



**DIAMOND  
PRODUCERS  
ASSOCIATION**



**PROJECT ASSURE  
DIAMOND VERIFICATION INSTRUMENT STANDARD REPORT**

**Summary Report for: SmartPro / Screen 1**



**Prepared For:** Lisa Levinson  
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Belgium

Received Date: November 8, 2018  
Invid Number: 677216  
Assessment Dates: February 12, 2019 through February 14, 2019  
Testing ID Number: 1903246S-B\*  
Assessment Testing ID: 1903246-B  
Report Date: May 31, 2019

\*This report supersedes the report dated March 15, 2019. The report was amended to reclassify synthetic stones as refer as requested by the DPA.

Approval By:

*Judith V. Haber*

Judith V. Haber  
Global Technical Lead Chemistry

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	SmartPro, Screen 1		
	<b>Date:</b>	May 31, 2019	<b>Testing ID:</b>

**Manufacturer's Name:** SmartPro  
**Instrument Model:** Screen 1  
**Serial Number:** SPSI-B2064  
**Software Version:** Not Applicable  
**Lab Manager:** Winson Wong  
**Analyst/Operator:** Joseph Tiburcio

**Overview**

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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**

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Sample Composition	
Type of Stones	Diamonds and Synthetic diamonds
Stone Size Range	1.3 to 15.3 mm (0.01 to 12 ct.)
Stone Color Range	Stone Color D to J
Loose / Mounted	Loose and Mounted
Single / Batch Stone Testing	Single
Automated / Manual Feed	Manual Feed

**Summary of Assessment**

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The instrument has been verified to be able to screen loose and mounted, round, brilliant cut diamonds and synthetic diamonds in the range of 1.3 to 3.7 mm (0.01 ct. – 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 (%)	89.5
Synthetic diamond accuracy (%)	na <sup>[1]</sup>
Diamond referral rate (%)	10.5
Synthetic diamond referral rate (%)	100.0 <sup>[2]</sup>
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’


[2] This instrument classifies synthetic stones as ‘Refer’

**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	283 stones per hour <sup>[1]</sup>
<input checked="" type="checkbox"/> Test Method B: Fixed time frame	
<input type="checkbox"/> Test Method C: Reduced number of stones	

[1] Referenced from Test Report 1820798 dated February 15, 2019

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	SmartPro, Screen 1		
	Date:	May 31, 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 (%)	89.2	90.4	na	na	na	na
Synthetic diamond accuracy (%)	na <sup>[1]</sup>	na <sup>[1]</sup>	na	na	na	na
Diamond referral rate (%)	10.8	9.6	na	na	na	na
Synthetic diamond referral rate (%)	100.0 <sup>[2]</sup>	100.0 <sup>[2]</sup>	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’

[2] This instrument classifies synthetic stones as ‘Refer’

**Additional Notes from Assessment Findings**

Below is a summary of an additional findings from assessment:

- No additional comments

**Definitions**

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

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	SmartPro, Screen 1		
	<b>Date:</b>	May 31, 2019	<b>Testing ID:</b>

<b>Diamond False Negative Rate</b>	Defined as the fraction of diamonds incorrectly classified as synthetic diamond and/or diamond simulant by the specific diamond verification instrument.
<b>Synthetic Diamond False Negative Rate</b>	Defined as the fraction of synthetic diamonds incorrectly classified as diamond and/or diamond simulant by the specific diamond verification instrument.
<b>Rate of Testing Speed</b>	Defined as the average speed at which the diamond verification instrument evaluates unknown stones.

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

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