

X-RAY LUMINESCENCE SORTER FOR DIAMOND RECOVERY



BOUREVESTNIK

Since 1959

RESEARCH ♦ DESIGN ♦ PRODUCTION

• LS-50-05



X-ray luminescence sorter LS-50-05 is designed for enrichment of the primary wet diamond bearing ore and for concentrate retreatment of the size fractions:

- 50 +20 mm,
- 20 +10 mm,
- 10 +5 mm.

The sorter can be installed within the treatment plants or within final recovery facility.

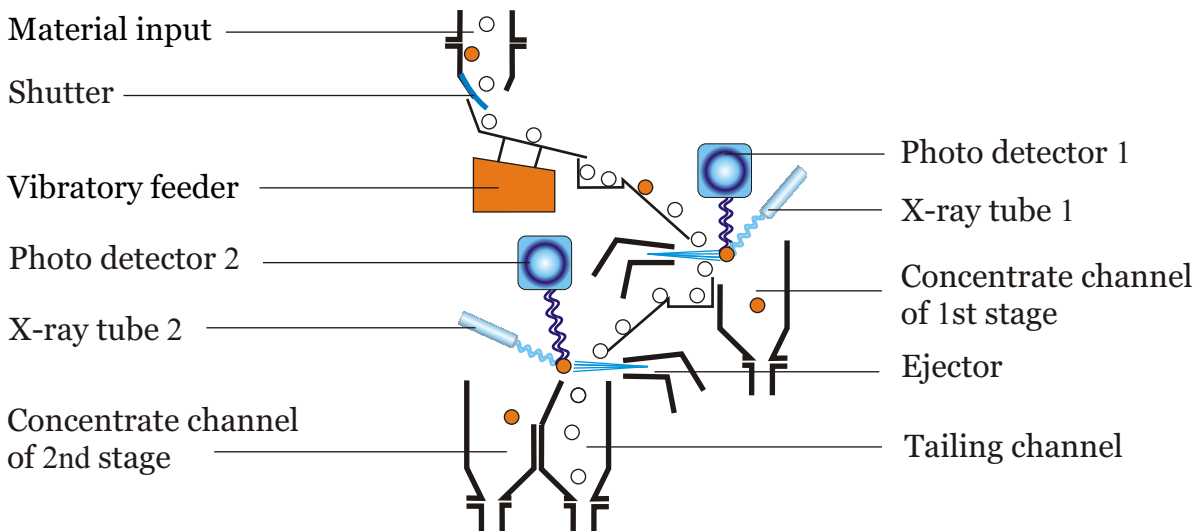
The sorters design prevents x-ray radiation emissions.

• Functional principle

The principle of sorters operation is based on the nature of diamonds to luminesce under X-ray radiation and the sorter uses this principle to distinguish diamonds from other associated luminescent minerals. Irradiation mode - single side. Mode of registration is available from either side of the flow of material.

Diamonds are ejected by special ejector utilizing compressed air.

• Technological scheme



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• Technical features

Sorter is single stage, mode of radiation - impulse.
Quantity of channels of registration - 8 (4 for each stage).

Material to be processed	wet
Size fractions of material	-50 +20 mm -20 +10 mm -10 +5 mm
Nominal throughput on size of material:	-50 +20 mm 30 t/h -20 +10 mm 20 t/h -10 +5 mm 9 t/h
Recovery	not less then 98%
Yield of material for one ejection (with the nominal throughput):	-50 +20 mmnot more then 0,2 kg -20 +10 mm0,15 kg -10 +5 mm0,05 kg
Technical water (transport) flow	not more then 1,8 m ³ /h
Cooling water (potable quality) flow	not more then 6 l/min
Average flow of compressed air (with the pressure 0,6 MPa)	not more then 15 l/min
Dimensions (L x W x H):	
Sorter	2550 x 870 x 2580 mm
Automatic control rack	765 x 555 x 1745 mm
Weight:	
Sorter.....	1600 kg
Automatic control rack	230 kg

• Sorter design

The sorter consists of the sorting machine and automated control panel.

The sorting machine and automated control panel are connected via cables of 35 meters in length.

The feeding hopper, tailings and concentrate discharge are equipped with flanges to connect to the relevant treatment plant material stream (installation of boxes for collection of tailings and concentrate is available as an alternative).

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