



# CLE-AA-2200

## Description: Long Linear encoders set

### ■ The Customer:

Semiconductors Wafer Handling Manufacturer

### ■ The project:

It was required to control the movement of an object over a large stage of 2000 x 1000 mm which is also in motion with high accelerations. Due to the dynamics of the motion system it is required to be able to sustain extended misalignments on the movement of the moving arm, at the millimeters level.

The solution must be able to endure strong acceleration patterns. In addition a version fully operational under high vacuum conditions is required.

### ■ Our solution:

The following implementation was developed: Two encoders, one of 2 m length and the second of 1 m length, in an active all implementation (active circuitry in both the scale and the read head) were developed.

The solution is in production since 2007 with a vacuum compatible version in production since 2010.

### The performance of the encoder:

Fully operational in vacuum conditions

Travel speed Up to	4 m/s
Resolution	1 $\mu$ m
Accuracy	$\pm 15 \mu$ m
Repeatability	2 $\mu$ m
Dynamic Position Z:	$1.2 \pm 0.6$ mm
Dynamic Position Y:	$0 \pm 0.6$ mm
Dynamic Position tilts, Rx, Ry, Rz :	$\pm 5, \pm 3, \pm 3$ mrad
Encoder Interface	Various Options
Temp range	-40 to 115 $\div$ C
Permissible relative humidity	<90% no condensation allowed
Resistance To shocks	DIN IEC 68 part2 -27
Resistance To vibration	DIN IEC 68 part2 -6
Scale Width Up to	25 mm
Measurement Range Up to	2 m

\* Please note that the presented parameters refer to specific implementations requested by customers and may be adapted to other requirements.