



Specifications

For Aurora Scientific Model: 150A Series

Model #	150A-300	150A-300FP	150A-300LR	150A-300LRFP	150A-305	150A-305FP	150A-305LR	150A-305LRFP
DUAL-MODE LEVER								
Length Specifications								
Lever Arm/Footplate Length [cm]	3.0	2.4	3.0	2.4	4.0	4.6	4.0	4.6
Length Excursion (Lever Arm) [mm]	10.0	NA	20.0	NA	20.0	NA	20.0	NA
Angular Excursion (Footplate) [°]	NA	40.0	NA	40.0	NA	40.0	NA	40.0
Length Signal Resolution [micron]	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Length Scale Factor (Lever Arm) [mm/Volt ±2%]	0.5	NA	1.0	NA	1.0	NA	2.0	NA
Angular Scale Factor (Footplate) [°/Volt ±2%]	NA	2.0	NA	2.0	NA	2.0	NA	2.0
Length Signal Linearity ¹ [%]	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
Length Step Response Time ² [millisecond]	1.3	1.3	1.3	1.3	2.0	2.0	2.0	2.0
Sinusoidal Frequency Response ³ [Hz]	530	530	530	530	300	300	300	300
Force Specifications								
Maximum Force (Lever Arm) [mN]	500	NA	1,000	NA	5,000	NA	10,000	NA
Maximum Torque (Footplate) [mN-cm]	NA	1,500	NA	3,000	NA	20,000	NA	40,000
Force Signal Resolution [mN]	0.3	0.3	0.3	0.3	2.0	2.0	2.0	2.0
Force Scale Factor (Lever Arm) [mN/Volt ±2%]	50	NA	100	NA	500	NA	1,000	NA
Torque Scale Factor (Footplate) [mN-cm/Volt ±2%]	NA	150	NA	300	NA	2,000	NA	4,000
Force Signal Linearity ⁴ [%]	99.8	99.8	99.8	99.8	99.8	99.8	99.8	99.8
Force Step Response Time ⁵ [millisecond]	1.3	1.3	1.3	1.3	2.0	2.0	2.0	2.0
System Friction ⁶ [mN]	0.8	0.8	0.8	0.8	3.0	3.0	3.0	3.0
Motor Weight [kg]	0.32	0.32	0.32	0.32	1	1	1	1

¹ Over full-length excursion
² 1 to 99%, critically damped
³ -3dB point
⁴ Over full-length excursion
⁵ 1 to 99%, critically damped
⁶ Over full-length excursion



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Model #	150A-300	150A-300FP	150A-300LR	150A-300LRFP	150A-305	150A-305FP	150A-305LR	150A-305LRFP
STIMULATOR								
Output Pulse Electrical Specifications								
Pulse Output Voltage [V]	0 to ± 80							
Pulse Output Current [milliamp]	0.4 to 1000							
Output Voltage Adjustment	Range switch: 20V, 80V Adjust Potentiometer: 0 to 100%							
Output Current Adjustment	Range switch: 10mA, 100mA, 1A Adjust Potentiometer: 0 to 100%							
Pulse Width [millisecond]	Pulse Trigger Input: 0.01 to 500 Manual Trigger: 1.25							
Pulse Rise and Fall Time ⁷ [μ sec]	<10							
Pulse Recurrence Frequency [Hz]	Single shot to 20,000							
Pulse Phase	Positive, Bi-Phase, Negative							
Maximum Duty Cycle [%]	20							
Pulse Output Control	On/Off Switch							
Pulse Output Connector	BNC							
Trigger								
Trigger Modes	Manual, Follow (via internal DAQ)							
Pulse Trigger Input [V]	$+2$ to $+15$							
Monitor Outputs								
Sync Monitor [V]	$+5V$ pulse/output pulse. Sync pulse width same as output pulse width.							
Voltage Monitor [V]	1 V/10 V output voltage (only active during pulse)							
Current Monitor [V]	1 V/1 A output current (only active during pulse)							

⁷ 10 to 90%



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DAQ								
Data Acquisition Specifications								
Analog Input	Number of Channels: 8 Resolution: 16 bits Sampling Rate: 250,000 samples per second Ports Used: Dual-Mode Lever: AI0 = Length Out, AI1 = Force Out Stimulator: AI2 = Sync Out, AI3 = I Monitor, AI4 = V Monitor Front Panel: AI5 = I/O 1							
Analog Output	Number of Channels: 2 Resolution: 16 bits Sampling Rate: 833,000 samples per second Ports Used: Dual-Mode Lever: AO0 = Length In, AO1 = Force Inc							
Digital I/O	Number of ports: 4 ⁸ Type: TTL Ports Used: Dual-Mode Lever: P0.6 = Inhibit Stimulator: P0.3 = Pulse Trigger Front Panel: P0.1 = I/O 3 (Trigger In), P0.4 = I/O 2 (Trigger Out)							
General Specifications								
Power Required	100, 120, 220, 240 VAC, 50/60 Hz. available							
Power Consumption [W]	120	120	120	120	180	180	180	180
Controller Weight [kg]	8							
Controller Dimensions [cm]	48W (standard 19" rack mount) x 32D x 13H (3U)							

⁸ 4 used, 24 available on DAQ card