



The result of years of R&D
in radar meteorology.
The advantages of compact
radar meet the performances
of the bigger ones.
The perfect union.



X-BAND DUAL POLARIZATION AND DOPPLER

The WR-25XP is the flagship product of the ELDES' X-Band mini radar family, characterized by a price/performance ratio that is unique on the market.

The capacity to operate in simultaneous dual-polarization and Doppler capabilities make WR-25XP an ideal instrument for the most advanced radar hydro-meteorological application, as well as for medium-scale civil protection uses.

Given its small size and weight, the WR-25XP can even be installed on a light trailer for quick relocation to areas open to hydrological risk, or to areas with high concentration of people for civil protection needs.

Its cluster networking ability allows the system coverage to be extended practically without limit. The resulting image

produces mosaics, integrating the data collected by all the sensors making up the network.

Thanks to the use of the latest technology, as well as the capital, installation, and operating costs of WR-25XP radars networks, these are a very attractive alternatives to the traditional high-power, large-size, weather radar approach.

A powerful Linux Workstation, typically installed in the Radar Control Centre or near the radar itself, processes the polar data of the three-dimensional spaces containing the instances acquired by one or more radars. The result is the generation of a large number of reflectivity and Doppler products, usually only available with considerably more expensive weather radars.

Furthermore, by means of the differential parameters measured, thanks to dual polarization, a reliable classification of hydrometeors is possible. At the same time, the Doppler processing allows for instantaneous estimation of the turbulence velocity vectors.

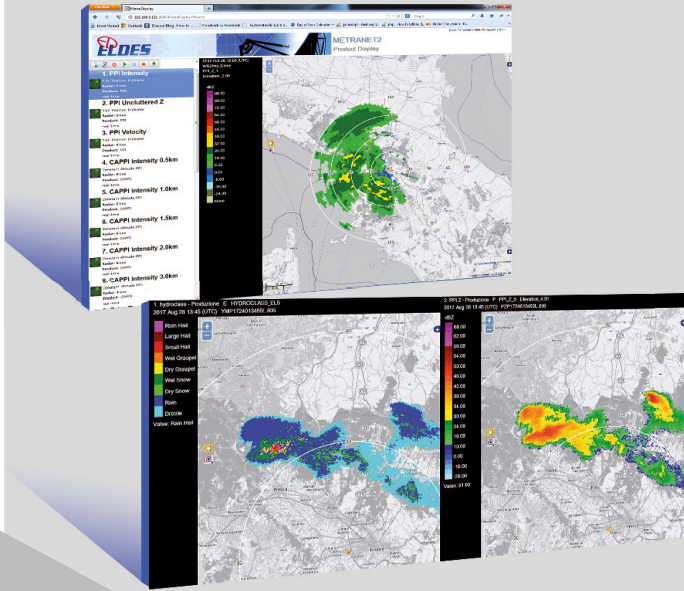
The products can be displayed through a simple graphic user interface; the Metranet2, for immediate use, even by non-experts. The data and weather maps produced can be even displayed through WEB Clients, either supplied by ELDES or third parties. The WR-25XP can be installed in unattended stations as it can be remotely controlled, and it can transmit pre-processed data.

ELDES is based in Italy but thanks to our Service Department, supported by our Distributor network, we can easily reach all parts of the world, ensuring constant support and quick response times.

Gap filling, storm prevention, research, hydrology, transportation, harbour and airport activity, outdoor events... Anticipate the future with WR-25XP.



*Examples
of installations*



WR-25XP Display – Metranet2

AVAILABLE WEATHER PRODUCTS

- > **PPI:** Plan Position Indicator
- > **RHI:** Range Height Indicator
- > **CAPPI:** Costant Altitude PPI
- > **VMI:** Vertical Maximum Intensity
- > **ECHO-VMI:** Maximum Echo Height
- > **VCUT:** Vertical Cross Section
- > **VMSV:** Vert. Max. Intens. Sideview
- > **ECHO-TOP:** Echo Top Height
- > **ECHO-BASE:** Echo Base Height
- > **POH:** Probability of Hall Instant.
- > **HYDRO-CLASS:** Hydrometeor Class
- > **LBM:** Lowest Beam Map
- > **ECHO-LBM:** Height of LBM
- > **NOWCASTING:** Nowcasting
- > **STORM:** Storm Location and movement
- > **ENCODER:** Buf, Hdf5, MDV, GIF, PNG...
- > **VPR:** Vertical Profile
- > **SRI:** Surface Rainfall Intensity
- > **SRISV:** SRI with Side View
- > **SRT:** Surface Rainfall Total. accum.
- > **VIL:** Vertical Integrated Liquid
- > **CAPPI-SRI:** CAPPI of SRI
- > **SRT-SUBC:** Subcatchment Accumulat.
- > **VAD:** Velocity Azimuth Display
- > **VVP:** Volume Velocity Processing
- > **SHEARA:** Azimuth Shear
- > **SHEARR:** Radial Shear
- > **SHEARH:** Horizontal Shear
- > **SHEARV:** Vertical Shear
- > **SHEARE:** Elavation Shear
- > **SHEAR2:** 2D Shear rad.+elevat.
- > **SHEAR3:** 3D Shear rad.+azim+elevat.

Typical applications

- Gap filling
- Observation and classification of weather phenomena on both local and extra-urban scale
- Support for hydrometeorological models and integration of existing pluviometric networks on medium-small basins
- Monitoring of urban area weather conditions for the creation of services for local authorities and users
- Protection of sporting events, concerts and public performances
- Protection of professional outdoor activities such as drilling, construction, harbor and airport activities, etc.
- Support for traffic and mobility management in the presence of adverse weather conditions
- Monitoring of events potentially harmful for agriculture and stock farming
- Insurance appraisals on damage caused by bad weather

TECHNICAL SPECIFICATIONS REFERRED TO IC03 VERSION

TRANSCEIVER TECHNICAL SPECIFICATIONS

Operating frequency:	9410MHz ±30MHz
Peak power:	25Kw (12.5Kw Horizontal Channel - 12.5Kw Vertical Channel)
Average power:	IC = 5W IM = 7.5W IL = 10W (2.5W, 3.75W, 5W x channel)
Pulse width:	0.2 - 0.4 - 0.8 uS (typ.) User selectable
Repetition frequency (PRF):	1000 - 750 - 500 Hz User selectable
Modulator:	Solid state
Receiver:	Linear Digital for simultaneous dual-polarization coherent on receive (Doppler)
Transmitter:	Magnetron
Dynamic range:	> 90dB
Polarization:	STAR
Noise figure:	≤ 3.1dB
Tuning	Automatic with AFC in real time

ANTENNA

Type:	Parabolic prime focus reflector (φ 90cm)
Horizontal lobe width:	≤ 2,5°
Vertical lobe width:	≤ 2,5°
Gain:	≥ 36 dB
Scan mode	<ul style="list-style-type: none"> • PPI: 0° to 360°, 1 deg/s to 45 deg/s • RHI: -10° to 120°, 1 deg/s to 14 deg/s • SECTOR: full sector scanning • POINT: fully programmable fixed-point acquisition
Sector Blanking	2 user programmable both in azimuth and elevation sectors

SIGNAL PROCESSOR

Type:	Digital processing on PC
Generated polar moments:	uZ, cZ, W, V, Zdr, PhiDP, RhoHV, KDP, SNR, CCR, SQI, STAT1 and STAT2
Clutter correction:	Doppler filtering (DFT) and Time-Domain filtering (IIR)
Sensitivity:	6dBz @ 25Km 22dBz @ 120Km
Pulse integration:	Configurable based on pulse number or antenna sync
Calibration:	Automatic (TX and noise correction)
Range scale:	30Km - 40Km - 60Km - 120Km User selectable
Range resolution:	31.25m 62.5m 62.5m 125m Depending upon Range scale

RADAR DATA PROCESSING AND CONTROL (METRANET 2)

Web based real time display of products and mosaic
Local/remote real time display and control for maintenance
Open architecture for multi-radar networks (ELDES and third parts)

GENERAL

Dimensions (typical data)	Radome with base diameter 123.5 cm x height 143 cm
Weight	< 150 Kg excluding mast
Electrical consumption	< 600 VA (PC Included)

Specifications subject to change without notice.