



EASING ACCESS **TO NEXT-GENERATION
OF OSD DRUG PRODUCT CONTROL**

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■ VERSATILE, ACCURATE AND SCALABLE

The CUB-X is an advanced, highly accurate cGMP PAT analyser designed for the real-time characterisation of solid oral dosage (OSD) forms, supporting applications from early pharmaceutical R&D through in-process control (IPC). Integrating state-of-the-art NIR-SRS spectroscopy technology, **the system delivers highly accurate and precise non-destructive quantification of Critical Quality Attributes (CQAs)**.



■ FROM R&D TO MANUFACTURING

The high-quality analytical data produced by the CUB-X support the development of robust chemometric models, enabling precise and non-destructive prediction of various CQAs such as **Mass, API fraction, Assay, Content Uniformity, Hardness, Thickness, Moisture content, Porosity, and Temperature**. The large quantity of data generated in R&D mode can support the formulation development, the Design of Experiment (DoE) study and the product filing to the authorities.

Engineered for exceptional operational flexibility, the analyser can process single objects in a true **First-In-First-Out mode** or operate with sampling rates up to 400 objects per hour, enabling seamless use across drug development and In-Process Control (IPC) testing. This allowing larger samples interpretation and higher sampling frequency. Being technology-agnostic the CUB-X analyser can be easily installed in any manufacturing line around the world.

IPC/MANUFACTURING

R&D



TECH TRANSFER



■ AUTOMATIC, EASIER, MORE PRECISE AND MORE ROBUST PAT

PAT technologies for tablet are perceived sophisticated by many, hence companies are reluctant to implement them. The CUB-X has been designed to reshape the use of PAT in OSD product development and manufacturing. Its software automatically guides users step by step through every phase of the workflow, from **DoE study design, equipment configuration, and sample traceability to data acquisition, processing, storage, and chemometric model application**, right through to day-to-day routine operation, with minimal specialised expertise required to keep it running.

■ FROM POWDER TO TABLETS



1.5 ml FDA approved powder bed cup



Single tablet feed with FIFO
(First In First Out)



Larger sample quantity



WHAT CUB-X MEASURES ?



API fraction



Mass



CU & Assay



Hardness*



Thickness



Diameter



Length



Porosity



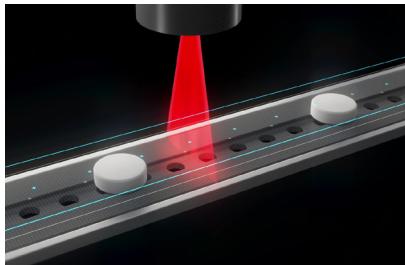
Moisture



Temperature

* Also available in non-destructive measurement

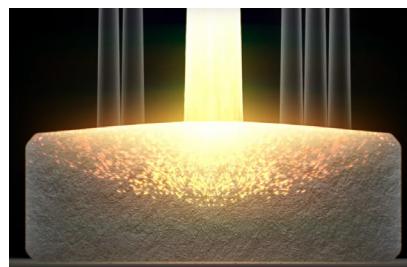
KEY FEATURES IN ONE LOOK



3D LASER SENSOR

Ensuring precision and process robustness

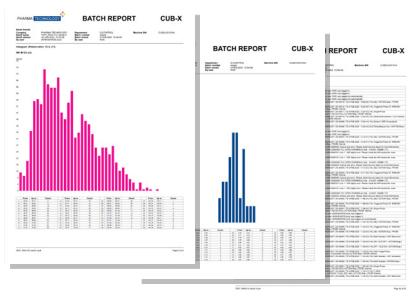
- Object positioning & orientation check
- Object geometry check
- Object thickness control
- Trigger NIR measurement



NIR-SRS PROBE

High accuracy

- Probe design patented
- 9 Collimation fibers for high measurement accuracy
- Multiple acquisitions per object
- Deep measurement penetration



INTUITIVE SOFTWARE & COMPREHENSIVE REPORT

Secured Data Exchange

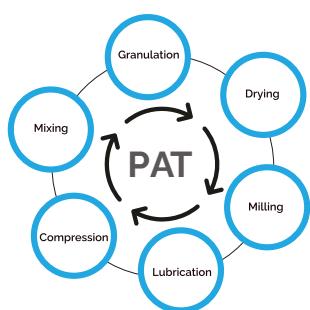
- Individual values / Statistics
- Audit trail
- cGMP compliant
- OPC UA communication



4P TESTER EMBEDDED

Weight-Hardness-Thickness-Length

- Proven standard technology
- Reference for physical parameter
- Automated centering device for shaped tablets
- Accuracy & precision



CONTROL LOOP

For in-line automated process control (APC)

- In Process Control
- Enables Automated Process Development
- Supports Continued Process Verification
- Large data provided for Real Time Decision & RTRT



"By embedding the most advanced PAT tools, the CUB-X has been designed to address both process development challenges and manufacturing constraints."

Thanks to its scalability, CUB-X is the ideal OSD drug product control solution for today's needs and tomorrow's demands."

Martial Dollinger, Pharma Technology 's CEO

■ KEY BENEFITS

Delivers **accurate and reliable PAT data** to enable rapid, data-driven real-time decisions (RTD).

Ensures strong **data integrity and regulatory compliance**

Supports the pathway toward **Real-Time Release (RTR)**

Scales seamlessly from R&D, Pilot phases and Tech-Transfer to full Commercial Manufacturing

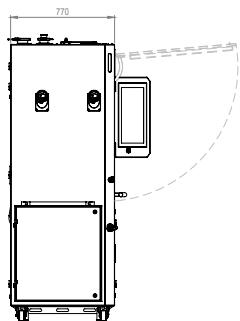
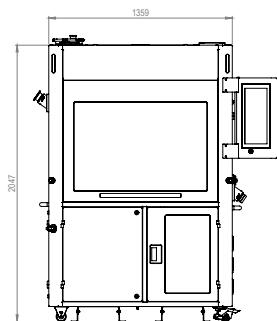
Provides fully automated IPC monitoring, 24/7, year-round. Cheaper operations through automation

Strengthens Quality Control through continuous and consistent measurements

Versatile platform & technology-agnostic meeting all Control strategy requirements

Minimizes material waste with non-destructive, in-process testing

■ PRODUCT OVERVIEW



| Technical data : | CUB-X |
|--------------------------------|------------------------------|
| Maximum sampling rate | 400 tablets/h |
| Minimum product width | 4 mm |
| Maximum product width | 24 mm |
| Minimum product height | 3 mm |
| Maximum product height | 10 mm |
| Thickness measurement accuracy | ± 0,05 mm |
| Mass measurement accuracy | ± 1 mg in stable environment |
| Hardness measurement accuracy | ± 2 N (4-400 N range) |
| Length measurement accuracy | ± 0,1 mm |
| Air extraction | Integrated Hepa filter H13 |
| Requested compressed air | Min 500 L/min - Min. 6 bar |
| Nosie level | ≤70 dB (A) |
| Power supply | 380 V 3ph + N + PE |
| Frequency | 50 Hz / 60 Hz |



ISO9001
Certified

8%
Invested in R&D

12
Patents granted

+2500
Customers

Since 1993, Pharma Technology has been a global leader in pharmaceutical and nutraceutical process equipment, specializing in tablet and capsule dedusting, polishing, metal detection, in-process control, external lubrication, and sorting solutions for the Oral Solid Dose (OSD) industry.

Thanks to long-standing partnerships with customers, we develop customized handling solutions designed to meet each company's specific production and compliance needs.

■ CONTACT US

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