

Ra-Mon

Portable Gamma Radiation Detector

Manufactured by **Ace-Ex Industries**

with Incubation from CTS, **BARC** for developing **CsI:TI crystals**





About Ace-Ex Industries

35 years of expertise in **Radioactive Environments**

Ace-Ex Industries has extensive expertise from experience in designing and developing engineering solutions specifically for **critical applications**.

AI offers a variety of products and machines tailored for **backend, front-end, and process-based applications**.

AI has executed 100s of projects with DAE units such as BARC, NPCIL, NFC, KAPS, NAPS, TAPS, TMC, BRIT, ECIL, SAMEER and premier Institutions BHEL, ONGC, IOC, Mazagon Dock, RIL, ESSAR, Chennai Petroleum, BPCL, MRPL, L&T, etc.





A few of our Projects

1. **Hydrogen processing and application systems**
2. **Controlled atmosphere Glove Boxes**
3. **Underwater remote controlled machines**
4. **Integrated Nuclear waste scanning systems**
5. **Gamma Scanning Systems for non-destructive testing for various industrial applications**
6. **Equipments and machines for remote controlled applications and radioactive environments**

And many more...





Our Manufacturing Facility for Crystal Development

Ace-Ex Industries has successfully established the manufacturing facility for developing CsI:TI crystal in collaboration with CTS, BARC.

We make CsI, NaI, NaI:Li crystals from 1" to 3" in diameter and 4" in length

We also make crystals of other sizes as per customized requirements



(Crucible before
loading into furnace)

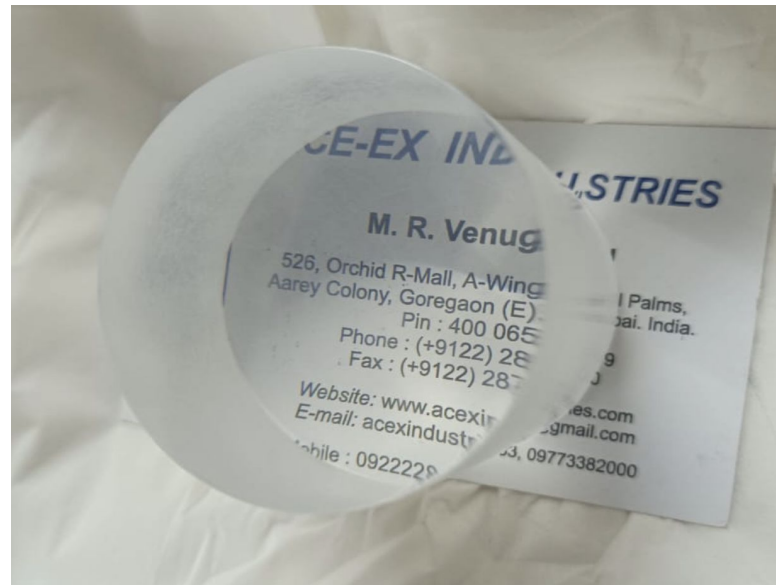
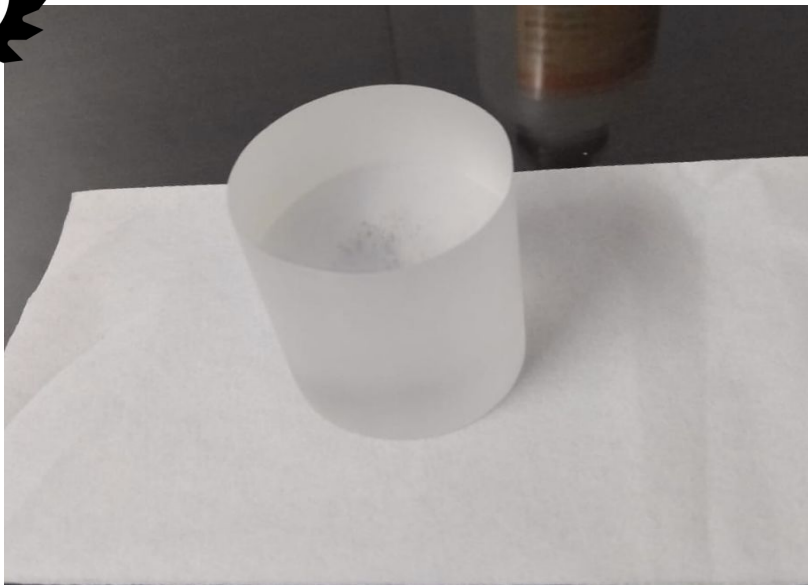


(Crucible after unloading
from furnace)



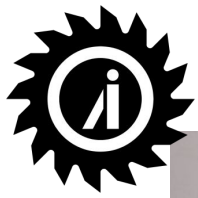
(Raw Crystals developed at our facility)



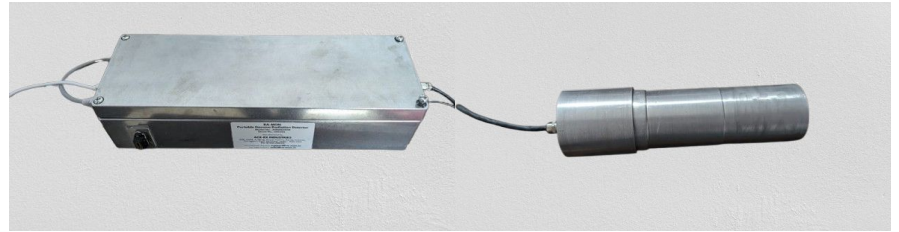


(Polished and finished crystals)





(Initial
Prototype)



(Final Product - Data Processing Unit
with Raspberry Pi and Detector)





(Lead block for shielding source)



(Reference radioactive sources for calibrating and testing crystals grown at our facility)



Ra-Mon - Portable Gamma Radiation Detector

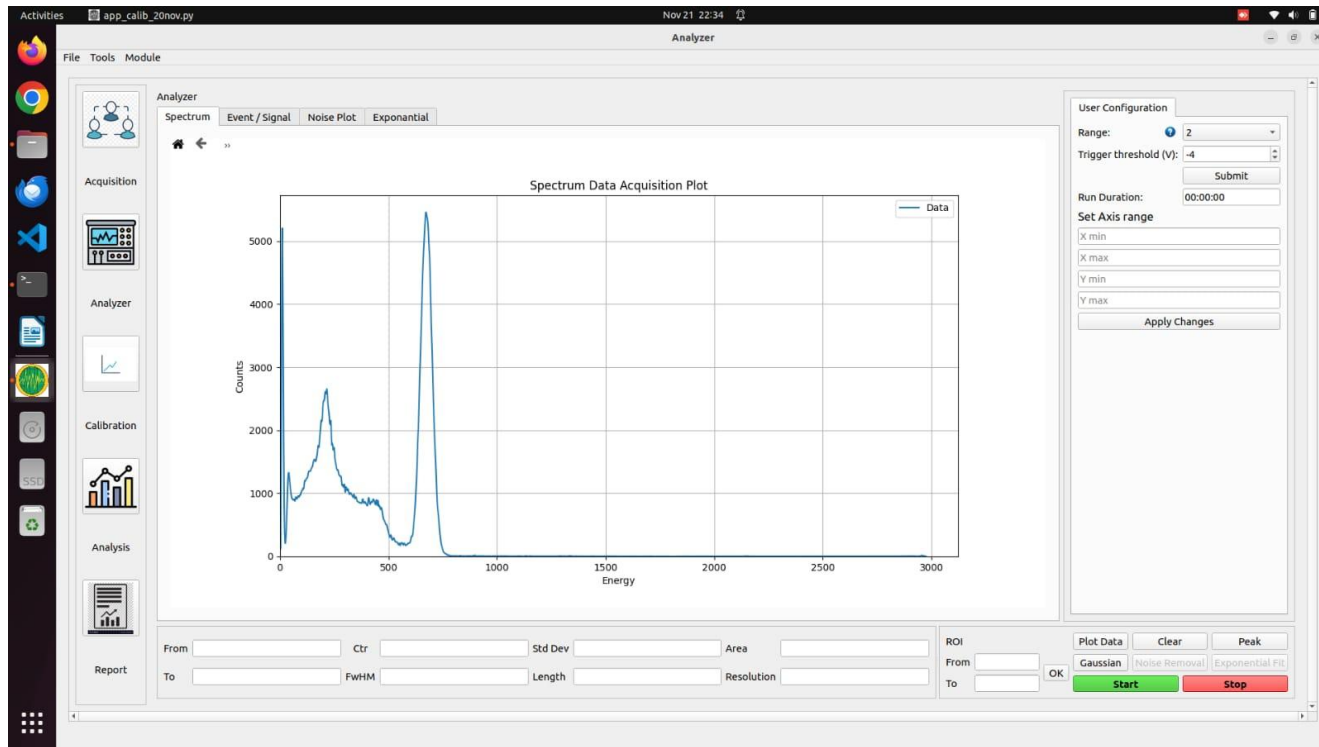
Ra-Mon is a **portable gamma radiation detector** designed to provide accurate and reliable radiation monitoring and data generation.

Equipped with a **CsI:TI crystal scintillator**, Ra-Mon delivers precise measurements in a versatile, compact and durable package.

Our user-friendly software offers customizable settings to adapt to various radiation monitoring needs, from healthcare facilities to environmental surveys.

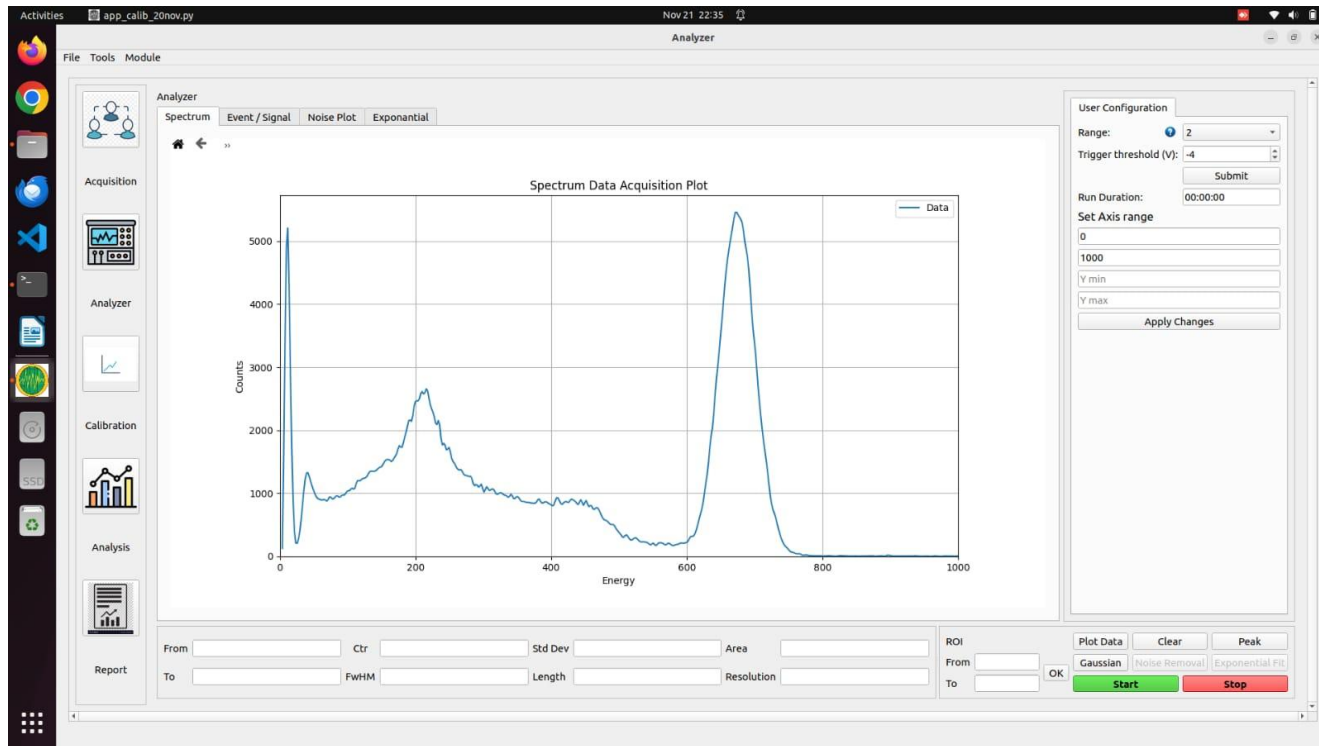
It offers multiple monitoring and control points for failsafe results





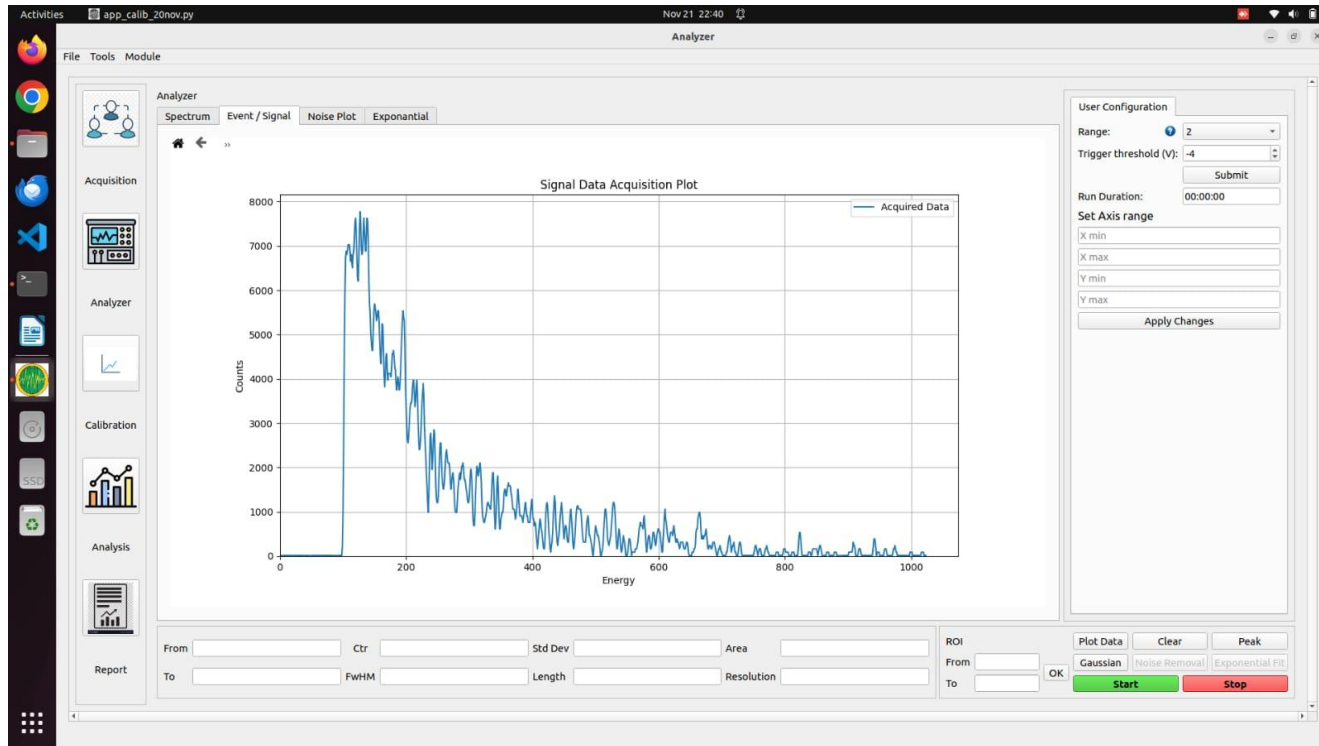
(Calibrated Spectrum plot of Cesium)





(Calibrated zoom spectrum plot of Cesium)





(Signal Plot)



Specifications

| Specifications | Value |
|-----------------------|-------------------------------------|
| Scintillation Crystal | CsI:TI (Bridgman Growth) 50 x 50 mm |
| PMT | Compatible Model |
| Energy resolution | 7% @662 keV |
| Dark current | <3 nA |
| Rise time | 7.2 |
| Voltage for max A/lm | 1150 V |





Specifications *(Contd.)*

| Specifications | Value |
|-------------------------|---|
| Temperature coefficient | 0.5%/ deg C |
| Digitizer Bandwidth | 10 MHz |
| Resolution | Upto 12 bits |
| Sensitivity | 10 mV/div to 4V/div |
| Output | User defined Raw pulse, pulse height spectrum, counting mode, etc |
| Software platform | Linux based |





Key Applications

Ra-Mon Gamma Radiation detectors has a wide range of applications such as the following:

- Healthcare
- Homeland Security
- Medical Imaging
- Environmental Monitoring
- Research



Ra-Mon, *now and hereafter*

- From the first trial onwards, we were successful in good quality crystal growth.
- We have initiated sustained production of good quality crystals.
- We are interacting with the CTL department to validate our quality .
- We will be able to supply the complete product, along with various tests and certifications, by January 2025.
- We are planning for a production of 20 to 30 crystals per month by March 2025
- We can meet diverse and customized requirements.
- We have developed a versatile software that offers numerous advantages to users.
- We can supply integrated systems comprising a Source, Radiation Monitor, and Operating Machines.





(Assembled detectors and polished crystals)





Detector configurations, based on user requirements

Ra-Mon offers various versatile models and the detectors can be modified as per user requirement. The following models configurations are available.

- Counter mode
- Spectroscopy mode
- Multi mode
- Process supervision along with control as per industrial requirements
- Handheld
- Fixed
- Cloud/ WIFI connectivity as per user requirement
- Multi PMT with multi channel convertor

Thank you!

For further queries or enquiry, kindly write to us at

acexIndustries@gmail.com

or ring us at

97733 25500, 97733 82000

