



CyLas



Keeping an eye on your cyclone



The hydrocyclone classifier forms an integral part of the milling circuit. The overall performance of the milling circuit depends directly on the performance of the hydrocyclone classifier. Plant operators have traditionally used the shape of the hydrocyclone underflow to assess the overall efficiency of the milling circuit – the CyLas provides this information on-line.

Principle of operation

CyLas is an on-line instrument for measuring the hydrocyclone underflow discharge angle. It uses a laser device to measure the distance from a fixed point (where it is mounted) to a point on the hydrocyclone underflow discharge. The distance is then related to the underflow discharge angle with the aid of trigonometric manipulations. Because of its non-contact nature and rugged construction, the CyLas is an inherently low-maintenance instrument.

Benefits

The CyLas enables you to:

- Avoid costly downtime due to cyclone chokes. Use the CyLas as a detector to give advance warning of unfavourable operating conditions and reduce the amount of operator attention required.
- Ensure efficient classification by operating the cyclone at optimum discharge flare angles.
- It is possible to implement a control loop for optimum classification or recirculating load by providing real-time information while monitoring the cyclone efficiency.



Area of Application

The CyLas helps to monitor the performance of a cyclone by providing a continuous measurement of the discharge angle of the underflow. This allows for optimal cyclone performance by altering feed conditions to operate the cyclone close to roping without choking. Control of the underflow angle allows for consistent and optimal recirculating load conditions (in terms of flow and density) and ultimately limits the chances of mill overload due to the recirculating flow.

Installation requirements

The CyLas device is mounted in such a way that the laser is not more than 30 m away from the target measuring surface. The CyLas requires a direct line of sight to the underflow flare. The most convenient position for it is on the outside of the underflow box. This would allow easy of access to it for calibration and adjusting the position.

Specification

- Supply voltage 24 V, 0.75 A
- Analogue output 4–20 mA
- Mounted via mounting brackets
- Laser protection class IP65
- Operating temperature -10 °C to 50 °C

Performance characteristics

- Range of measurement 0° to 30°
- Accuracy $\pm 1.2^\circ$ over 20° angle
- Availability 99 %

Maintenance

- Weekly cleaning



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CyLas support line: +27 11 709 4409, Email: millstar@mintek.co.za

