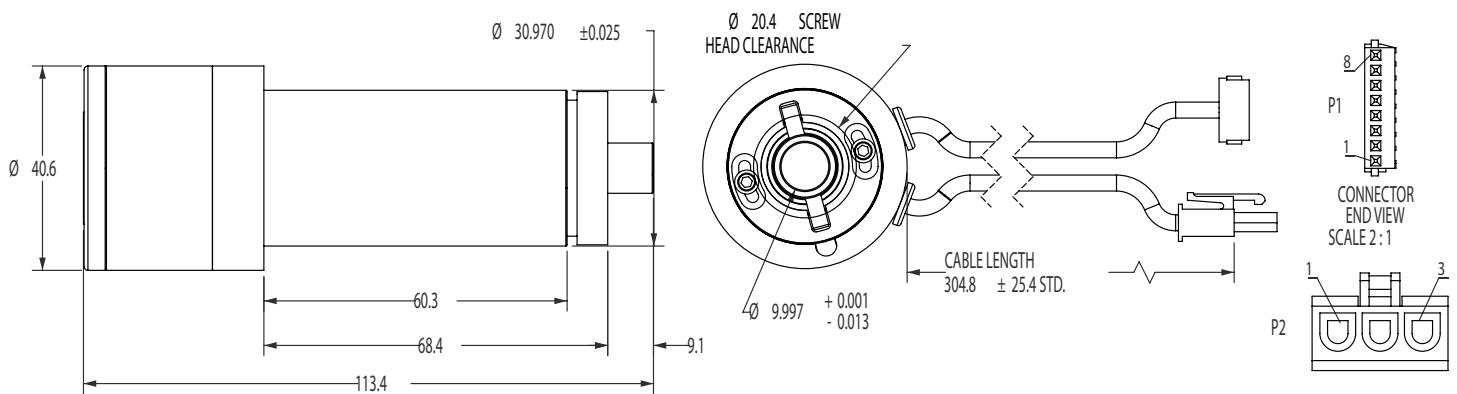
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## GALVANOMETERS

### 6240K & 8340K



### 6250K & 8350K

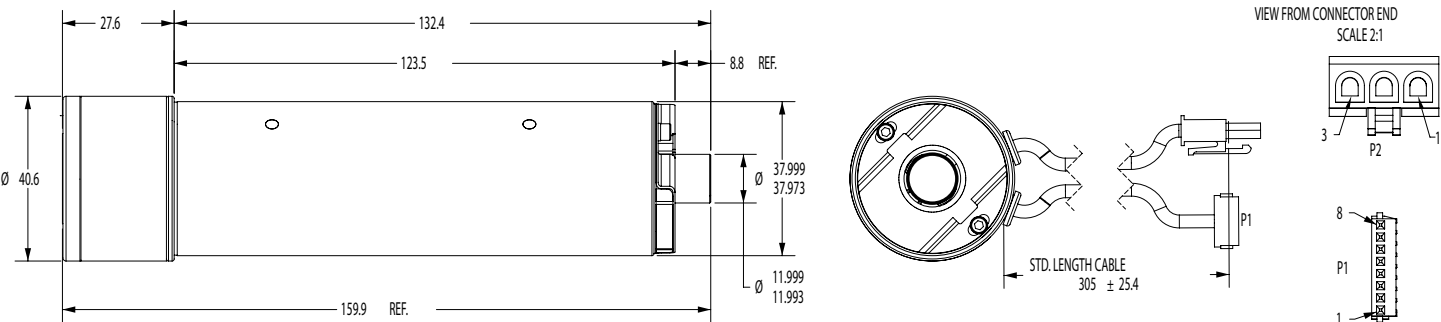


#### Notes:

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GALVANOMETERS

6260KA<sup>1</sup> & 8360KA<sup>1</sup>



**Notes:**  
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**References:**  
1. 6260KA 8360KA models shown with the “A” connector type. Additional connector options are available for all models.

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