

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

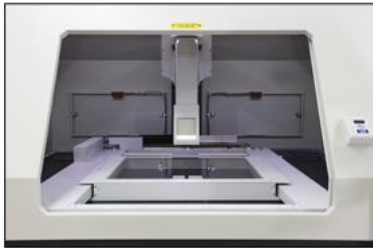
Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

<https://thorlabs.nt-rt.ru/> || tbe@nt-rt.ru

Innervision® X-Ray Measurement Systems

- ▶ Non-Destructive Internal Coordinate Measurements
- ▶ 1.5 MP CMOS Flat Panel Detector
- ▶ Granite Base Ensures Thermal and Mechanical Stability
- ▶ Smooth, High-Speed Positioning with 0.1 μm Precision



X-Ray Coordinate Measurement System Interior



XA712
X-Ray Measurement System,
710 mm x 660 mm Range

Features

- Non-Destructive Measurements of Internal Geometries
- XY Measuring Range Options:
 - 710 mm x 660 mm (28" x 24")
 - 1270 mm x 915 mm (50" x 36")
- High-Speed (500 mm/s) Translation using Linear Motors
- 2D Measurements with CNC and Manual Operation
- $\text{\O}5 \mu\text{m}$ Spot Size, 20 - 90 kV X-Ray Source for High-Resolution Images
- Stable Granite Base Ensures High Accuracy and Repeatability
- Ergonomic Workstation for Simple and Convenient Operation
- Advanced, Feature-Rich MetLogix® M3 Metrology Control Software
- Optional Accessories for Added Functionality and Flexibility
 - Hinged Polycarbonate Platen to Retain Thin Electronics
 - Radiation Meter to Monitor X-Ray Leakage
 - Calibration Grid to Ensure Accuracy and Orthogonality

Thorlabs' InnerVision® X-Ray Measurement Systems are robust coordinate measuring systems that utilize an X-ray source to measure and locate internal or surface-level features of electronics or other small devices. Automated protocols enable inspection of large volumes of parts sequentially or simultaneously. With tolerance reports and export utilities, thresholds can be set to enable timely corrections to a production process or, when necessary, interruption of production to minimize scrap.

Each metrology system is supported by a granite base to provide the utmost measurement stability. Balanced, non-contact, magnetic linear motors with air bearings are used to position the XY stage quickly, quietly, and accurately. The system's X-ray source, located under the polycarbonate stage platform, has a $\text{\O}5 \mu\text{m}$ spot size at 4 W of electrical power and a 20 kV to 90 kV voltage range (maximum electrical power of 8 W). This can easily penetrate common circuit board materials such as copper and fiberglass up to 0.5" thick, in addition to a variety of plastics and composites with lower X-ray scattering. An X-ray collection path is cantilevered with granite support over the stage. This includes a radiation shield and a 1.5 MP CMOS flat panel detector to collect, process, and record the transmission signal through the sample.

Please see the *Design Features* and *Specs* tabs for more details on the systems. The base systems can be upgraded to include additional accessories, including a hinged polycarbonate platen, radiation meter, and calibration grid. Please see the *Accessories* tab for details on these options.

Base Item #	XA712	XA1272
XY Control		
Stage Bearings	Air and Mechanical	
Stage Motors	Linear	
Measurement (Travel) Range	710 mm x 660 mm (28" x 24")	1270 mm x 915 mm (50" x 36")
U ₉₅ Accuracy ^a	(5.0 + L/200) μm	
Velocity	500 mm/s	
X-Ray Source		
Type	Sealed Tube with Integrated Power Supply	
Spot Size	Ø5 μm at 4 W	
Full Exit Angle	39°	
Voltage Range	20 - 90 kV	
Current Range	10 - 200 μA	
Max Electrical Power	8 W	
Electron Beam Power	8 W (Max)	
Focus-to-Object Distance (FOD)	9.5 mm	
Flat Panel Detector		
Sensor	CMOS	
Resolution	1.5 MP	
Pixels (H x V)	1032 x 1548	
Frame Rate	30 fps	
Field of View (FOV)	20 mm Diagonal	
Scintillator Material	Gd ₂ O ₂ S	
Dynamic Range	3000:1	
Digitization	14 Bits	
Unit Dimensions		
Typical Unit Dimensions		
Rear Clearance	Allow Approximately 500 mm (18") for Servicing	
Approximate System Weight (Uncrated / Crated)	2600 kg (5700 lbs) / 2760 kg (6050 lbs) 5443 kg (12 000 lbs) / 5683 kg (12 550 lbs)	
General		
Radiation Leakage (5 cm from Any Surface)	0.3 mR/hr Maximum	
Operating Temperature	Range	20 ± 0.5 °C (67° - 69 °F)
	Rate	0.25 °C/hr (0.5 °F/hr)
Relative Humidity (Non-Condensing)	30% - 80%	
Line Voltage	115 / 220 VAC, 50 / 60 Hz, Single Phase, 1.0 kW	
Air Supply (For Stage Bearings)	Velocity	85 L/m (3 CFM) Dry Air
	Pressure	7 - 8.25 Bar (100 - 120 PSI)

a. L is the point-to-point travel distance, or diagonal travel distance. This applies to a thermally stable system at 20 °C using a certified artifact.

Алматы (7273)495-231
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Уда (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

Россия +7(495)268-04-70

Казахстан +7(7172)727-132

Киргизия +996(312)96-26-47

<https://thorlabs.nt-rt.ru/> || tbe@nt-rt.ru