CMA Series

Compact Motorized Actuators

- Up to 25 mm motorized travel in a light, very compact design
- Replaces manual micrometer drives with very similar dimensions
- Stepper, open-loop DC, and closed-loop DC servo motor versions
- Integrated limit sensors/switches prevent component and motor damages

CMA Series actuators provide reliable motorized motion in a lightweight and very compact package. The CMA incorporates an excellent space saving design (only 19.7 mm height x 15.2 mm width) that allows it to be used with a wide variety of linear stages, mirror mounts, and OEM applications. The CMA is designed to fit your existing manual stages and other opto-mechanical components as a direct replacement for manual micrometers.

To provide the best fit for your application's requirements, the CMA Series actuators are available in stepper, open-loop DC, and closed-loop DC servo motor versions in 12.5 or 25 mm travel. The CMA provides sub-micron minimum incremental motion and can be used for loads up to 90 N.

To protect your investment, the CMA Series actuators include fixed integrated limit switches. Fail-safe limits cut motor power, preventing accidental over travel on DC open loop versions (CC), while limit-sensing switches provide feedback to your controller indicating that a limit switch has been reached on stepper motor (PP) and DC Servo motor (CCCL) versions.

460P *stage with* CMA *actuators.*

U200-G *with* CMA *actuators.*

861 *Hand-held Controller* (*see page* 1022)

Design Details

Base Material	Aluminum
Drive Mechanism	Rolled lead screw
Drive Screw Pitch (mm)	0.5
Reduction Gear	256:1
Feedback	CCCL: Motor mounted rotary encoder, 40 pts/rev CC, PP: Open Loop (no encoder)
Limit Switches[1]	CC: Mechanical switches CCCL, PP: Limit sensors
Motor	CC, CCCL: DC servo motor UE10CC PP: 2-phase stepper motor UE10PP, 20 steps/rev
	PP, CCCL: 4.6 m with 25 pin Sub-D connector CC: 3 m with "phone jack" connector
Weight [lb (kg)]	0.2 (0.1)

1) Fail-safe limit switches cut power to the motor when limit switch is activated. To move actuator, power must be reversed. Limit sensors send a signal to the controller, when the limit switch is activated. The controller should then cut power to the motor. Not using feedback from the limit sensors will result in damage to the CMA actuator.

Specifications

	CMA-12CC CMA-25CC	CMA-12PP CMA-25PP	CMA-12CCCL CMA-25CCCL
Travel Range (mm)		12.5 or 25	
Resolution (µm)		0.097656	0.048828
Minimum Incremental Motion (µm)	<0.5 typical	0.3	0.2
Bi-directional Repeatability[1] (µm)		4	3
Backlash		<15 µm before controller compensation	
Speed Range[2] (µm/s)	50–400	0–400[3]	50–400
Axial Load Capacity[3] (N)		90	

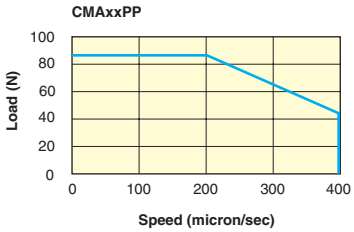
1) Assumes controller backlash compensation.
2) Maximum speed depends on axial load. For CMA-xxCC when used with the 861 controller, the maximum speed is less than 400 µm/sec and is dependent on the strength of the battery supplying power. When used with the NSC200 controller and the NSC-PP adaptor cable the maximum speed of the CMA-xxPP is less then 200µm/sec.
3) Maximum axial load capacity listed. At higher speeds, load capacity will decrease according to graphs shown below.

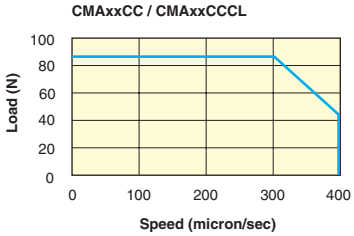
Controller Compatibility

The compatible Newport controllers are matched to the CMA actuator Model number in the following matrix:

	CMA-12CC CMA-25CC	CMA-12PP CMA-25PP	CMA-12CCCL CMA-25CCCL
861	X		
ESP300	X	X	X
SMC100CC			X
NSC200*		X	
XPS	X	X	X

*For NSC200 compatibility the NSC-PP adaptor cable must be used.





Ordering Information

Model	Description
CMA-12CC	12.5 mm Travel Open-loop DC CMA Actuator
CMA-25CC	25 mm Travel Open-loop DC CMA Actuator
CMA-12PP*	12.5 mm Travel Open-loop Stepper CMA Actuator
CMA-25PP*	25 mm Travel Open-loop Stepper CMA Actuator
CMA-12CCCL	12.5 mm Travel Closed-loop DC Servo CMA Actuator
CMA-25CCCL	25 mm Travel Closed-loop DC Servo CMA Actuator
NSC-PP	Adaptor cable for NSC200 compatability,25 pin to 9 pin

*For NSC200 compatibility the NSC-PP adaptor cable must be used.

Dimensions