

# Product Data

## MatrixX<sup>dr</sup> <sup>wifi</sup>

X RAY SYSTEM



# MatriX <sup>wi-fi</sup> dr

X RAY SYSTEM

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## Premise

This document was created by IBIS in order to provide its customers and / or potential new customers with all the necessary information on the products; the purpose of this document is to group all the technical specifications of each device created by IBIS.

However, it is necessary to take into account that, according to the model chosen, it is possible to use different electrical, mechanical or radiological components which can be listed in the product technical dossier.

In the case of special requests, therefore, we invite you to contact our technical service that will send you all the details and technical specifications related to the configuration you have chosen.

The specifications indicated in this document refer to standard configurations.

IBIS designs and manufactures medical x-ray equipment for both the human and veterinary sectors. The human range includes Mobile Units, complete Radiology rooms, "C" arms for fluoroscopy examinations, Image Intensifiers and portable generators; for the veterinary sector we produce the CDR vet tables used both in multifunctional clinics and in veterinary clinics, "C" arms for clinics and portable units useful for in-field diagnostics or for radiological examinations on large animals.

The company operates worldwide through distributors that provide the end customer with direct technical support; all internal and external technicians are properly trained to solve any hardware and software problems.

The strong points of IBIS are the continuous commitment to develop new products, the relationship with the customer, the great reliability of the products and the technical assistance.

IBIS, as a manufacturer of imaging equipment, is constantly improving its products; we therefore invite you to download the most up-to-date revision concerning the product of your interest from the website [www.ibisray.it](http://www.ibisray.it).

If you need further technical details you can contact our technical department by contacting us by phone or by sending an e-mail to [technical@ibisray.it](mailto:technical@ibisray.it); one of our technicians will answer you and give you all the required details.

## Company data and contacts

Below are the references to contact our staff:

### IBIS S.r.l.

Headquarters: Via Cascina Bruciata, 3 – Seriate Bergamo – ITALY

Phone: 0039 035 4236343

Sales Department :

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Technical Department :

[technical@ibisray.it](mailto:technical@ibisray.it)

Technical Assistance :

[service@ibisray.it](mailto:service@ibisray.it)

Quality Department :

[quality@ibisray.it](mailto:quality@ibisray.it)

Administration :

[administration@ibisray.it](mailto:administration@ibisray.it)

General Information:

[info@ibisray.it](mailto:info@ibisray.it)





## General description

*(Valid for the entire MatriX range)*

**MatriX** is a mobile unit designed for radiological applications and diagnostic investigations in hospital environments (operating theaters, pediatrics, orthopedics, sports medicine) and emergency departments. Thanks to its lightness, it is easily transportable within the hospital unit between the various departments as well as directly in the hospital ward where it is necessary to avoid the patient moving to the diagnostic imaging department.

The combination of maneuverability, ease of use and wide movement of the arm offers to the users an intuitive product with rapid activation.

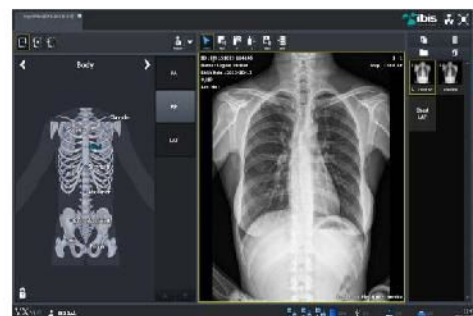
The movable arm allows to move the monoblock from the bottom upwards and vice versa until reaching the correct position of exposure; **MatriX** also offers the movement of the arm on the horizontal axis that is very used for bedside activities. The wide excursion ensures the possibility of use in various environments such as patients bedded, on stretcher, on wheelchair, etc.

The arm travel on the horizontal axis is 180 ° thus allowing an easy positioning even in environments with little room for maneuver available.

The possibility of freely rotating the monobloc with a total excursion of 125 ° (-20 ° / + 105 °) also makes it possible to use the **MatriX** unit also with radiographs or in the case of particular positions. It is possible to orbit the monoblock by +/- 180 °, showing, through the built-in goniometer, the exact angle of exposure.

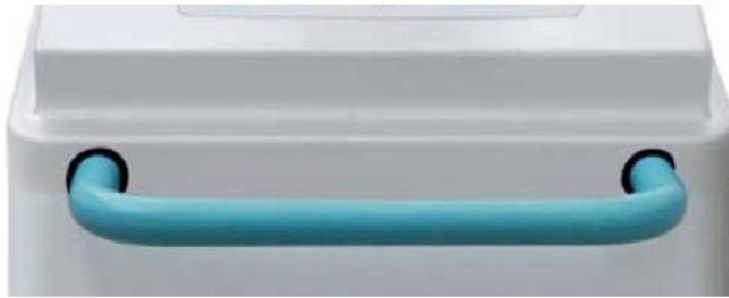
The overall dimensions in transport conditions are very reduced, allowing easy maneuverability inside the departments and easy storage when not in use.

A large 19 "HD color monitor (only on Matrix dr) allows the operator to immediately have all the exposure data and images available and can easily change them with just one touch.



The monobloc excursion is facilitated by a comfortable handle; the same for pushing the unit through a handle that also incorporates the brake.

The brakes are "dead man" type, so, in the absence of pressure on the handle, the equipment activates the mechanical brakes preventing accidental movements of the unit.



The front twin wheels are designed to overcome small differences in level, such as entry into the elevator or low obstacles; in the case of higher obstacles, it is possible to tilt the unit through a light pressure of the foot on a bar placed under the unit.

**MatriX** è dotato di un sistema di antiribaltamento che impedisce cadute od oscillazioni dovute allo sbraccio orizzontale dell'unità.

A back pocket has been added to the **MatriX** unit in order to be able to freely insert a detector panel.

The unit is equipped with a double-snap button with spiral cable which allows the operator to perform the X-rays in complete safety at an adequate distance.

The units of the **MatriX** series are available in the following versions:

**MatriX** LP with 3,5 kW generator

**MatriX** HP6 with 6 kW generator

**MatriX** HP15 with 15 kW generator

**MatriX** HP32 with 32 kW generator

**MatriX** *evo* with 32 kW generator and battery/plug powered

**MatriX** *dr* with 32 kW generator



## Product Specification: **MatriX dr**

**MatriX dr** uses two types of radiological technique: two-point with choice of kV and mAs and three point with choice of kV, mA and mS.

These values can be viewed on the large touch screen display.

The unit is equipped with an automatic shut-off system after 30 minutes of inactivity. This feature prevents the unit from being switched on by mistake for long periods, thus avoiding compromising the operation of the X-ray tube (focuses always on).

**MatriX dr** is able to set the radiological values for each type of anatomic and projection selectable in the software, automatically adjusting the generator. The quantity of memorized anatomical parts is customizable.

As per regulations, all the radiological units of IBIS can be equipped with a dosimetric system. The patient data and the received dose are displayed directly on the image, with the possibility of printing or sending to the PACS through the Dicom protocol.

Manual radius button with double click and extensible cable.

The relevant feature of **MatriX dr** is the ability to immediately process images and to present them to the operator on the on-board HD screen. This operation is possible thanks to a PC inserted inside the unit able to interface with most of the direct digital panels available on the market. The operation is facilitated by the touch screen panel on which is possible to view the software related to the panel in use; all exposure parameters can be freely entered through this 19" high-definition screen. The



image data is transferred from the panel to the computer and vice versa via a wireless network generated directly by the unit through powerful antennas.

The computer is able to store the images acquired through an additional HD coupled to that used for the management of the operating system and software.

*MatriX dr can only be used through the mains power, however the computer is kept switched on via a UPS system inserted in the equipment; this allows the user to be able to move freely in the departments or rooms without having to worry about switching off and restarting the operating system.*

These features make **MatriX dr** one of the most functional digital image acquisition systems on the market thanks to the speed of acquisition of exposures, the ability to immediately have a result and to be able to process it directly on the acquisition place.

ATTENTION: for the correct use of the equipment refer to the user manual of the product



## Radiological and Electrical Characteristics of the Product

### MatriX dr

#### Radiological and Electrical Characteristics of the Product

##### Generator

Max Power	32 kW Large Focus – 11 kW Small Focus
Max Voltage of the Monobloc	125 kV
Max Current of the Monobloc (piloted)	400 mA
Work frequency	100 kHz
Ripple at Max Power	≤3%
Total Filtration	> 2,7 mm Al
Inverter Model	HF1 100/2
kV Variation	1 kV
Max mAs	220 mAs (28 Steps)
Step mAs	0,2 / 0,5 / 0,8 / 1 / 1,3 / 1,6 / 2 / 2,5 / 3,2 / 4 / 5 / 6,3 / 8 / 10 / 13 / 16 / 20 / 25 / 32 / 40 / 50 / 63 / 80 / 100 / 130 / 160 / 200 / 220
Operating Modality	2 or 3 points techniques
Anatomical Technique (APR)	Customizable

##### Monobloc

Monobloc Type	E 100R HF
Max Voltage of the Monobloc	125 kV
Max Current of the Monobloc	425 mA
Thermal Capacity of the Monobloc	900 kJ - 1200 kHU
Continuous Thermal Dissipation of the Monobloc	60 W
Available Thermal Capacity (X-Ray)	600 kJ – 800 kHU
Ripple Monobloc at Max Power	1%

##### Tube

Insert Type	IAE X22C	Kailong KL65
Focuses Dimensions	0,6 – 1,3 mm	0,6 – 1,3 mm
Type of tube	Rotating Anode	Rotating Anode
Anode speed	3000 rpm	3000 rpm
Anodic Angle	15°	15°
Maximum Thermal Capacity of the Insert	80 kJ - 107 kHU	80 kJ - 107 kHU
Maximum Capacity Dissipation of the	300 W	300 W

##### Power features

Main system power supply voltage	Single Phase, 230 Vac +/-10%
Frequency	50/60 Hz
Absorption connected to the network	0,5 A standby; 230 Vac - 12 A pulsed

**MatriX dr**
**Collimator characteristics**

<b>Model *</b>	RALCO R104
<b>Shutters</b>	2 pairs of mobile leaded shutters + extra fixed focal length
<b>Light</b>	LED light high intensity 250 lux at 100 cm, with 30 sec ON / OFF timer (standard).
<b>Dimensions</b>	271x222x140 mm
<b>Field covered</b>	Square field with single plane, variable from 0x0 cm to 43x43 cm at 100 cm DFF
<b>Angle of the light cone</b>	24°
<b>Minimal inherent filtration</b>	Equivalent to 2 mm Al
<b>Additional Filtration (Optional)</b>	RO258 = Al + (0,1 mm Cu / 0,2 mm Cu / 2 mm Al) RO258/1 = Al + (0,1 mm Cu / 0,2 mm Cu / 0,3 mm Cu)

\* Also available in R108 or R221 versions. For further details refer to technical dept IBIS S.r.l.

**MatriX dr**
**Operational Features**

<b>User Interface</b>	19 " HD color monitor touch for the insertion of all parameters and for the display of images and any error messages or system anomalies.
<b>DAP Camera</b>	Yes (optional)
<b>Automatic Closedown</b>	An automatic device automatically shuts down the system after 30 minutes of inactivity for tube prevention (based on the chosen management software).
<b>X-Ray Button</b>	Double click manual with extensible spiral cable
<b>Safety devices</b>	<ul style="list-style-type: none"> <li>• Protection and automatic control of filament current</li> <li>• Protection against over current and over voltage</li> <li>• Overload protection of the x-ray tube</li> <li>• Indications of operational errors or malfunction</li> <li>• Anti-tipping protection</li> </ul>

## Mechanical characteristics

### MatriX dr

#### Mechanical characteristics

Monobloc inclination (rotation on Y axis)	-50° / +105°
Monobloc rotation (rotation on X axis)	+/- 180°
Collimator rotation	+/- 90°
Width	698 mm
Length (at maximum arm extension)	1930 mm
Length (in transport configuration)	1478 mm
Height (in transport configuration)	1470 mm
Maximum focus height	1968 mm
Maximum DFF at floor level	2055 mm
Minimum DFF to the floor	428 mm
Maximum front reach (from the column)	1301 mm
Stop system	"Dead man" braking system on the handlebar
Weight	310 kg ( <i>without optional</i> )



## Reference symbols



CONSULT THE ANNEXED DOCUMENTATION



CLASS B EQUIPMENT (EN60601-1)



ATTENTION



SYMBOL OF DANGER: IONIZING RADIATIONS - PHYSIOLOGICAL EFFECTS



DEVICE THAT REQUIRES A CORRECT DISPOSAL (2012/19 / EC)



MANUFACTURER



CE MARKING PURSUANT TO DIRECTIVE 93/42 / EEC AND SUBSEQUENT AMENDMENTS AND INTEGRATIONS