Summary and Warnings

AML stepper motors are specifically designed for use in UHV environments making them ideally suited for low-speed precision
in-vacuum manipulation. The model D motors are two phase hybrid stepper motors, available in a range of standard sizes
and torque ratings. Standard motors provide 200 full steps per revolution, are suitable for use below 1x10-10 mBar and
temperatures between -65 °C to +190 °C. Extended low temperature range (-196 °C) and radiation hard versions (1 x 106 Gy)
are available options.

The mounting screws are fitted with metered torque. **Do not disturb**. Do not drop, demagnetise, disassemble, modify or
overheat the motor or allow particles to enter the bearings or pumping ports.

Do not touch the stepper motor with bare hands!

The published performance was obtained using an SMD210 drive operating with standard settings for step division. The

SMD210 is a bipolar, switch-mode, current-regulating drive, optimised for use with vacuum stepper motors. Different drives
will produce different speed/torque curves. Drives capable of producing a total phase current of more than 1A RSS (root sum
of squares) may damage the insulation, even if the current is claimed to be adjustable.

Design mechanisms with balanced rotating loads and/or friction to maintain position with reduced or zero phase current for
minimum outgassing. Use step division only to smooth transitions: increase resolution by reduction gearing.

Ensure ice cannot form in the motor if testing at low temperature in air. Avoid thermal shocks, for example, plunging in liquid
nitrogen.