



## De Beers Group Ignite SYNTHdetect



### Overview

SYNTHdetect is a desktop diamond verification instrument for loose and mounted stones. It is designed to separate diamonds from synthetic diamonds and diamond simulants. SYNTHdetect is manually operated and requires an operator to interpret the test results.

SYNTHdetect captures images and uses visual analysis to automatically display one of the following results that can be interpreted by the operator:

- i) Natural
- ii) Refer

The 'Refer' result may include natural diamonds, synthetic diamonds and diamond simulants. These should be further tested for full verification.

This instrument requires user interpretation although it uses software to guide the interpretation. SYNTHdetect needs to be calibrated periodically to ensure continued high performance. The software will indicate when calibration is required, and a calibration sample is supplied with the instrument.

### Stone Testing Capabilities

Weight range: **0.001 ct to 100 ct**  
 Colour range: **D to J\***  
 Stone shape: **Round**  
 Diamond simulants: **Yes**  
 Mounted stones: **No**

\* failsafe across all colours although natural fancy colours will give a higher referral rate.

### Instrument Capabilities

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

### ASSURE 2.0 Performance

Key ASSURE 2.0 test results for the SYNTHdetect:

	Primary Sample	Smalls Sample	Jewellery Sample
<b>Diamond False Positive Rate</b> <i>(Optimal rate 0%)</i>	<b>0.0%</b> +/- 0.0%	<b>0.0%</b> +/- 0.0%	<b>0.0%</b>
<b>Diamond Referral Rate</b> <i>(Optimal rate 0%)</i>	<b>1.8%</b> +/- 0.0%	<b>2.1%</b> +/- 0.3%	<b>0.4%</b>
<b>Diamond Accuracy Rate</b> <i>(Optimal rate 100%)</i>	<b>98.2%</b> +/- 0.0%	<b>97.9%</b> +/- 0.3%	<b>99.6%</b>
<b>Test Speed</b> <i>Stones per hour</i>	<b>170</b> +/- 15		

#### Notes:

Primary Jewellery results shown; refer to lab report for Smalls Jewellery results. Uncertainty ranges (+/-) are based on repeatability testing (three trials) and represent spread of results in absolute terms. Test Speed includes time taken to place the samples in the instrument and to interpret the results.

### Instrument Specifications

 **31 cm (W) x 34 cm (D) x 45.8 cm (H)**

 **44 kg**

Price: **18,500 USD (Nov 2022)**

### Contact

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