CORNING

Varioptic® Lenses

Marketing Datasheet

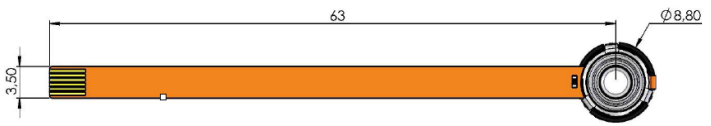
New A-PE-Series : A-PE-25H0-33

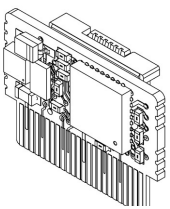
A-PE-Series is a higher degree of integration of the Corning® Varioptic® liquid lens based on the combination of an A-P Series lens with a dedicated driving board. This product has been designed such as reducing the integration and development effort on user side (comprehensive hardware, calibrated lens etc…) as well as to enhance the electro-optical performance of the lens embedding temperature compensation algorithm for better open loop operation and providing response time acceleration features to handle ever increasing sensor frame rates.
This platform will be rolled out across the A-Series portfolio, starting with the A-25H0 lens.

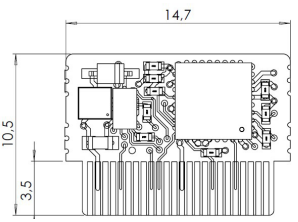
Key Features:

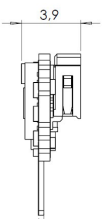
- A-P- Series lens & electronic board
- Multipoint calibration
- Thermal compensation (V-Temp), compensating both lens and driver related thermal variations
- Response time accelaration algorithm (V-Speed) - up to 5x faster
- Innovative driving mode (V-Sweep)

Electronic board mechanical dimensions :









Embeds A-25H liquid lens technology

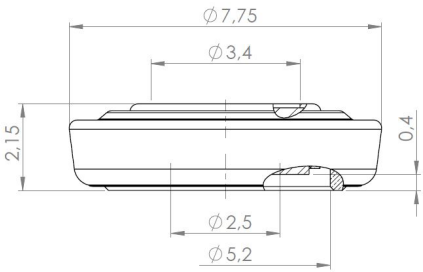
Designed for compact optical systems such as: barcode readers, industrial cameras, medical imaging and biometrics. The A-25H small size, large dynamic range, and low wave front error delivers outstanding performance.

Key Features:

- 7.75 mm outer diameter
- 2.15 mm thickness
- 2.5 mm clear aperture
- Silent
- Focus range from 5.5 cm to ∞
- Easy to integrate

Ordering Information:

- A-25H0 : with an anti-reflective coating optimized in the visible range
- A-25H1 : with an anti-reflective coating optimized in the near infrared
- A-25H9 : with no anti-reflective coating



Specifications:

Typical performance at 25°C

	A-25H
Useful aperture	2.5 mm
Low optical power	-5 diopters (m^{-1})
High optical power	+13 diopters (m^{-1})
Wave Front Error on 2.5mm aperture	30 nm (rms)
Transmission at 587nm (or 850nm for H1)	97%
Storage temperature	from -40 to 85°C
Operating temperature	from-30 to 85°C

Development Kit

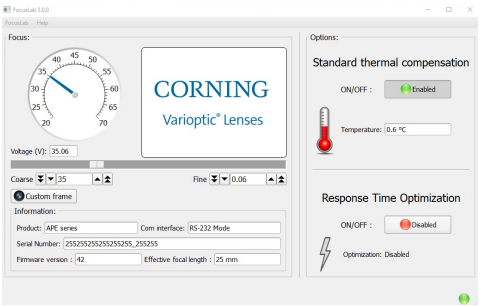
D-A-PE-25HX

Ordering code: D-A-PE-25HX, X=0,1, or 9

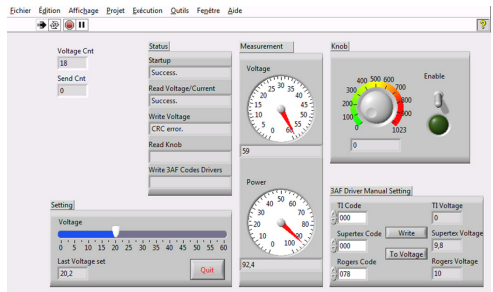
- 1 A-PE-25HX-33
- 1 Maxim Drivboard
- 1 USB-M Universal, USB cable
- Focuslab Software
- Documentation Package

FocusLab

FocusLab allows the contro of the USB-M Flexiboard



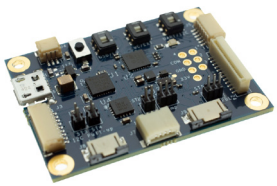
Focuslab windows interface



Focuslab LabView interface

Driver Board

USB-M Universal

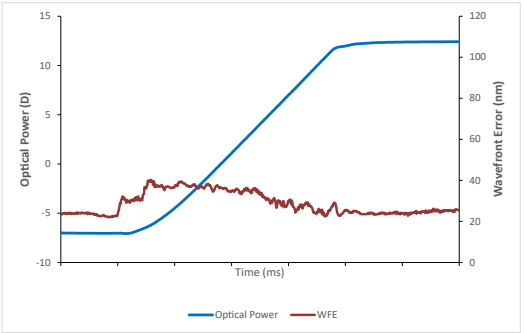


This board is an evolution of the USB-M Flexiboard and embeds dedicated connector to be able to control the A-PE-Series lenses, it is delivered with the A-PE-Series development kits.

Board size : 48 x 35 x 8 mm.

Sweep mode

This mode is particularly suited for applications where the image does not need to remain in focus, typically like on the fly decoding applications. The focus ramp is a linear change of the optical power of the liquid lens with time, allowing acquiring images while the Liquid Lens is still moving, with virtually no settling time. The principle is to cover the full optical power range of the liquid lens such as having the focus moving between infinity and short distance making sure to have any targeted object focused at least on one image. The collected images can then be analyzed and decoded in parallel. This method can be extremely fast since it doesn't require any settling time between 2 focus positions relying on the unique property of the Liquid Lens which is, being able to provide high optical quality even while the optical power is being changed.



A-16F0 – Sweep example

Parameters can be tuned to meet application requirements (rise time, diopter range etc...).