InAlyzer 2

Technical Specification

1.1 Introduction

'InAlyzer2' developed by MEDIKORS Inc. is the BMD and Body composition analyzer for experimental animals by using DXA (Dual Energy X-ray Absorptiometry) technology. This system provides accurate Bone Mineral Density and Body composition (BMC, Fat, Lean) results of experimental animals with a measurement error range of less than 1% in 0.001g. And it can analyze experimental animals of various sizes, including rats, dogs (small dogs), cats, rabbits, guinea pigs, hamsters, and monkeys. In addition, through simple anesthesia, continuous analysis is possible.

(1) Applications

Academics and pharmaceutical researchers can use this device to analyze bone density and

body composition in experimental animals to investigate genetics, cell physiology, and materials that affect bone or soft tissue composition. This device is used in a variety of fields, including biomedical, bioscience, biotechnology, bone metabolism, dental, food & nutrition and pharmaceutical, which need to be operated by researchers with good understanding of preclinical research.

(2) Advantages

① The analysis of various size of experimental animals
- S type (Standard scan area: 140mm x 210mm): mouse, rat, hamster, lemming, gerbils, etc.
- SL type (Optional scan area: 140mm x 315mm): mouse, rat, hamster, lemming, gerbils, etc.
- M type (Optional scan area: 210mm x 315mm): small dog, cat, rabbit, guinea pig, etc.

② The analysis mode option and fast scan time
The analysis mode of this device has 3 options, especially in Quick mode, the scan time is about 28 seconds.
- Quick: One scan measurement (Scan time: approx. 28 sec.)
- Optimum: Five times measurement (Scan time: approx. 84 sec.)
- Accuracy: Ten times measurement ((Scan time: approx. 140 sec.)

③ ROI (ROI, Region of Interest) setting
- Settle up to 30 ROIs and 10 Customized ROI (CROI) in places such as spine, femur, and humerus to provide bone density and body composition analysis results for each ROI.
In addition, the Exclusive Region of Interest (XROI) setting provides bone density and body composition analysis, except for areas that affect the analysis of experimental animals.

④ Cost and time effectiveness
Since it is possible to measure on a daily, weekly, or monthly basis without dissection the experimental animal with simple anesthesia, continuous experiments are possible. This can save time and money.

⑤ Provides accuracy with less than 1% measurement error. (CV. Phantom)

⑥ Radiation shielding
It is designed to be shielded with lead inside, minimizing the exposure of the experimental researcher to radiation.

⑦ Easy data storage
The analysis results can be saved in files such as Excel, Tiff, etc., marking it convenient to write reports and papers.

⑧ High resolution image

By using a 99μm-class linear detector, you can acquire detailed anatomical information by providing a high-resolution image of 5.0lp/mm.

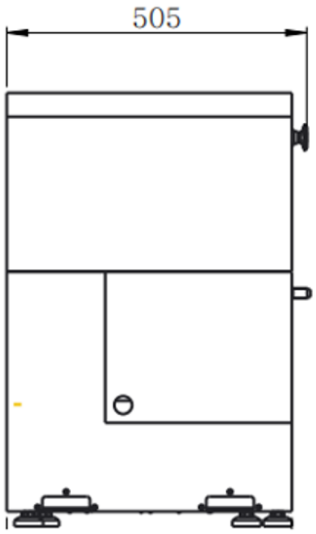
1.2 Specification

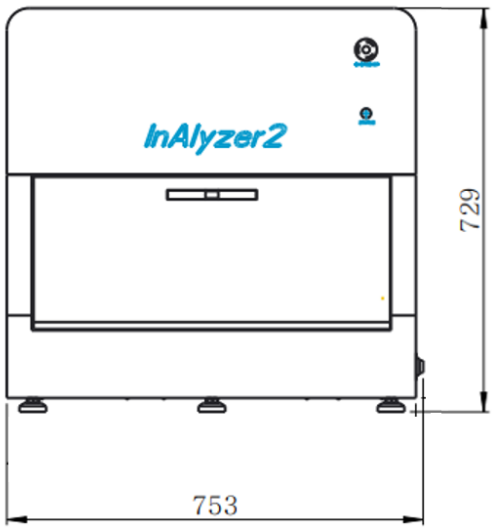
(1) Device appearance

[Door Open Side]

[Frontal]

[Door Open Frontal]





- Dimension: 753mm(W) x 505mm(D) x 729mm(H)
- Weight: 138(kg)

(2) System component

① Standard component

Component	Item	Q'ty
Main equipment	Main equipment	1EA
Accessory	Power cable	1EA
	LAN cable	1EA
	USB cable	1EA
	Software program (InAlyzer2 Software)	1EA
	Positioning paper (100 Pages)	1EA
	Thick phantom (Calibration)	1EA
	Thin phantom (Calibration)	1EA
	Reference phantom (Maintenance)	1EA
	User manual	1EA
	Key switch	1EA

② Optional

Option item	Minimum specification
Control box (1Set)	Operation System : MS Windows 10 (64 bit)
	CPU : Intel Dual Core Processor equality or above
	Graphics : Integrated Graphics
	System Memory : 4GB equality or above
	HDD : 500GB equality or above (recommendation : 1TB above)
Monitor	Resolution : 1920 X 1080
Keyboard	-
Mouse	-

(3) Specification

Item	Specification
X-Ray System	DXA (Dual Energy X-ray Absorptiometry)
X-ray Energy	80kV(max.), 1.20 mA(max.)
Detecting Technology	Fan Beam
Double Imaging Model	DR, DXA
Analysis Function	BMD, Body Composition (BMC, FAT, LEAN)
Scanning Site	Total or Specific part of Small and Middle-Sized animal
Optional Mode & Time of Scanning	DR mode : about 10 sec. Quick mode : about 28 sec. Optimum mode : about 84 sec. Accuracy mode : about 140 sec.
Radiation Exposure	DR mode : 4 sec. Quick mode : 21 sec. Optimum mode : 63 sec. Accuracy mode : 105 sec.
Scanning Area (mm)	140 x 210mm (S Type) 140 x 315mm (Optional : SL Type) 210 x 315mm (Optional : M Type)
Precision & Accuracy	Error < 1%(CV), Static Condition
Detector Resolution (Pixel size)	99μm
Power	100~240 VAC, 50/60 Hz
Operating System	Windows 10 (64bit)
CPU	Intel Dual Core Processor
Memory	4GB
HDD	500GB
Monitor Resolution	1920 x 1080
Operating Temperature & Humidity	Temperature : 20 ~ 35 ℃ Humidity : 20 ~ 80 %
Condition of Storage & Transport	Temperature : -10 ~ 55 ℃ Humidity : 20 ~ 80 %
Dimension (mm)	753(W) x 505(D) x 729(H)mm
Weight (Kg)	138kg
Method of Monitoring	Inner Camera

(4) Features

① Standard component

- Analysis object : Small/ middle size experimental animal (Mouse, rat, dog, cat, rabbit, guineapig, hamster, monkey, etc.
- Analysis area : Total body or ROI (Region Of Interest) of experimental animal.
- Analysis result : Total weight, BMD, body composition (BMC, FAT, LEAN).

Item	Unit	Information
BMC	g	Bone Mineral Contents (Bone Mass)
BMC ratio	%	BMC / Total Mass
FAT	g	FAT Contents (FAT Mass)
FAT ratio	%	FAT / Total Mass
LEAN	g	LEAN Contents (LEAN Mass)
LEAN ratio	%	LEAN / Total Mass
Total mass	g	Total Weight
BMD	g/㎠	Bone Mineral Density
Bone Area	㎠	Area of Bone
Bone Volume	㎤	Estimated Bone Volume
Fat in Tissue	%	FAT / Tissue, Tissue = FAT + LEAN

② Scan and X-ray exposure time

Analysis mode	Scan time	X-ray exposure time
DR Mode	About 10 sec.	4 sec.
Quick Mode	about 28 sec.	21 sec.
Optimum Mode	about 84 sec.	63 sec.
Accuracy Mode	about 140 sec.	105 sec.

③ Main functions

- Total and Region Of Interest's BMD and body composition analysis.
- ROI function (Specific area analysis function)
- XROI function (Exclude specific area analysis function)
- Automatic bone area detection of experimental animal.
- Real-time status check of experimental animals with internal cameras.

- Providing trend chart by total body or ROI of experimental animal.
- Video editing function (Contrast, brightness, zoom, rotation, etc.)
- DXA and DR mode function to obtain high resolution images.