

ONLINE SUCRO CRYSTAL IMAGING SYSTEM



Online sucro crystal imaging system performs the automated measurement of crystal size distribution parameters in the massecuite using classical image analysis techniques. The measurement of the crystal size distribution is a key requirement in optimizing the growth of sugar crystal in crystallization pans or for the quality control of the final product.

Images are captured at different phases of the process using an automated sample collecting device which includes the Smart camera. A powerful, adaptive and automatically controlled LED light source backlights the crystals on a glass surface in front of a high-resolution digital camera with optical magnification.



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Ministry of Electronics and Information Technology
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Advantages

- Direct mounting on the pan wall
- Simple design and rugged construction, suitable for the pan floor environment
- Crystals observed from 5-micron size and throughout the strike
- Processed Crystal Image showing on a TFT display
- Provides real time information essential to prevent the formation of agglomerates and false grains
- Local controlled automatic flushing valve for cleaning of viewing glass field



Product Specifications

Model/Series OSIS01

Usage environment

Temperature range 0 to 65°C
 Pressure range -1 to 1 bar
 Humidity range 40 – 70%

External features

Unit Size (L x W x H) 94x88x42 cm
 Net Weight (kgs) 80
 Degree of protection IP 66
 Case material SS
 Power supply voltage 230V
 Current consumption 5A
 Indicator lamps Yes

External interface

Ethernet TCP/UDP
 Parallel IO 2 AO

Functions

Operation mode Manual & Auto
 Machine learning Yes
 Operating on UI Touch panel
 Smart Camera
 Sensor type CMOS
 UI Operation Remote

Lens Module

Lens mount C-Mount
 Effective Pixel TBD
 Pixel Size 0.5 µm

Imaging Area

Frame Rate 30FPS or more
 Resolution 1920*1080
 Focal Length 90 mm
 Tool Suite IVDT

Standard Design

- Body and mounting flange in stainless steel
- Smart camera with microscope optics
- Automatic steam valve for flushing of pipelines and sight glasses
- Welding flange for OSIS mounting on pan wall.

Benefit

- Side mounts onto the crystallizer vessel to provide realtime images of the sugar crystals during the process.
- Labelled processed crystal images
- Crystal growth rate chart
- Calculates MA, CV and percent of fines using continuous image processing techniques.
- Average Crystal size
- Measures crystal sizes from 5 µm, monitor the seeding phase and detect false grain
- Masecuite drop time indicator at tightening stage



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