2016.11.18 - Helium Polish version 5.6.89.1, report.dll version 2.10.11.1, BrilRecon.dll version 1.1.19.1, report templates dd 18.11.2016

Release contains:

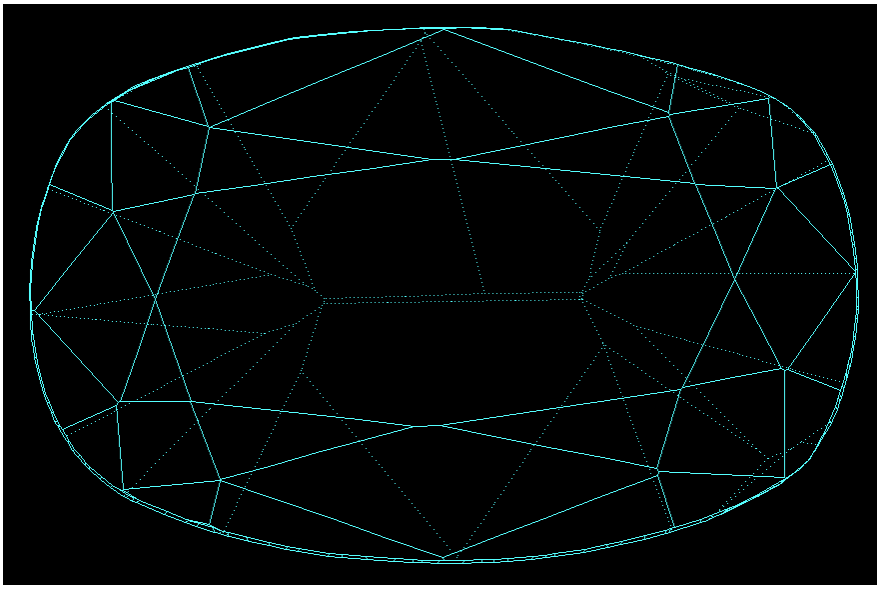
File	Version
HeliumPolish.exe	5.6.89.1 (not changed)
report.dll	2.10.11.1
BrilRecon.dll	1.1.19.1
ikov.dll	1.1.3.9 (not changed)
Report templates	2016-11-18

In this version we made the following changes:

- Model building
- Reports
  - New pictures in reports for RBC
  - Octagon Brilliant cut and report
  - Triangle cut updates
  - "Area of projection" parameter
  - Min and max of Pavilion painting and Crown painting

Model building

Algorithm for distinguishing Round Brilliant from Cushion, Oval from Cushion and Oval from Marquise is improved.



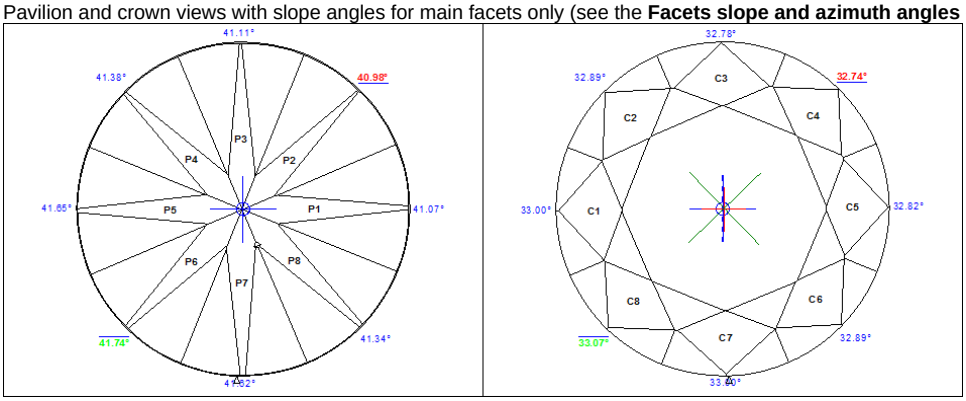
A sample Cushion stone which was previously incorrectly determined as Oval: Cushion_quasi_Oval.Mmd.

Reports

New pictures in reports for RBC

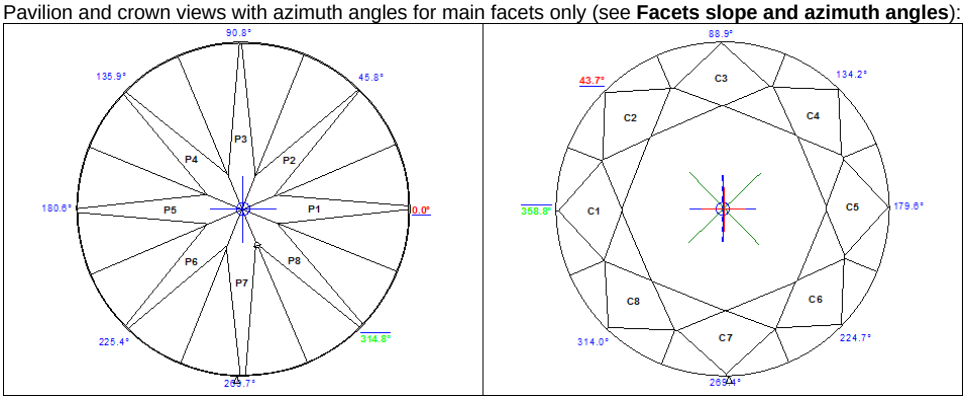
Full report for brilliant and the corresponding Export report data are enhanced with the following new pictures:

1. Pavilion and crown views with slope angles for main facets only (see the **Facets slope and azimuth angles** chapter of the report):



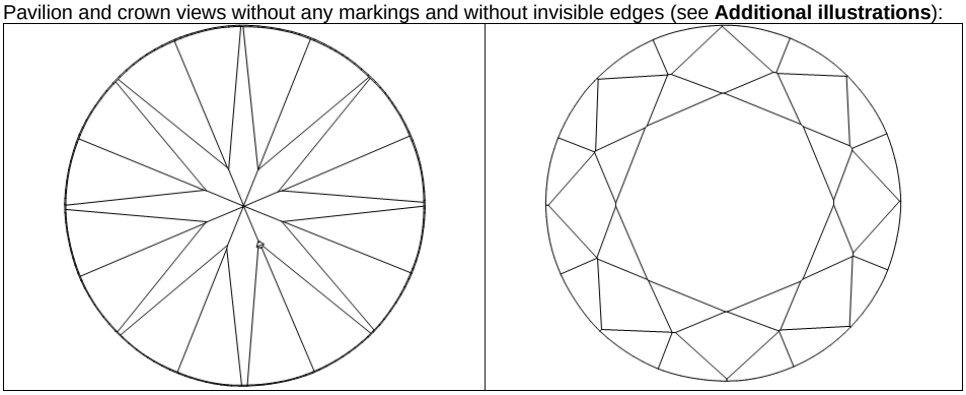
The bookmarks for the pictures are `PAVILION_MAIN_FACET_SLOPE_ANGLES` and `CROWN_MAIN_FACET_SLOPE_ANGLES`, correspondingly.

2. Pavilion and crown views with azimuth angles for main facets only (see **Facets slope and azimuth angles**):



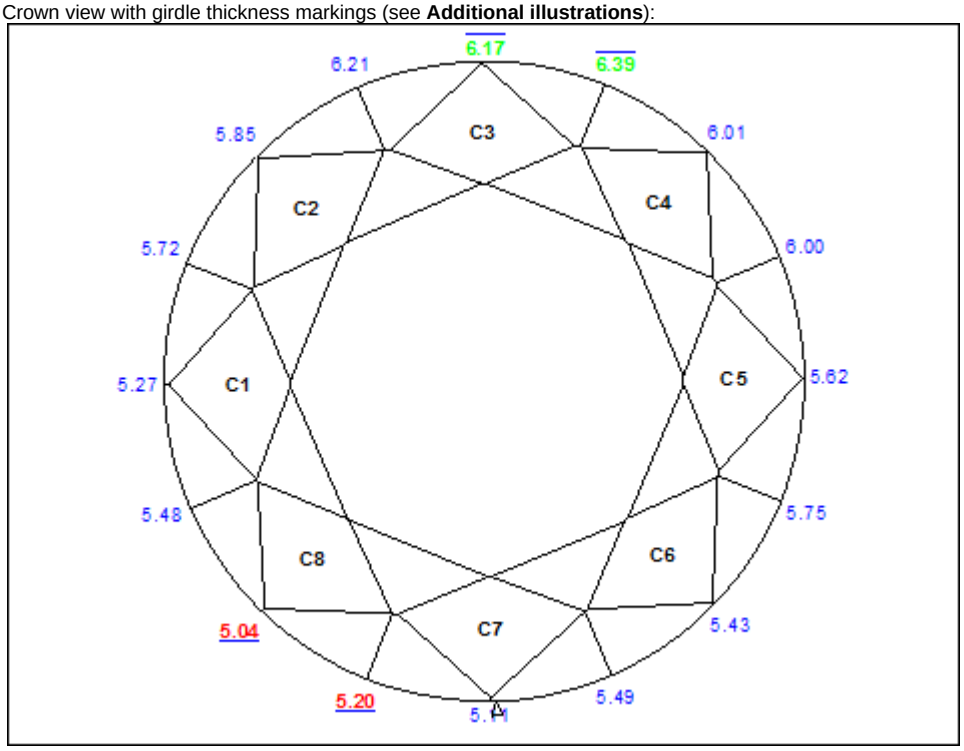
The bookmarks for the pictures are `PAVILION_MAIN_FACET_AZIMUTH_ANGLES` and `CROWN_MAIN_FACET_AZIMUTH_ANGLES`, correspondingly.

3. Pavilion and crown views without any markings and without invisible edges (see **Additional illustrations**):



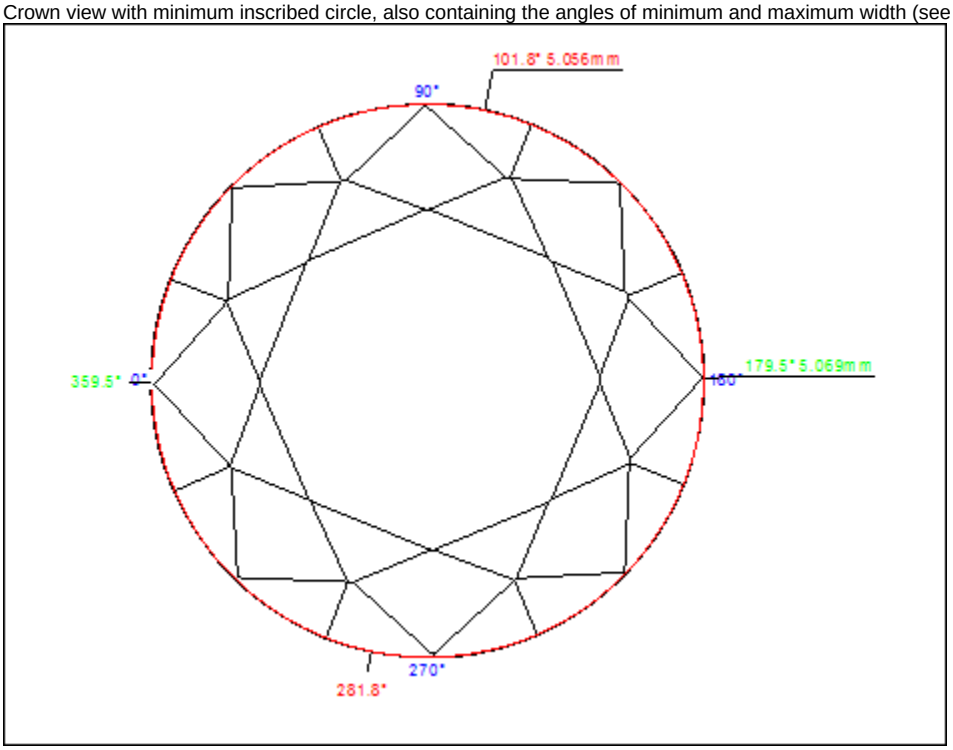
The bookmarks for the pictures are `PAVILION_VIEW` and `CROWN_VIEW`, correspondingly.

4. Crown view with girdle thickness markings (see **Additional illustrations**):



The bookmark for the picture is `GIRDLE_THICKNESS_PC_CRN_VIEW`.

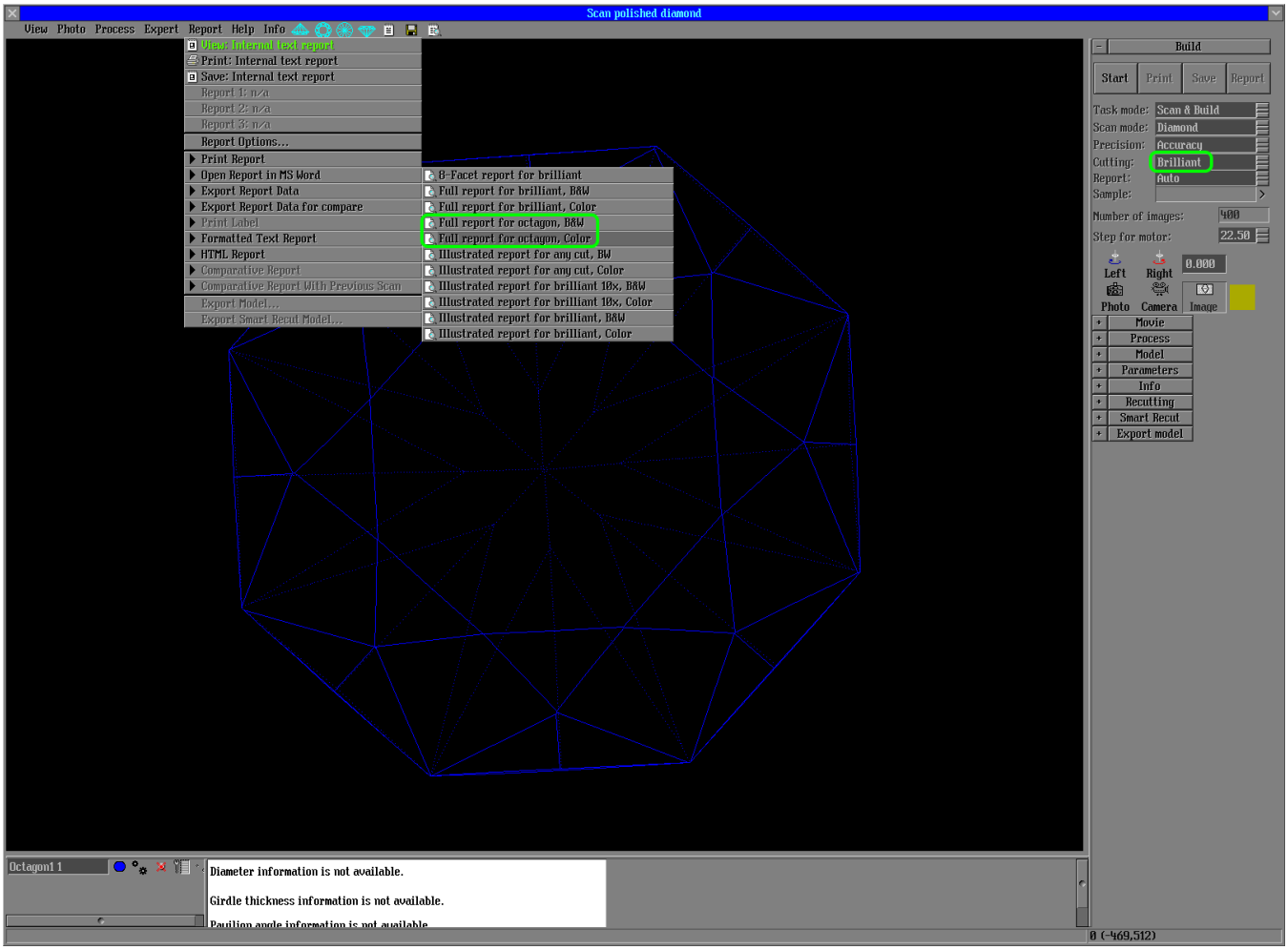
5. Crown view with minimum inscribed circle, also containing the angles of minimum and maximum width (see **Additional illustrations**):



The bookmark for the picture is `CROWN_AND_INSCRIBED_CIRCLE`.

Octagon Brilliant cut and report

Octagon Brilliant cut is added as a sub-option to Round Brilliant cut. It is distinct for reporting purposes only; to scan and build models of this cut, Brilliant option should be used.



Octagon Brilliant has the following unique features:

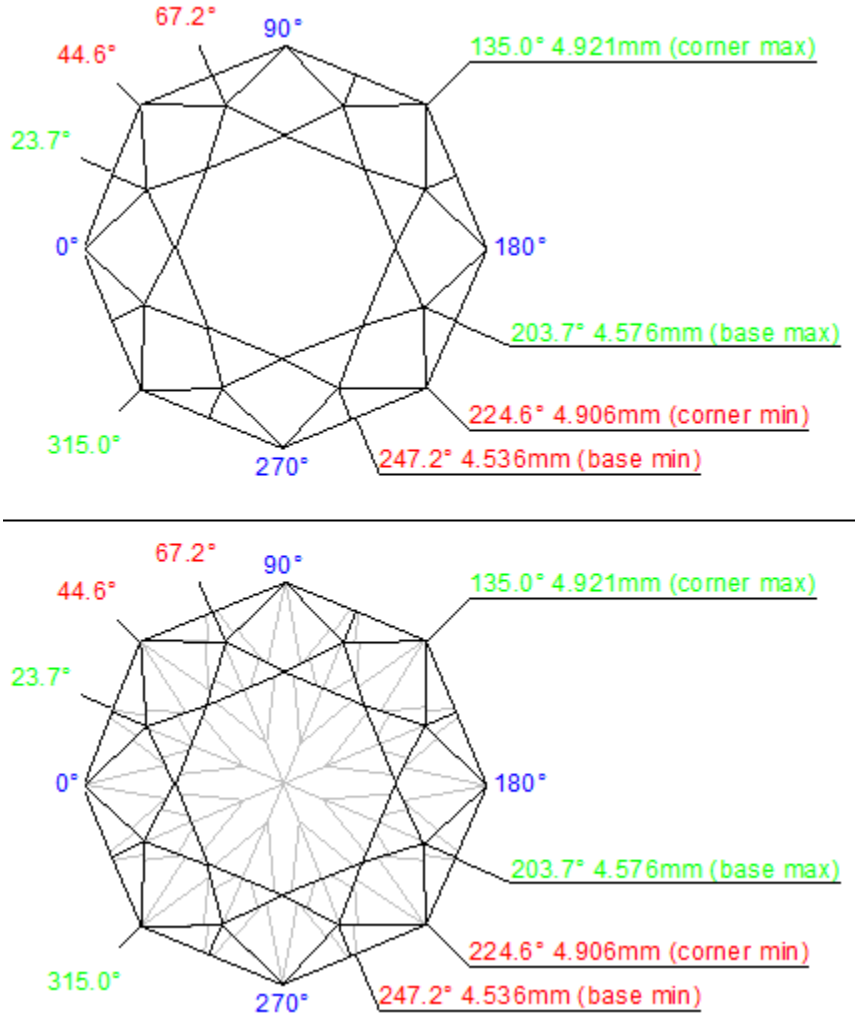
1. Instead of diameter and radius defined for Round brilliant, two specific parameters are calculated and reported: Base Diameter and Corner Diameter.
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Reported in	Section	Values	Units	Bookmarks
Full Report for Brilliant	Main Parameters	Avg, Min, Max, Dev for both	mm	DIAMETER_BASE_MM_AVG, DIAMETER_BASE_MM_MIN, DIAMETER_BASE_MM_MAX, DIAMETER_BASE_MM_DEV, DIAMETER_CORNER_MM_AVG, DIAMETER_CORNER_MM_MIN, DIAMETER_CORNER_MM_MAX, DIAMETER_CORNER_MM_DEV
	Detailed Parameters	All 4 values for both	mm	DIAMETER_BASE_MM_1, ..., DIAMETER_BASE_MM_4, DIAMETER_CORNER_MM_1, ..., DIAMETER_CORNER_MM_4

Parameter		Avg	Min	Max	Dev	Cut	Sym
Diameter Base	mm	4.555	4.536	4.576	0.041		
Diameter Corner	mm	4.916	4.906	4.921	0.015		
Crown angle	°	34.55	34.27	34.78	0.52	EX	EX

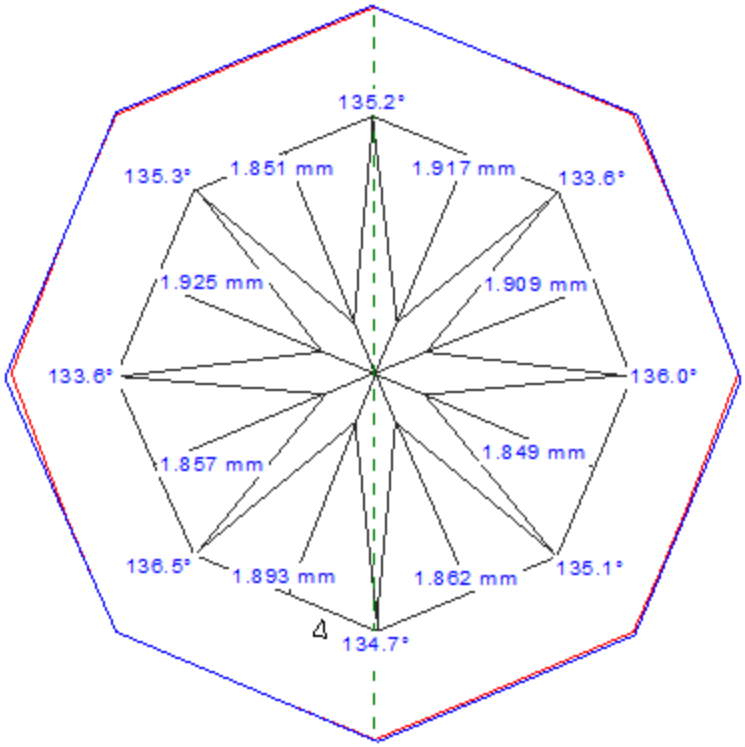
2. Width is interpreted as the minimum value of Base Diameter. Length is interpreted as the maximum value of Corner Diameter.
3. Average Corner Diameter serves as a measure for all relative values in the report (that is, all lengths expressed in % are measured relative to it).

4. The crown views with indicated positions of minimum and maximum width contain separate marks for minimum and maximum of Base Diameter and for those of Corner Diameter:



5. Girdle internal angles at all eight corners are added to the list of parameters, and also to the girdle asymmetry plots.

Reported in	Section	Values	Units	Bookmarks
Full Report for Brilliant	Main Parameters	Avg, Min, Max, Dev	°	`GIRDLE_INTERNAL_ANGLE_DEG_AVG, GIRDLE_INTERNAL_ANGLE_DEG_MIN, GIRDLE_INTERNAL_ANGLE_DEG_MAX, GIRDLE_INTERNAL_ANGLE_DEG_DEV`
	Detailed Parameters	All 8 values	°	`GIRDLE_INTERNAL_ANGLE_DEG_1, ..., GIRDLE_INTERNAL_ANGLE_DEG_8`



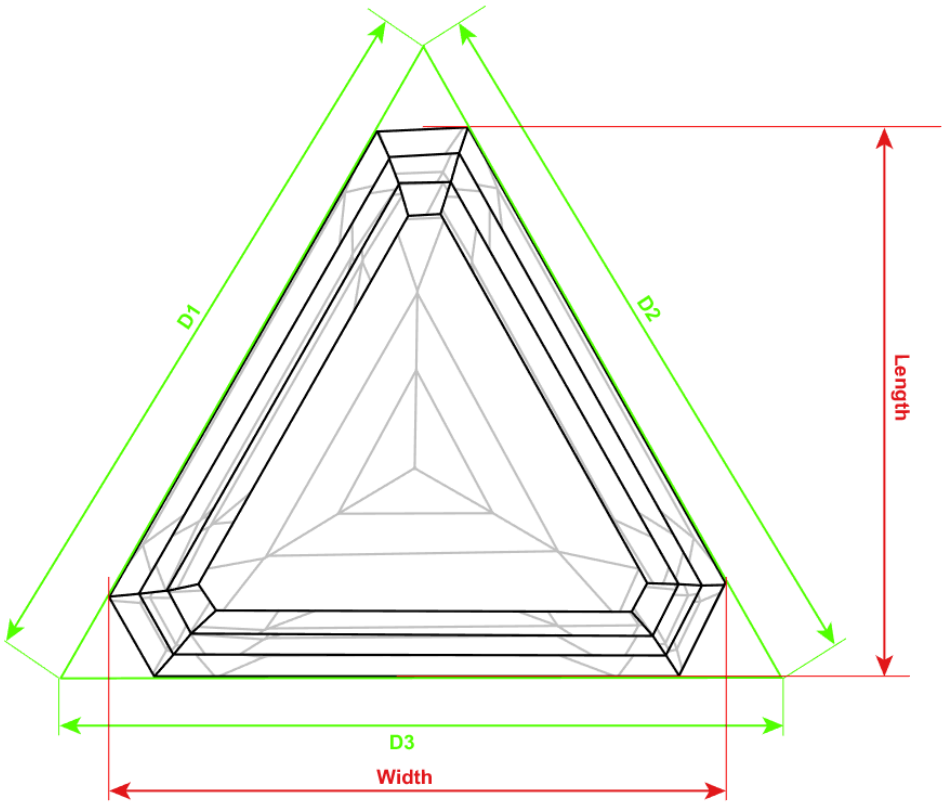
Parameter		Avg	Min	Max	Dev	Cut	Sym
Girdle Thickness (Crown Mains)	%	2.13	[illegible]	2.44	[illegible]		
Crown Palmate (Crown Mains)		[illegible]	-2.16	0.120			
Projection Area	mm²	17.112					
Girdle Internal Angle	°	135.0	133.6	136.5	2.9		

Parameter		1	2	3	4	5	6	7	8
Girdle Thickness Bezel local Deviation	%	0.46	[illegible]	0.14	0.79	[illegible]	0.31	0.20	[illegible]
[illegible] local Deviation	%	[illegible]	0.75	[illegible]	[illegible]		[illegible]	[illegible]	
Opposite Azimuth Crown Pavilion	°	0.19	0.58	0.76	0.81	0.83	1.40	1.46	1.64
Girdle Internal Angle	°	133.6	135.2	135.3	133.6	136.5	134.7	135.1	136.0

Triangle cut updates

Definitions of some Triangle cut parameters (Width, Length, Table Width, and Table Length) are updated in the following manner.

1. Width as measured along the base side of the triangle, Length is measured perpendicular to that direction. (Previously these were defined vice versa.)



2. Table width is defined as the maximum distance between table vertices in the direction of Width +/- 10°.
3. The table vertex farthest away from the Width line is found.
4. Table length is defined as the maximum distance from that vertex to another table vertex in the direction of Length +/- 10°.

"Area of projection" parameter

Area of projection of the stone to the table plane is added to the Full report for all cuts:

Reported in	Section	Values	Units	Bookmarks
Full Report (all cuts)	Main Parameters	Avg (the only value)	mm²	PROJECTION_AREA

Projection Area	mm²	20.117					

Min and max of Pavilion painting and Crown painting

Minimum and maximum Pavilion painting and Crown painting are added to the Full report for brilliant:

Reported in	Section	Values	Units	Bookmarks
Full Report for Brilliant	Main Parameters	Min, Max	°	PAV_PAINTING_GIA_DEG_MIN, PAV_PAINTING_GIA_DEG_MAX, CRN_PAINTING_GIA_DEG_MIN, CRN_PAINTING_GIA_DEG_MAX

Paint / Dig		Avg	Type	Cut	Max Dev	Dev	Sym
Crown painting	°	2.36	Painting	EX	4.92	4.94	EX
Crown painting	notches	0.6, Small			1.3	1.3	
Pavilion painting	°	0.06		EX	-2.49	4.70	EX
Pavilion painting	notches	0.0, Negligible			0.7	1.3	

Parameter		Avg	Min	Max	Dev	Cut	Sym
Crown Painting	°	2.36	-0.02	4.92	4.94	EX	EX
Pavilion Painting	°	0.06	-2.49	2.21	4.70	EX	EX

Absolute maximum painting in the table above is renamed **Max Dev**, so as to avoid confusion. This is the signed measurement which has the maximum absolute value (i.e. either the overall maximum or minimum, depending on which is greater by the absolute value).