

**PROJECT ASSURE
DIAMOND VERIFICATION INSTRUMENT STANDARD REPORT**

Summary Report for: IIDGR / DiamondSure



Prepared For: Lisa Levinson
Diamond Producers Association Belgium ESV
Hoveniersstraat 22
Antwerp, 2018
Belgium

Received Date: September 12, 2018
Invid Number: 671335
Assessment Dates: February 19, 2019 through February 21, 2019
Testing ID Number: 1903373S-C*
Assessment Testing ID: 1903373
Report Issue Date: March 1, 2019

*This report supersedes the test report dated February 28, 2019. The report has been amended to include definitions for each category per the DPA's request.

Approval By:


Judith V. Haber
Global Technical Lead Chemistry

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	IIDGR, DiamondSure		
	Date:	March 1, 2019	Testing ID:

Manufacturer's Name: IIDGR
Instrument Model: 3700
Serial Number: 468
Software Version: Not Applicable
Lab Manager: Winson Wong
Analyst/Operator: Julie Mason

Overview

The stated instrument was evaluated to Diamond Verification Instrument Standard Part 1 – Diamond Verification Instrument for Screening Diamonds from Synthetic Diamonds (30 January 2019) as referenced by the Diamond Verification Instrument Standard – General Requirements for Evaluation Diamond Verification Instruments (30 January 2019)

Manufacturer's Claims for Instrument Capability

Sample Composition	
Type of Stones	Diamonds, Synthetic diamonds and Diamond simulants
Stone Size Range	1.3 to 14.4 mm (0.010 to 10 ct.)
Stone Color Range	D to J
Loose / Mounted	Loose and Mounted
Single / Batch Stone Testing	Single Stone Testing
Automated / Manual Feed	Manual Feed

Summary of Assessment

The instrument has been verified to be able to screen loose and mounted round, brilliant cut diamonds, synthetic diamonds and simulant in the size range of 1.3 to 3.7 mm (0.010 to 0.2 ct.) and D to J color range.

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Results of Performance Testing to the Diamond Verification Instrument Standard

Test Stone Sets used to Assess Performance

Loose, Polished Stone Test Sets	Diamond	Synthetic Diamond	Diamond Simulant
Primary Set (>2.00 mm, D-J colour) 748 diamonds, 150 synthetic diamonds and 148 diamond simulants	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Supp. Set A (>2.00 mm, D-J colour) 249 diamonds	<input checked="" type="checkbox"/>		
Supp. Set AB (>2.00 mm, D-J colour) 50 synthetic diamonds, 47 diamond simulants		<input checked="" type="checkbox"/>	<input type="checkbox"/>

Results of instrument stone assessment testing of Primary and A&AB Combined

Test Property	Results for Loose, Polished Stone Test Sets
	Primary and A&AB Combined
Diamond accuracy (%)	95.3
Synthetic diamond accuracy (%)	na ^[1]
Diamond referral rate (%)	4.7
Synthetic diamond referral rate (%)	100.0 ^[2]
Diamond false positive rate (%)	0.0
Synthetic diamond false positive rate (%)	0.0
Diamond false negative rate (%)	0.0
Synthetic diamond false negative rate (%)	0.0

Notes:

na Not applicable per instrument manufacturer

[1] Does not apply because this instrument does not classify stones as 'Synthetic diamond'

[2] This instrument is designed to classify synthetic diamonds as 'Refer (lab)', "Refer (II)" and "Refer" (Further Testing)"

Results of instrument testing speed assessment

Rate of Testing Speed Test Method	Average Test Result
<input type="checkbox"/> Test Method A: Fixed number of stones	193 stones per hour ^[1]
<input checked="" type="checkbox"/> Test Method B: Fixed time frame	
<input type="checkbox"/> Test Method C: Reduced number of stones	

[1] Test results referenced from test report 1817168 dated February 6, 2019

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	Date:	March 1, 2019	Testing ID:

Results of instrument stone assessment testing of individual stone sets

Test Property	Results for Loose, Polished Stone Test Sets					
	Primary	A & AB	B & AB	C	D & DE	E & DE
Diamond accuracy (%)	95.1	96.0	na	na	na	na
Synthetic diamond accuracy (%)	na ^[1]	na ^[1]	na	na	na	na
Diamond referral rate (%)	4.9	4.0	na	na	na	na
Synthetic diamond referral rate (%)	100.0 ^[2]	100.0 ^[2]	na	na	na	na
Diamond false positive rate (%)	0.0	0.0	na	na	na	na
Synthetic diamond false positive rate (%)	0.0	0.0	na	na	na	na
Diamond false negative rate (%)	0.0	0.0	na	na	na	na
Synthetic diamond false negative rate (%)	0.0	0.0	na	na	na	na

Notes:

na Not applicable per instrument manufacturer

[1] Does not apply because this instrument does not classify stones as ‘Synthetic diamond’

[2] This instrument is designed to classify synthetic diamonds as ‘Refer (lab)’, ‘Refer (II)’ and ‘Refer’ (Further Testing)”

Additional Notes from Assessment Findings

Below is a summary of an additional findings from assessment:

- No additional comments

Definitions

Diamond Accuracy	Defined as the fraction of test stones correctly classified by the specific diamond verification instrument as diamond.
Synthetic Diamond Accuracy	Defined as the fraction of test stones correctly classified by the specific diamond verification instrument as synthetic diamond.
Diamond Referral Rate	Defined as the fraction of diamonds that could not be classified by the specific diamond verification instrument and requires further.
Synthetic Diamond Referral Rate	Defined as the fraction of synthetic diamonds that could not be classified by the specific diamond verification instrument and requires further testing.
Diamond False Positive Rate	Defined as the fraction of synthetic diamonds incorrectly classified as diamond by the specific diamond verification instrument.

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Synthetic Diamond False Positive Rate	Defined as the fraction of diamonds incorrectly classified as synthetic diamonds by the specific diamond verification instrument.
Diamond False Negative Rate	Defined as the fraction of diamonds incorrectly classified as synthetic diamond by the specific diamond verification instrument.
Synthetic Diamond False Negative Rate	Defined as the fraction of synthetic diamonds incorrectly classified as diamond by the specific diamond verification instrument.
Rate of Testing Speed	Defined as the average speed at which the diamond verification instrument evaluates unknown stones.

***** End of Report *****

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