



AX 120R Lite System

To get fast and efficient evaluation of small LCD's panel

AX120R Lite is the ideal, **fast, automated and comprehensive electro-optical testing system as function of temperature**, for small transmissive and reflective displays (140 mm x 120 mm external dimensions) combining:

- **Fast, automated, accurate** and complete electro-optical characterization built on the already proven **EZContrast technology (Optical Fourier Transform)**
- Over-temperature testing of small displays
- User-friendly system
- Versatile illumination



- **Easy customization of measurement process** and analysis, to match your particular requirement (through ActiveX functions)
- **ISO, VESA, TCO standards compatible**
- **Additional options**

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- ✓ **OFT equipment: EZLite 120R**
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- ✓ **The XYZ Table System**
- ✓ **Dark Housing and desk : is included to make testing easier and more efficient.**
- ✓ **Optiscope equipment for response time and flicker**
- ✓ **A PC computer.**

➤ Options

➤ Main features

The System realizes the following measurements:

	<i>All according to</i>	Viewing angle (+/- 60°).	Temperature conditions (40/+80°).	Illumination	2D position on display (Uniformity).
> Luminance and brightness.		✓	✓	✓	✓
> Contrast and Transmittance.		✓	✓	✓	✓
> Color. (optional)		✓	✓	✓	✓
> Reflectance.		✓	✓	✓	✓
> V/T Curves and Grey Levels.		✓	✓	✓	✓
> Integrated Intensity.		✓	✓	✓	✓
> Response time and flicker			✓	✓	

The proposed system is composed of :

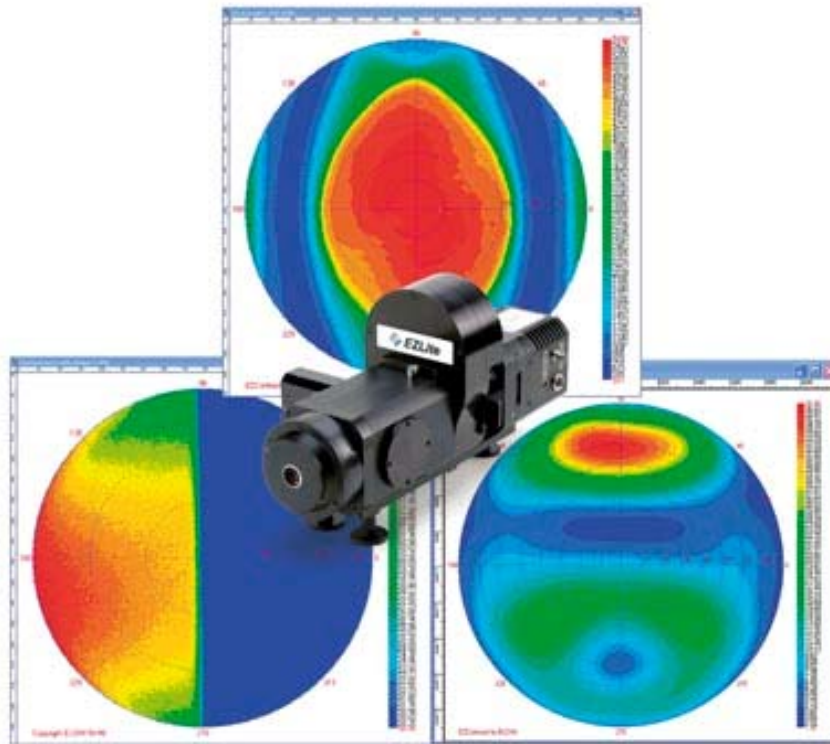
- ✓ An **EZLite 120R** equipment to perform luminance and color measurements (optional).
- ✓ A fully automated bench. The **EZLite** equipment is set on the Z stage. The XY stages allow to realize uniformity measurement with and without the chamber.
 - By :
 - mounting a small thermic chamber on the testing plate
 - or direct testing for larger size display testing in ambient temperature
- ✓ A thermic chamber

➤ The AX120R Lite equipment specifications

The **AX 120R Lite** includes the following items

✓ **OFT equipment : EZLite 120R**

The EZLite 120R is a spatial photometer and colorimeter, which is able to achieve characterization from +/- 60° incident angle, 0-360° azimuth angle coverage in less than 30 seconds.



The standard size of the measurement spot is 2 mm diameter maximum. The measurement spot in reflective or transmissive measurements is discretely adjustable down to 83µm.

See Viewing Angle Line data sheet for detailed specifications.

✓ **Direct View of Measuring area : Spotcam**

Allow to visually check the measuring area on the sample. It provides a visual feedback for moving, centering the sample and adjusting the working distance. A CCD camera is imaging the area under test on a Black and White monitor.

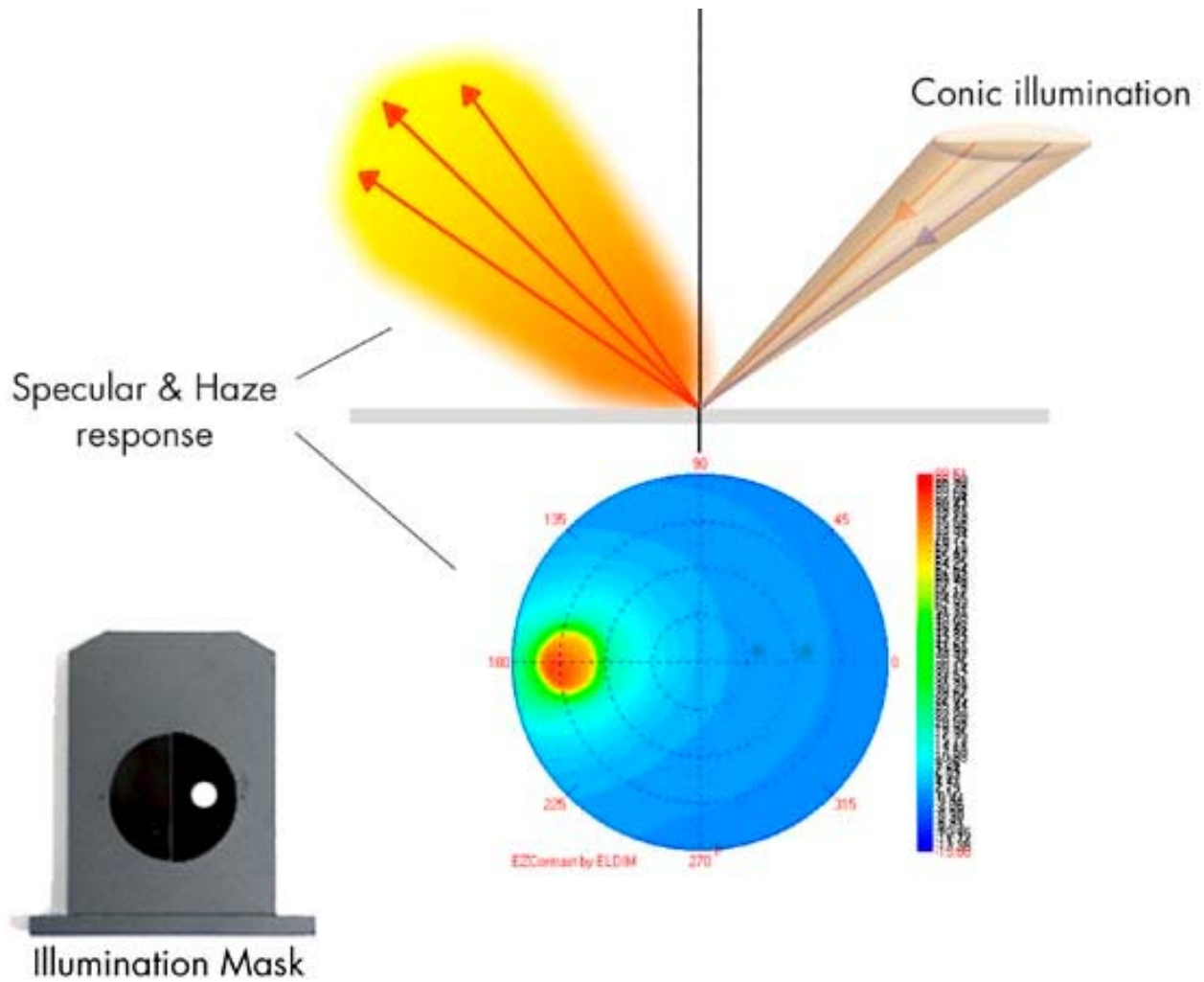
✓ **Measurement under illumination and for reflective display : Lamp and diffuse illumination**



All electro-optical analysis under :

- Versatile diffuse illumination:
 - Full diffuse illumination
 - Ring illumination.
 - Ulbricht sphere.
 - ISO 13406, TCO'99, VESA FDDM illumination requirements (optional)
 - Custom designed (optional).
 - Restricted Diffusing cone (optional)
- Collimated illumination versus angle (manual or automated stage-optional)

Illuminations are realized in accordance to actual standards. It is composed of a **source lamp** and the **Reflective toolkit** , the **Diffuse and Specular (optional)** tools.



Sample of conic diffuse illumination

They produce within +/- 45 ° or +/- 60°(optional) incident angle

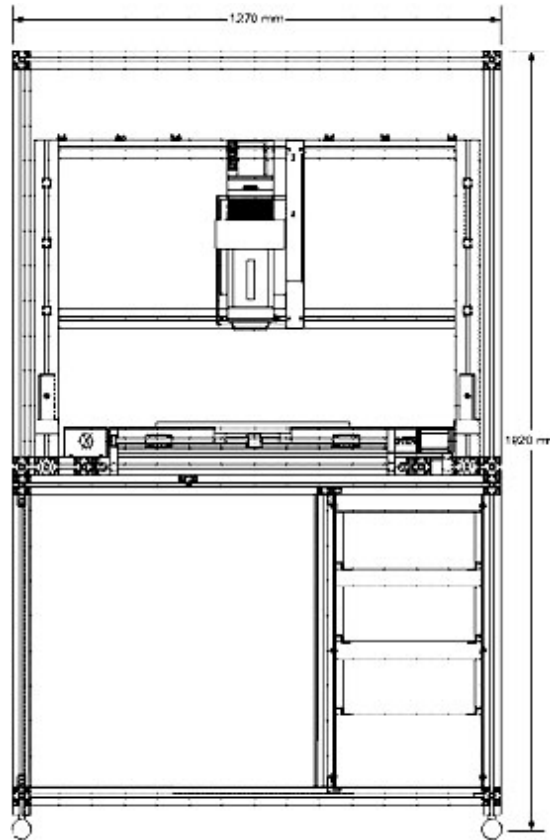
- Any versatile diffuse illumination
- Any collimated illumination

See Reflective option leaflet

✓ The XYZ Table System

The XYZ Table enables

- Z stage to approach the EZLite equipment to the focusing position.
- XY stages to realize measurement as a function of position on the display.
- Allows setting of discrete stops for standard set-ups and over-travel protection.



Main characteristics

XYZ Stage	XY motion area & Z motion length	460 x 360 x 200 mm	
	Speed on Z // accuracy	2mm/s // 1.25µm	
	Speed on XY // accuracy	30mm/s // 10µm	60mm/s // 10µm *
	Power supply (V)	110V 60Hz or 220V 50Hz	
	Max current (A)	4A maximum	

(*):speed on XY//accuracy must be choosen

Note :

With the XYZ Table alone, it is possible to test display uniformity up to around 22".
A plate (460x360 mm) is provided to carry the chamber or a sample holder (not provided).

- ✓ **Dark Housing and desk** : is included to make testing easier and more efficient.

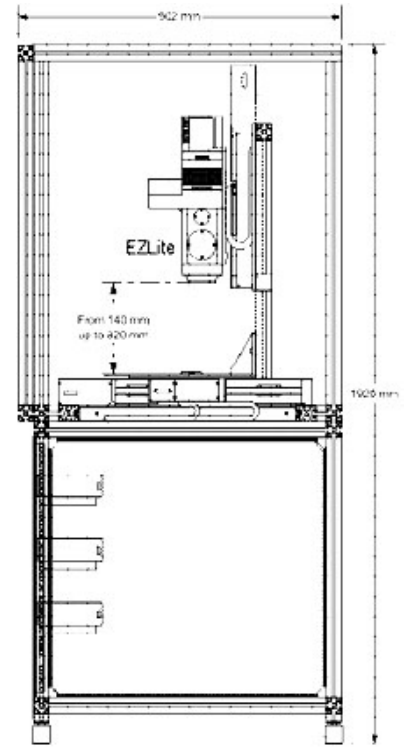
Dark housing

- external dimensions: (see drawings)
- XYZ and their Dark casing (1270mm, 902mm,1920mm) (W,D,H).

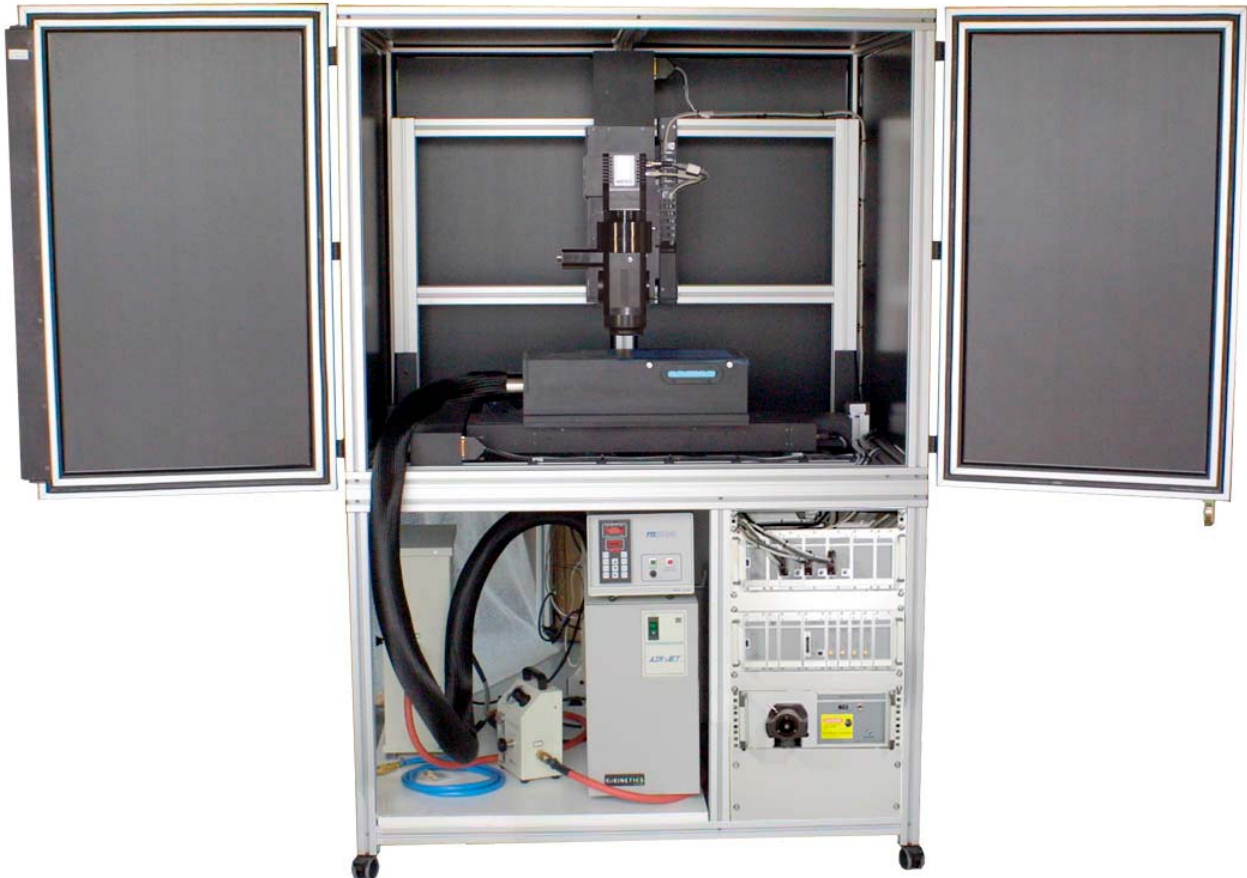
Desk

- (1360 mm, 735 mm, 923 mm) (W,D,H).

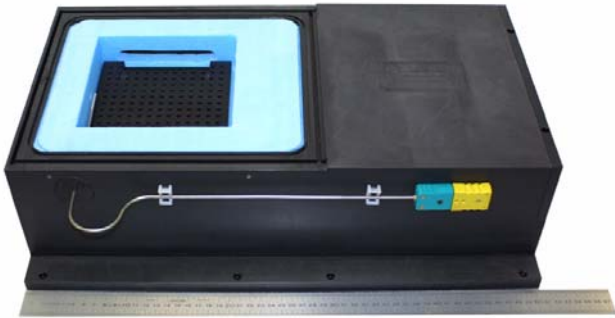
Note :
Full system weight < 200 kg (not including the equipment)



Complete AX120R Lite system



✓ Air Flow Cooling Chamber

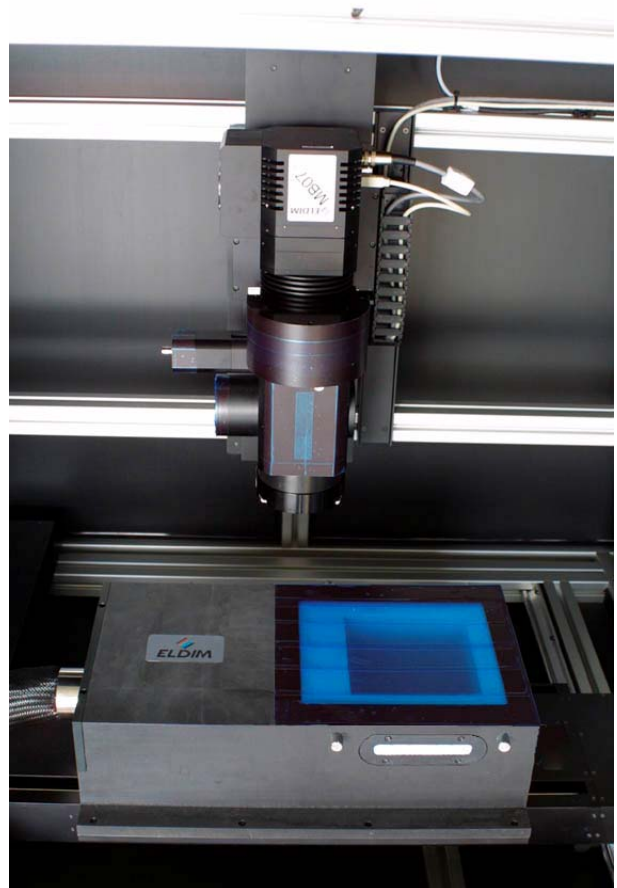
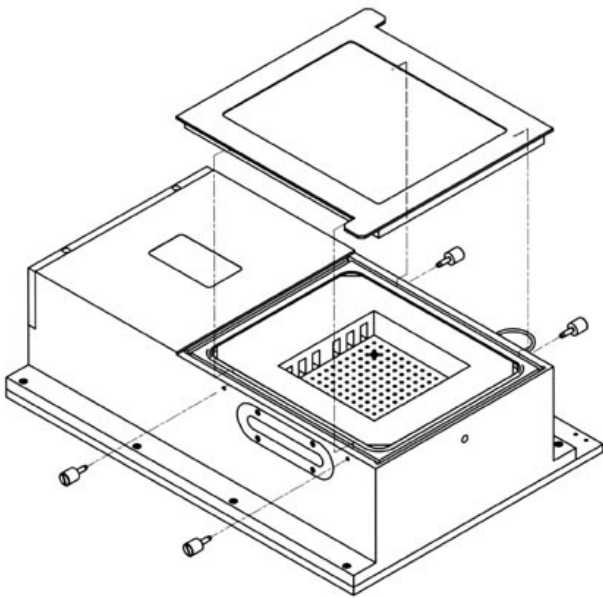


This temperature chamber with an internal volume of 140 x 140 x 30 mm allows measurement up for up to 140 x 120 x 30 mm displays (external size). It is an airflow cooling chamber (Range : -40°C to $+80^{\circ}\text{C}$) and is adequate for small display evaluation.

The chamber is equipped with a glass through which the sample is measured with both the optoscope or the EZlite equipment.

The sample is positioned inside the chamber in order to be as close as possible from the chamber window.

In order to have proper conditions in the chamber, a dry gas must be provided to the airflow cooling system (see Main Characteristics). If you such dry gas production is not available , ELDIM could provide an air dryer as an option. The gas (or air) is for the chamber itself.



Main characteristics

Thermic chamber performances¹	External Working temperature range	0 to +30°C
	Temperature range	-40°C to +80°C
	Temperature fluctuation	+/- 1°C
	Temperature uniformity	+/- 4°C [-40°C to + 80°C]
	Temperature heat-up rate	Within 25 min. from +20°C to +60°C
	Temperature pull-down rate	Within 35 min. from +20°C to 40°C
	Loading capacity (L)	5
	Test area dimensions (W x H x D in mm)	140 x 30 x 120

¹ Performances are given for +20°C ambient temperature and no specimen in chamber

Air-flow cooler	Power supply (V)	110V, 60Hz or 220V, 50Hz
	Max current (A)	9A or 7A
	Air requirements – dry air or dry gas	Pressure: 100PSIG Flow: 2 SCFM Dew point: -100°C
	Optionnal air-dryer/pressure & flow regulator is available	

Note:

If external environment is humid and in certain condition an external dry airflow must be provided by the user to avoid condensation on the front glass.

✓ **Optiscope equipment for response time and flicker**



A stand alone equipment is provided to measure response time and flicker. Including probe for reflective and transmissive samples with a 10 μ s minimum sampling period.

In accordance with Vesa: FPDM version 2.0
 ISO: ISO/FDIS 13406-2
 EIAJ: ED-2522



See *Optiscope Data sheet* for detailed specifications.

✓ **A PC computer**

Main characteristics

PC configuration	Processor	Pentium IV (2 GHz)
	RAM	512 MB DDR SDRam 266 MHz
	HDD	40 GB Ultra DMA
	OS	Microsoft® Windows XP and Office XP

Note:
 The PC configuration is likely to change according to the PC technological trends.

➤ [Options](#)

Are also available :

- Color

The EZLite Color (optional) provides accurate and high speed colorimetric measurement capabilities to the EZLite System. It includes glass color filters designed for each CCD to closely match the CIE 1931. An accuracy of 0.005 on x,y is reached.

- Custom mask for versatile illumination

Custom design on request

- Collimated illumination add-on to reflective option (manual and automated)
- Pattern generator and drivers.
- Air dryer

Main characteristics

Air-dryer/pressure & flow regulator	Power supply (V)	110V, 60Hz or 220V, 50Hz
	Max current (A)	9A or 7A
	Air requirements	Pressure: 100PSIG Flow: 3 SCFM
	Dimensions (W x H x D in mm)	320 x 180 x 530

Please don't hesitate to ask us for more details about systems designed by ELDIM.

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