PL-Mini

Overview

PL-Mini is a desktop diamond verification instrument for loose and mounted diamonds, designed to separate natural diamonds, synthetic diamonds and diamond simulants. PL-Mini is manually operated and requires the user to interpret the test results.

PL-Mini uses photoluminescence spectroscopy technology where the instrument collects the luminescence spectrum of the stones after they have been excited by a laser. The operator makes a qualitative analysis of the instrument readings to determine the nature and type of each stone. Here are examples of the conclusions based on the analysis:

i) Natural type Ib yellow diamond
ii) Natural type Ia diamond
iii) Natural type IIa diamond
iv) HPHT synthetic diamond
v) CVD synthetic diamond

Stone Testing Capabilities

Weight range:	**All**
Size of Stones:	**All**
Colour range:	**D-J**
Stone shape:	**All**
Diamond simulants:	**Yes**
Mounted stones:	**Yes** not yet ASSURE tested

Instrument Capabilities

Automated feed:	**No**
Automated results:	**No**
Automated dispense:	**No**
Detect or Refer (synthetic diamonds):	**Detect**
Detect or Refer (diamond simulants):	**Refer**
Multiple stones at once:	**No**
Training required:	**Yes**

Instrument Performance

The results demonstrate the performance of the PL-Mini tested by a novice operator:

	Core Sample	Smalls Sample
Diamond False Positive Rate *Optimal rate 0%*	0.8%	0.5%
Diamond Referral Rate *Optimal rate 0%*	19.8%	20.6%
Diamond Accuracy Rate *Optimal rate 100%*	78.4%	72.0%
Speed *Stones tested per hour*	661	661

Instrument Specifications

18 cm (W) x 15 cm (D) x 9 cm (H)

1.3 kg

Price: 7,500 USD January 2021

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ASSURE Tested November 2019
ASSURE ID 48676