FLOW'S SCANNING OPTICS FOR DIAMOND RECOVERY MACHINES

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What is all this talk about Flow Electronics having yet again set a new bench mark in X-Ray based diamond recovery technology? Is it just sales talk or is there something more behind this?

Just read this short article and we will let you be the judge!

Diamonds do luminesce when exposed to X-Ray radiation. That is the very principle on which X-ray diamond recovery is based.

There are however many "other" minerals that also luminesce when exposed to X-rays and this obviously causes a problem. Some of these minerals show luminescence of a different colour (wavelength) than diamonds and therefore can be eliminated by means of optical filters.

Most of these "unwanted" luminescent particles do show luminescence intensity as compared to diamonds of the same size.

The combined luminescence intensity of two or more "low luminescent particles" often exceeds the luminescence intensity of a diamond and hence

substantially increase a sorter's yield.

This means that a substantial improvement in diamond recovery is achieved when looking at individual particles and measuring their specific luminescence intensity rather than looking at a group of particles at any one time.

So what's the catch? To make X-ray based diamond recovery economically viable, these machines are designed to handle high material throughputs.

Now lets look at this in some detail and put some numbers to it:

For instance our standard sorters are fitted with a 200mm wide feed transport system. These sorters typically treat 700kg per hour of diamondiferous material in the size range of +2mm – 4mm. This translates into approx. 70 (seventy) particles being simultaneously in the viewing zone of the sorters optical (luminescence) detection zone. Typically these sorters are fitted with 2 (two) independent optical luminescence detection units, leaving each one looking at 35 particles at any one time.

Our scanning optic system looks at each of these 70 particles individually. Yes, one by one! And to make sure no particle is ever missed the system scans the 200mm wide feed-stream over a 1000 (yes, one thousand) times per second!

Within the first year of their launch 85 units were sold. All our customers reporting a substantial reduction in yield and improved recovery, especially of low luminescent diamonds.

O.K. now you be the judge!

PROUDLY SOUTH AFRICAN

DESIGN AND MANUFACTURE

Flow-sort™

X-RAY DIAMOND RECOVERY EQUIPMENT

Sold by: Flow Electronics (Pty) LTD
4 Engwena Road, Sebenza, Johannesburg, RSA

please contact us at:

info@flow.co.za

+27 11 452 6006 / 6816

http://www.flow.co.za