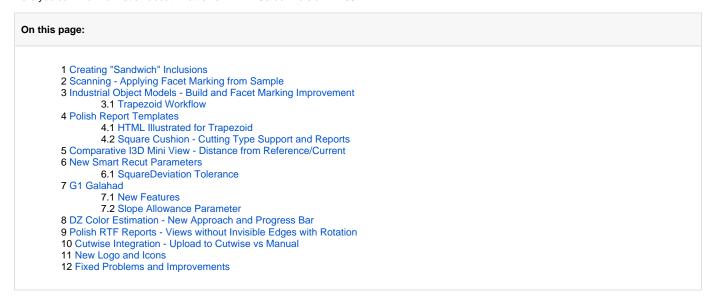
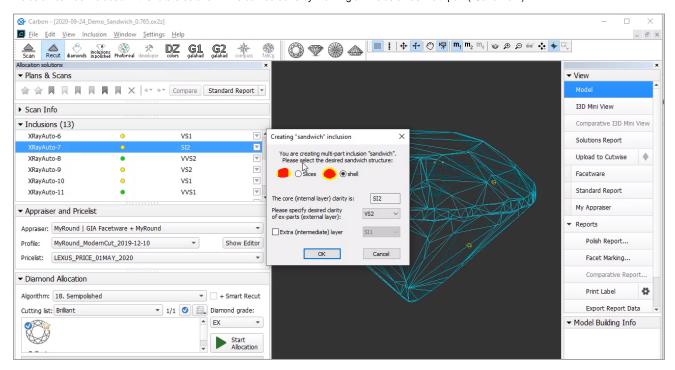
2020-12-29 - HP Carbon 1.1.33

Here you can find information about what is new in HP Carbon version 1.1.33.



Creating "Sandwich" Inclusions

For the stones with inclusions, the system now supports the ability to increase in some cases the mass of the solution by specifying that **some part** of inclusion can be included in the future solution. This can be done by marking an inclusion as multi-part ("Sandwich").



For a future "sandwich" inclusion you can specify:

- Desired structure: Slices (Recommended) or Shell.
- Desired clarity of the external layer compared to the internal layer clarity.
- Optionally Extra (intermediate) layer presence and clarity.

To make an inclusion "sandwich":

- 1. In the Recut mode, access the Inclusions panel.
- 2. From the menu for your inclusion, select Make Sandwich. The Creating "Sandwich" Inclusion dialog is displayed.
- 3. Specify the "sandwich" options and then click OK. In the Inclusions panel, your inclusion will be slit into the corresponding parts.

4. Run optimization with your new inclusions.

You can find some details in the video below:

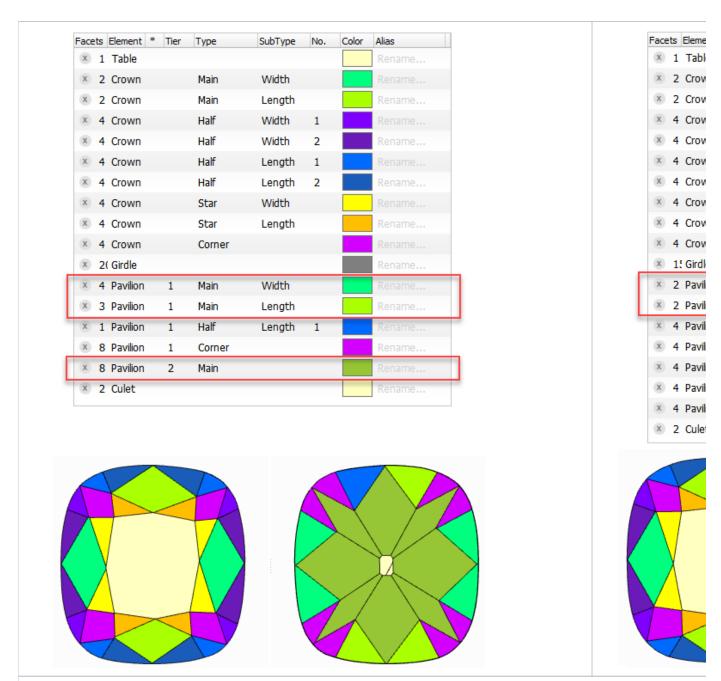
Video Increasing Mass - Using Sandwich Inclusions										
Published:	2020, October 16	Last Updated:	2020, October 16	v.2.0						
Your browser does	Your browser does not support the HTML5 video element									
It splits an incThe external (The internal (Big inclusions	lusion into layers	ded in the solution thus it e solution boundaries, ke surface give the chance		·						
Video keywords:	clarity, inclusion, sandwic	h, QC panel								
Published in:	Release Notes	2020-12-29 - HP Carbon 1.1.33								
	Documentation	Inclusions	sions							
	Playlists	All Videos YouTube: I	HP Carbon							
	Also	As Separate Page Or	YouTube Specification							

Scanning - Applying Facet Marking from Sample

Now during scanning using a loaded sample cutting, a facet marking from this sample is automatically transferred to the created 3D model. This provides an effective way of getting the correct facet classification (marking) for your model and creating the *appropriate reports*.

For example:

Auto Marking	Marking of Sample and
--------------	-----------------------

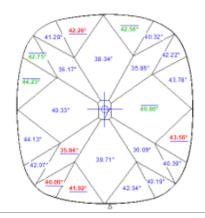


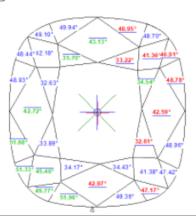
Resulting Polish Report

(strings for Pav Main Width, Pav Main Length, and Pavilion 2 Main are highlighted with the colors from Facet Marking)

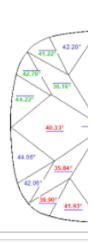
Parameter		Avg	Min	Max	Dev	1	2	3	4
Crown height, %		22.81	22.73	22.90	0.16	22.73	22.90	N/A	N/A
Crown Width height, %)	22.81	22.73	22.90	0.16	22.73	22.90	_	_
Crown Length height, 9	%	23.50	22.85	24.16	1.31	24.16	22.85	_	_
Crn Main Width height,	%	22.49	22.46	22.52	0.06	22.46	22.52	_	_
Crn Main Length height	t, %	23.16	22.32	24.01	1.69	24.01	22.32	-	_
Crown Corner height, %	6	23.51	22.44	25.41	2.97	22.81	22.44	23.37	25.41
Pavilion height, %		39.76	39.51	40.00	0.50	40.00	39.51	N/A	N/A
Pavilion Width height, 9	%	39.76	39.51	40.00	0.50	40.00	39.51	-	_
Pavilion Length height,	%	39.33	38.89	39.77	0.88	38.89	39.77	_	_
Pav Main Width height,	%	20.72	19.45	22.36	2.91	20.39	20.67	-	-
Pav Main Length height	t, %	20.40	20.23	20.55	0.32	20.42	20.23	-	-
Pavilion Corner height,	%	38.49	38.06	39.06	1.01	38.35	39.06	38.49	38.06
Pavilion 2 Main height,	%	38.59	37.39	39.77	2.38	39.38	38.29	38.47	38.64
Table: Side, %		51.56	49.60	53.53	3.93	49.60	53.53	_	_
Table: Corner w.r.t. Cor	ner, %	56.24	56.00	56.47	0.48	56.00	56.47	_	_
Table: Corner w.r.t. Wid		66.17	65.93	66.42	0.49	65.93	66.42	_	_
Diameter: Corner, %		117.67	117.61		0.13			_	_
Crown Star Length, %:		48.79	47.76	49.67	1.91	_	_	_	_
Crown Star Width, %		50.76	48.52	54.13	5.61	_	_	_	_
Girdle thickness, %		6.41	6.25	6.58	0.33	_	_	_	_
Culet, %		10.54	7.29	11.94	4.65	_	_	_	_
Crown angle, °		42.65	42.59	42.72	0.14	42.72	42.59	_	_
Crown Main angle, °		42.65	42.59	42.72	0.14	42.72	42.59	N/A	N/A
Crn Main Width angle,	0	42.65	42.59	42.72	0.14	42.72	42.59	_	_
Crn Main Length angle,		43.05	42.97	43.13	0.16	43.13	42.97	_	_
Crown Corner angle, °	·	42.58	41.36	45.40	4.04	42.18	41.36	41.38	45.40
Crn Star Width angle, o)	33.42	32.61	34.54	1.94	32.63	34.54		33.89
Crn Star Length angle,		34.38	33.22	35.70	2.48	35.70	33.22		34.17
Pavilion angle, °		37.89	35.84	40.80	4.96	40.80	35.86		36.17
Pav Main Width angle,	0	43.93	43.56	44.23	0.67	43.78	44.23	_	_
Pav Main Length angle,		42.27	41.92	42.56	0.64	42.56	41.92	_	_
Pavilion Corner angle, o		41.15	40.00	42.75	2.75	42.22	40.32	41.29	42.75
Pavilion 2 Main angle, o		37.89	35.84	40.80	4.96	35.86	38.34		40.33
Girdle thickness, %	Type	Avg	Min	Max	Dev	1	2	3	4
G. th. Width	red	6.41	6.25	6.58	0.33	6.25	6.58	_	_
G. th. Length	red	6.15	5.94	6.37	0.43	5.94	6.37	_	_
G. th. Width	red	6.99	5.52	7.83	2.31	7.83	7.48	7.13	5.52
G. th. Width	green	3.84	3.55	4.14	0.59	3.84	4.14	3.84	3.55
G. th. Length	red	3.57	3.12	4.14	1.02	3.42	3.12	4.14	3.57
G. th. Corner width	green	4.86	3.97	5.23	1.26	5.18	5.23	5.05	3.97
		4.02	3.20	5.39	2.19	5.39	3.31	4.18	3.20
	areen	4.02	3.20						
G. th. Corner length G. th. Width	green yellow	5.94	5.74	6.18	0.44	6.04	6.18	5.74	5.80

Facets' angles





Parameter Crown height, % Crown Width height Crown Length heigh Crn Main Width heig Crn Main Length hei Crown Corner heigh Pavilion height, % Pavilion Width heigh Pavilion Length heig Pav Main Width heid Pav Main Length hei Pavilion Corner heig Table: Side, % Table: Corner w.r.t. Table: Corner w.r.t. Diameter: Corner, 9 Crown Star Length, Crown Star Width, 9 Girdle thickness, % Culet, % Crown angle, o Crown Main angle, ^c Crn Main Width ang Crn Main Length and Crown Corner angle Crn Star Width angl Crn Star Length ang Pav Main Width ang Pav Main Length an Girdle thickness, (G. th. Width G. th. Length G. th. Width G. th. Width G. th. Length G. th. Corner width G. th. Corner length G. th. Width



G. th. Length

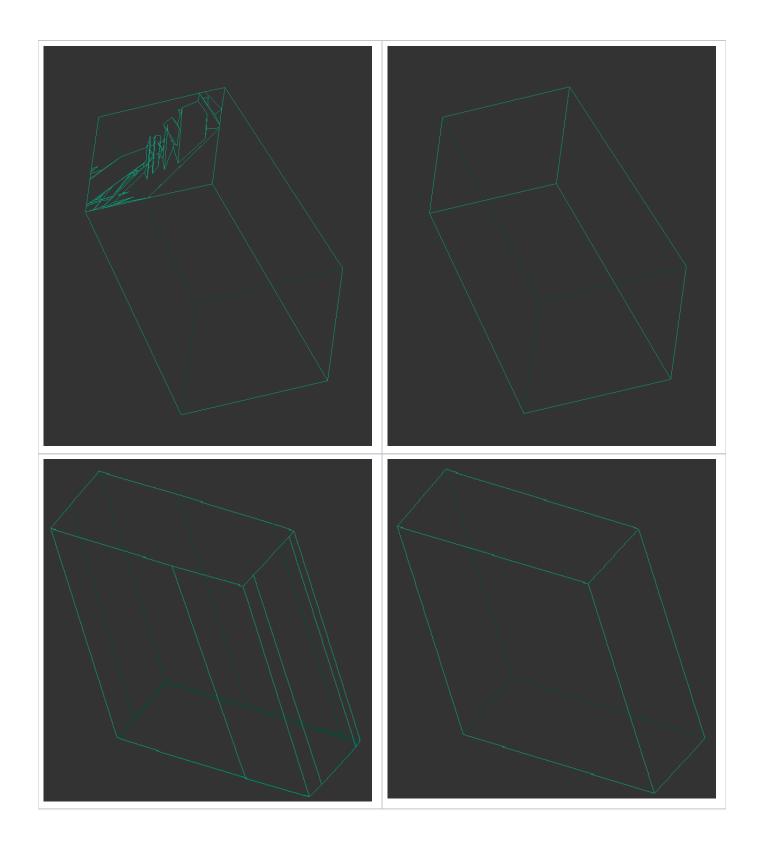


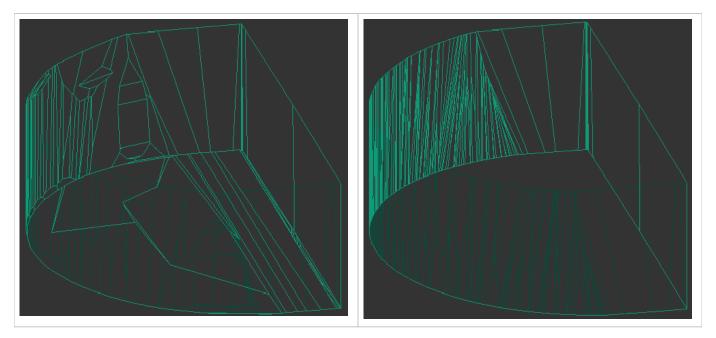
- You can view the facet marking of your sample (DMC format). Do one of the following:
 - As you select your sample in Cutting & Method, it is added to the Models section. There click its name, then on the right panel, click Facet Marking.
 - Open your DMC in HP Carbon and then click the Facet Marking button on the right panel. The file can be opened by:
 - Drag and drop your DMC to the HP Carbon window.
 - In HP Carbon, select File > Open, navigate to your folder, then start typing the name of your file. As soon as it is suggested, select the file and click Open.
- You can *change something in the facet marking* of your DMC sample. To do this, perform the steps:
 - Open DMC and its facet marking as described above.
 - Make changes to the facet marking.
 - o Click **Export Sample**, specify a name for your changes version, and then click **Save**.
 - Add a new version of the sample to the system, remove the old one.

Industrial Object Models - Build and Facet Marking Improvement

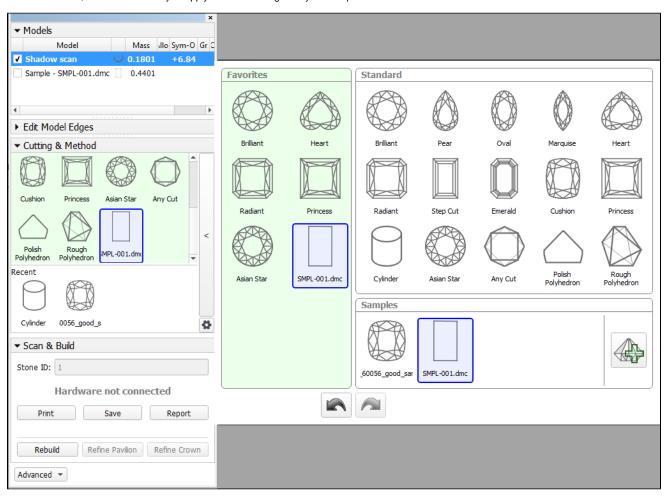
A building of industrial object models (cubes, cuboids, trapezoids, truncated cylinders) is improved.

Was	Now
-----	-----





For such models, it is also necessary to apply a facet marking from your sample.



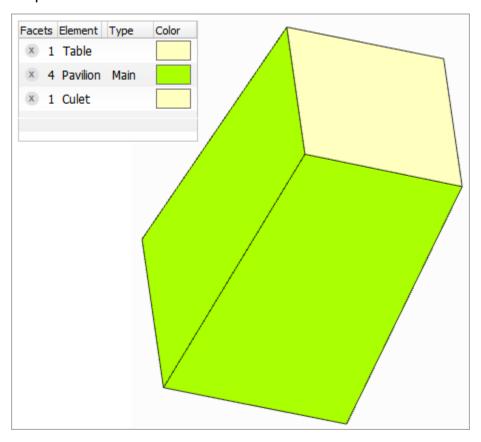
To build a good model for your simple object and automatically apply a facet marking from your sample to it:

- 1. Prepare your DMC sample with the appropriate facet marking.
- 2. Use the Scan mode.



 In the Cutting & Method section, add your sample to the list.
 Select your sample as a cutting. The system will automatically set the optimal method.
 Start scanning.
 The model of your object is built using one of the improved methods and added to the Models section. Its facet marking is automatically taken
 from your sample.

Trapezoid Workflow



Now you can use the system to quickly obtain important information (*report*) about your trapezoid-like objects:

ILLUSTRATED REPORT FOR TRAPEZOID

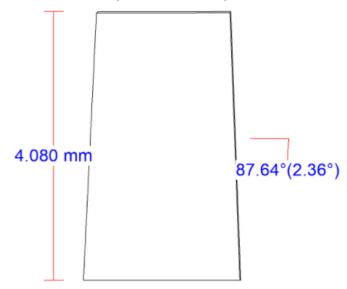
StepCut 22.10.2020

Model Expert name Scale weight, ct Corrected mass, ct Spread Extra Facet Girdle / Nat Shadow scan 8 N/A N/A 0.34, 0.3442 -0.27ct, -394.04 % No

Width	Length	Ratio (L/W)	Table Average	Table Minimum	Table Maximum	Table Deviation	Total height
2.342 mm	2.377 mm	1.015	2.359 mm	2.342 mm	2.377 mm	0.034 mm	4.080 mm

Parameter	Avg	Min	Max	Dev	1	2	3	4
Pavilion angle, °	87.64	87.24	88.05	0.81	88.05	87.89	87.40	87.24

W: 2.019 mm, L: 2.041 mm, L/W:1.011



W: 2.342 mm, L: 2.377 mm, L/W: 1.015

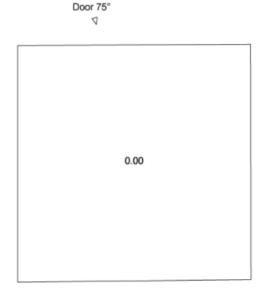
Facets' angles

87.89 87.40 0.51 88.05

87.24

Door 75°

D



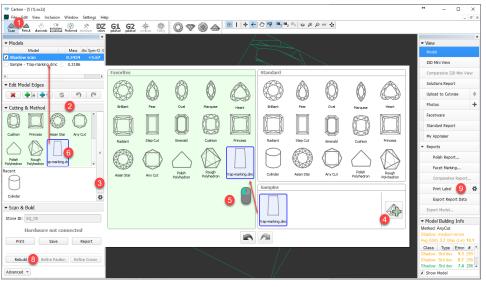
What is improved and added to the system and for what?

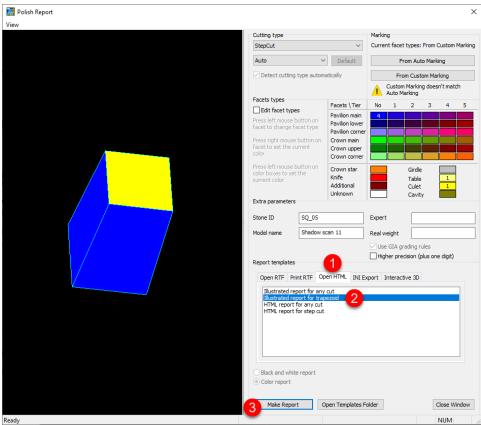
Type of Update	Feature	Description	Why that was not enough?
New	HTML illustrated report for trapezoid Described in this Release Notes in HTML Illustrated for Trapezoid	Gives you all the important parameters and pictures of your trapezoid model.	Before running the report, you need a good model with the appropriate facet marking.
Improved	Method of building the trapezoid-like models during the scanning Described in this Release Notes in Industrial Object Models - Build and Facet Marking Improvement	The methods used for building trapezoid-like models are improved: you do not obtain unnecessary extra facets any more, the model is more precise.	Problem 1: you need to think about which method to select. Problem 2: even the good model needs an appropriate facet marking - previously scans did not obtain facet marking automatically.
New	When scanning/rebuilding using the sample trapezoid: • automatic selection of method • automatic transfer of facet marking from sample to scan Described in this Release Notes in Scanning - Applying Facet Marking from Sample	If during scanning/rebuild you use your own sample trapezoid as cutting, the appropriate method will be detected by the system automatically, and your good facet marking will be automatically transferred from sample to your scan.	This gives you all except the report - which was given is step 1!

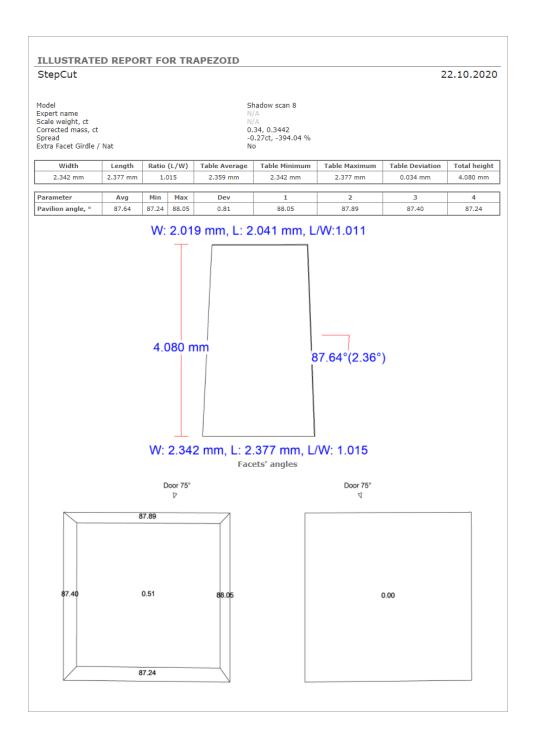
How to work?

- 1. Use the Scan mode.
- 2. Use the Cutting & Method section.
- 3. Expand the section.
- Add your sample.
- 5. If necessary, drag your sample to the Favorites list.
- 6. Select your sample to be used as cutting. The sample will be added to the Models section.
 7. To check the facet marking of your sample, in the Models section, click your sample, then on the right panel, click Facet Marking.
 - a. Side facets of your trapezoid should be marked as "Pavilion Main".
 - b. If you want to modify the facet marking of your sample, in the Facet Marking dialog make your changes, then click Export Sample and save as DMC.
 - c. You will need to add a changed version of the sample and then use it (repeat step 2).
 - d. Remove the old sample from the **Samples** list.
- 8. Run Scan or Rebuild. Your new scan is added to the Models section.

9. With your new scan selected, on the right panel, click **Polish Report**, go to **Open HTML**, then select "Illustrated report for trapezoid" and **Make Report**.



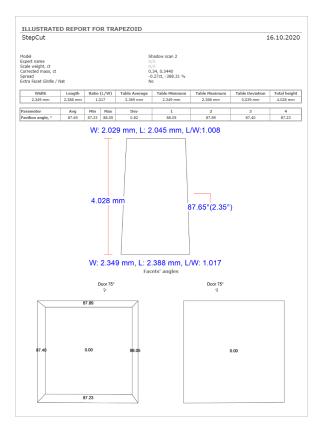




Polish Report Templates

HTML Illustrated for Trapezoid

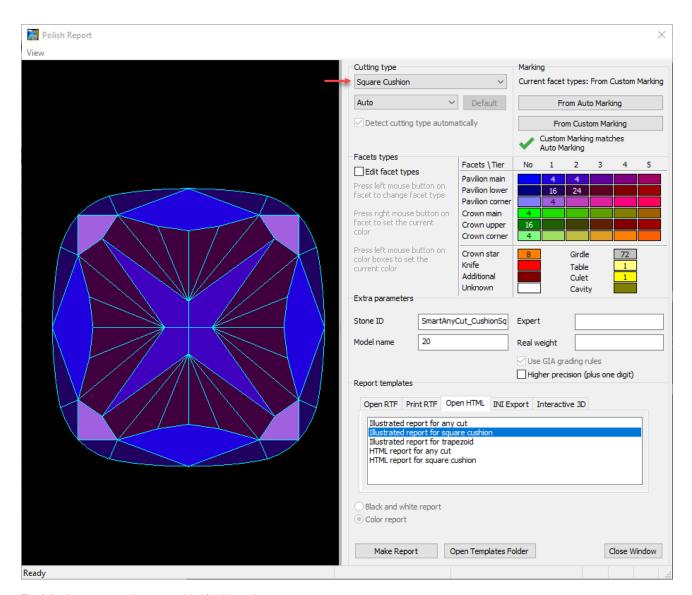
The new template for Polish Report is added - HTML Illustrated for Trapezoid.



This template is an essential part of the Trapezoid Workflow.

Square Cushion - Cutting Type Support and Reports

Now in Polish Report, the ${\bf Cutting\ Type}$ list includes "Square Cushion".



The following report templates are added for this cutting type:

- - Illustrated report for square cushionHTML report for square cushion
- I3D

Report for Square Cushion SmartAnyCut_CushionSquare_001_ver1

Polished Square Cushion 01.10.2020

Model: Expert name: N/A Scale weight, ct: N/A

Corrected mass, ct 4.87, 4.8738 Spread -1.09 ct, -28.79 %

Extra Facet Girdle / No

Width	Width Length		Corner Ratio	Diameter Minimum	Diameter Maximum
9.372 mm	9.561 mm	1.020	1.000	9.372 mm	10.838 mm
Total height	Crown height	Pavilion height	Table: Side	Culet	Girdle
Total height 6.335 mm	Crown height 1.371 mm	Pavilion height 4.588 mm	Table: Side 5.784 mm	Culet 0.000 mm	Girdle 0.376 mm

▼ Photorealistic Images:







Also, the Standard Report for Square Cushion is updated correspondingly.

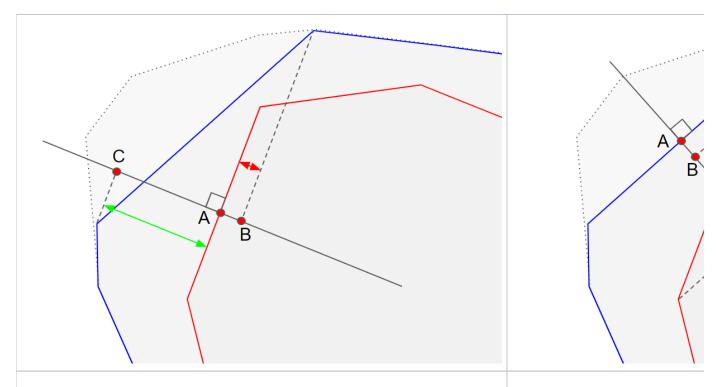
Comparative I3D Mini View - Distance from Reference/Current

For the Comparative I3D Mini View, two new modes are added:

- Distance from Reference, µm
- Distance from Current, µm

Distance from Reference, µm

Distance from Current, µm



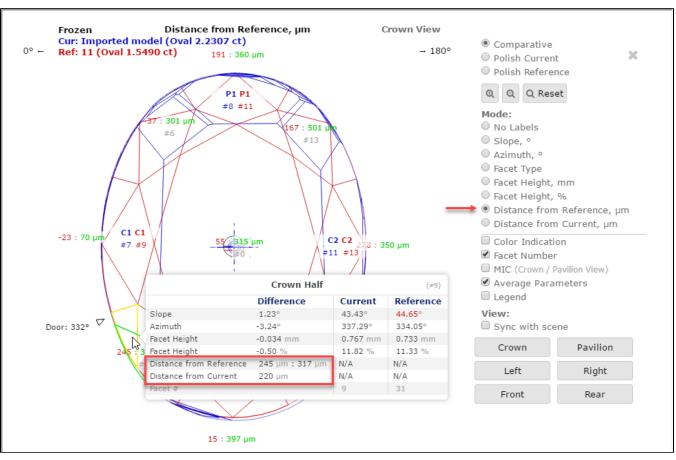
- A intersection of facet of reference and normal to it
- B from all the projections of facet of current onto normal the one with minimum distance from the cen
 ter
- C from all the projections of facet of current onto normal the one with maximum distance from the ce nter
- A-B Distance from Reference, μm
- A-C Distance from Reference, µm

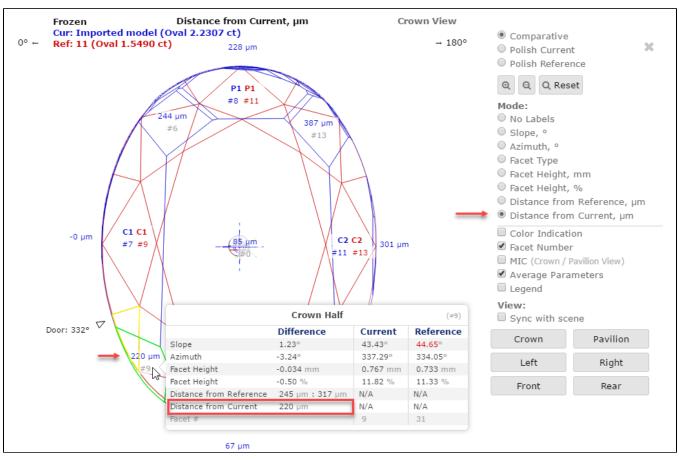
- A intersection of facet of current and
- B from all the projections of facet of r
- A-B Distance from Current, μm

Notes on meaning:

- The less the difference between maximum and minimum, the more parallel the facets of current and reference are.
- Both values positive means the **current** is larger than the **reference** .
- If <u>Distance from Reference</u>, min is negative (like on the picture above), this means a part of the facet
 of <u>current</u> should be kept.
- Distance from Reference, max shows "how much should be cut in the correct direction" to get the
 result.
- "How much more can be cut parallel to
- A positive value means the current is

Here is an example:





New Smart Recut Parameters

The new parameter is added to the appraisers used by the Smart Recut algorithms.

SquareDeviation Tolerance



This parameter is applicable to the following cuts: AnyCut.

The parameter is used in the same way as the Square Deviation of the Oval cut. Unlike Square Deviation, the SquareDeviationTolerance (used by Smart Recut only) is set via presets and limits not the value of the parameter, but its deviation from the value of the starting model.

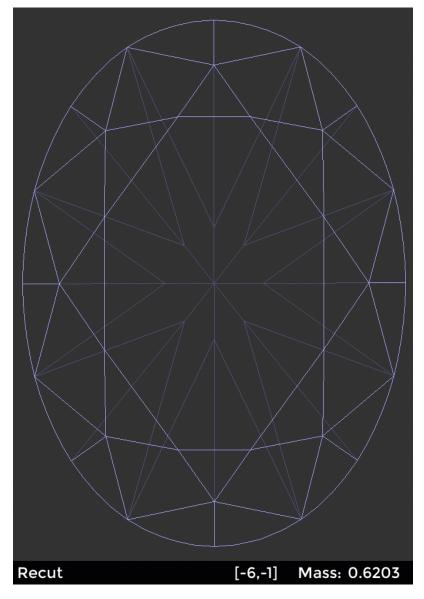
Calculation

The parameter is calculated in the same way as the Square Deviation of the Oval cut.

Usage and Examples

Here is an example of how the parameter affects a girdle shape and mass:

117_SM_10137_Square DeviationTolerance.ox2z



Reporting

Reported in	Section	Values	Units	Bookmarks	Name in Reports
None	NA	NA	NA	NA	NA

Visualization in Appraisers

- MyAnyCutOpt | MyAnyCut
 CushionRectangular_Opt | CushionRectangular
- CushionSquare_Opt | CushionSquare

Value	Units	Bookmark	Tab	Parameter Name	Comment
Avg (the only value)	None	NA	Cut	SquareDeviationTolerance	Visible only when presets are displayed.

G1 Galahad

New Features

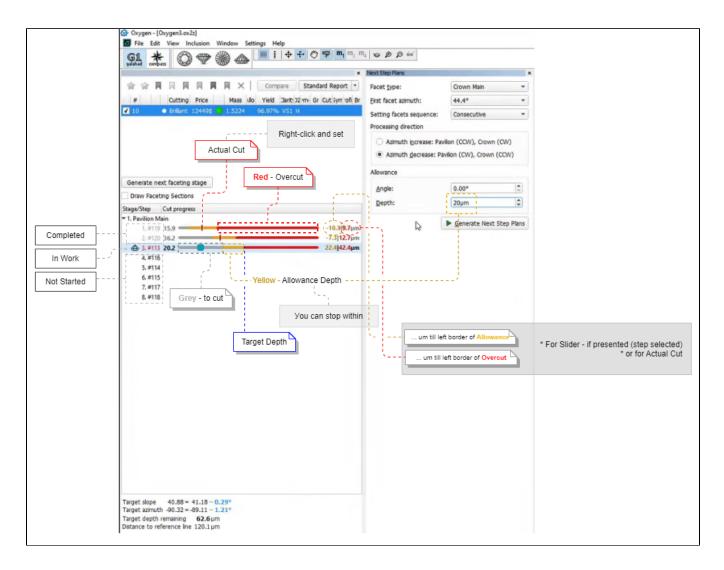
For the G1 Galahad mode, the new features were added. As this functionality is shared with the Galahad Compass product, see details in the Galahad Compass documentation:

- Release notes 2020.10.21 Carbon Compass 1.1.13 (public)
 Release notes for the currently developed Galahad Compass release (internal)

Here is a brief overview of what is new:

- Workflow improvements
 Actual Cut and 4 Colors for Steps
 - Order of Work Stages and Steps

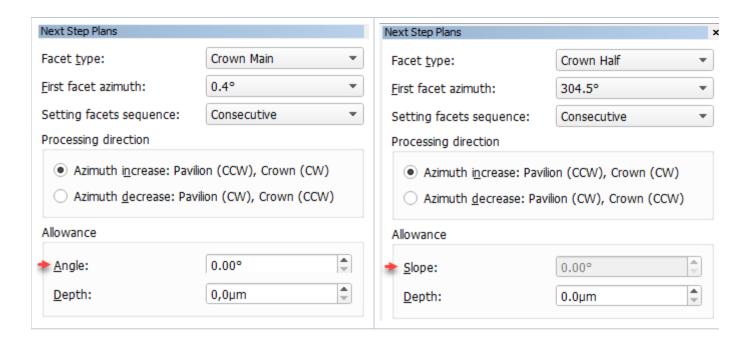
 - Actual Cut Model
 Protection of Overcut Area ("lock" icon)



Slope Allowance Parameter

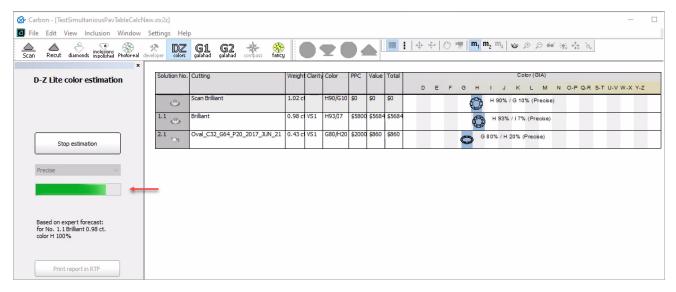
In the **Next Step Plans** panel, the **Allowance** section, the **Angle** parameter is renamed to **Slope**. The usage of the parameter is temporarily blocked (next step calculation does not consider this parameter) due to technical reasons (planned to be restored in the upcoming releases).



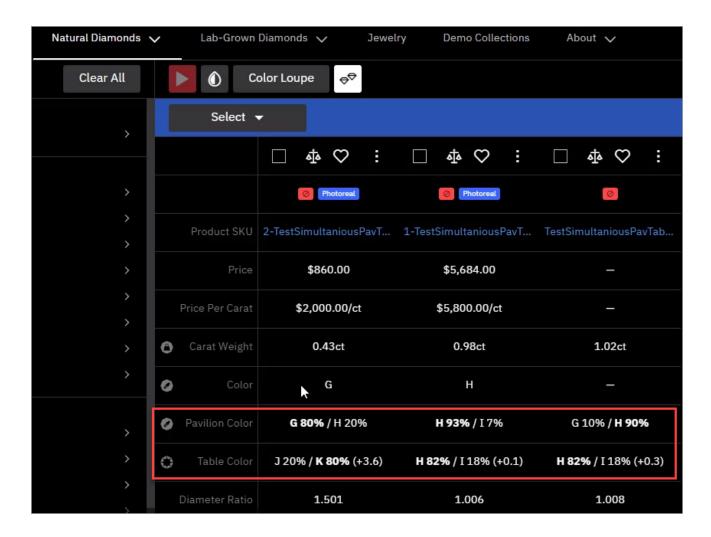


DZ Color Estimation - New Approach and Progress Bar

Previously for DZ Color Estimation , the calculation of Table Color was performed *after* the Pavilion Color for all the solutions - the process could take time but the progress was not anyhow displayed within the system. This caused the cases when the export to Cutwise could have been started before the calculation is finished thus the data uploaded to Cutwise did not contain the Table Color information. Now the Pavilion Color and Table Color are calculated together for each solution and the entire progress is indicated:

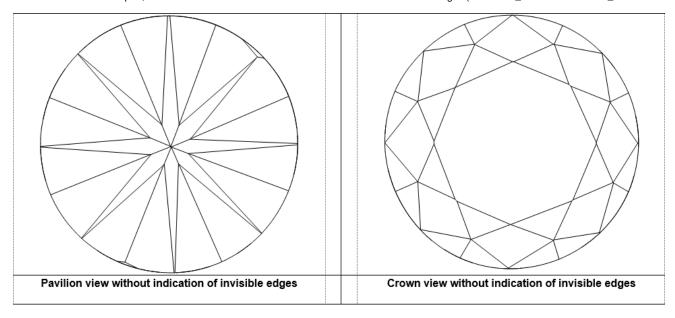


This approach guarantees that during export to Cutwise all the solutions will be exported with information about both Pavilion and Table Colors.



Polish RTF Reports - Views without Invisible Edges with Rotation

In the Polish RTF Full Report, there are Pavilion and Crown views without indication of invisible edges (PAVILION_VIEW and CROWN_VIEW bookmarks):



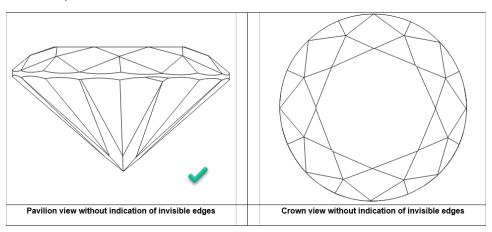
Now you can change the rotation of the model presented on these images. To do this:

1. In the template, locate PAVILION_VIEW or CROWN_VIEW bookmark.

2. Replace bookmarked text as follows:

Was	Now	Comment
[Width=73;Height=73;]	[Width=74;Height=74;PictureID=DRAW_DIAMOND;PavilionView=1; Circle=0;Parameter=0;FontSize=0; X=22.5;Y=90 ;]	X and Y with values are responsible for rotation.

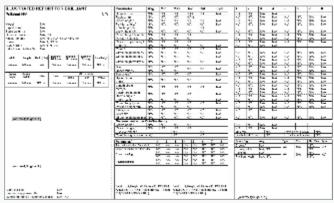
- 3. Make sure, your bookmark continues to enclose the parameters, including brackets.
- 4. Save the template.



Also, other Polish RTF reports support adding the same images with the rotation you need.

Below is the example showing how the rotated Pavilion view without invisible edges can replace the standard image in the Polish RTF Illustrated report for brilliant:

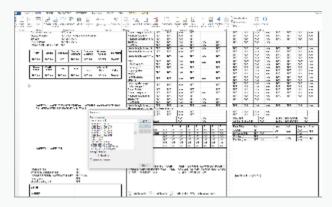
- Open the template you want to change via the right panel > Polish Report > Open Templates Folder, then opening the template file in MS Word.
- 2. Delete the bookmark of the image we want to replace.



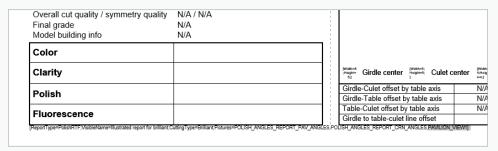
3. In this position, insert the string:

 $[Width=74; Height=74; PictureID=DRAW_DIAMOND; PavilionView=1; Circle=0; Parameter=0; FontSize=0; X=22.5; Y=90;]]$

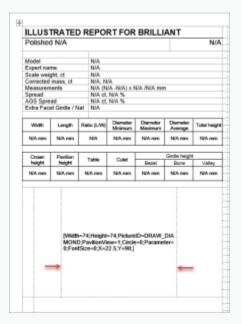
4. Highlight this string including brackets, then insert MS Word bookmark PAVILION_VIEW1.



5. At the very bottom of the page, in the small font string, at the end of the string but before closing square bracket, put comma then (without space) PAVILION_VIEW1.



6. If necessary, to set boundaries for your image, insert columns or/and rows using the MS Word Table tool.



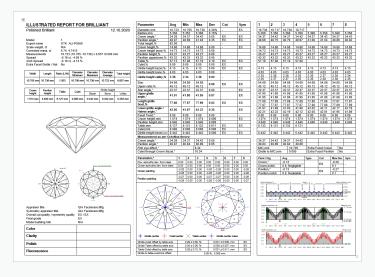
7. Save changed report template.



Note

If you want to save changes as a separate template, use **Save As** - before saving, in the small font string, change the VisibleName parameter.

The resulting report will look like:



Cutwise Integration - Upload to Cutwise vs Manual

When using Integration with Cutwise, you have two ways of uploading your data to Cutwise:

- Standard, automatic: via the **Upload to Cutwise** button in HP Carbon
- . Manual: uploading models/reports directly (for example, as DMC files, including the ones obtained from the old HP Oxygen) via uploader

It is important to remember, that if you use the **Upload to Cutwise** function in HP Carbon, you should not use the manual approach for the same data, because after **Upload to Cutwise** is used if you try to manually upload the same models/reports, you will not see the new data in Cutwise - the one previously uploaded from the system with the **Upload to Cutwise** function will stay unchanged.

New Logo and Icons

HP Carbon now has the new logo:





Fixed Problems and Improvements

The following fixes for the known problems and improvements are implemented:

• For Comparative I3D Mini View, synchronization with the Scene did not work in some cases - now this is fixed.



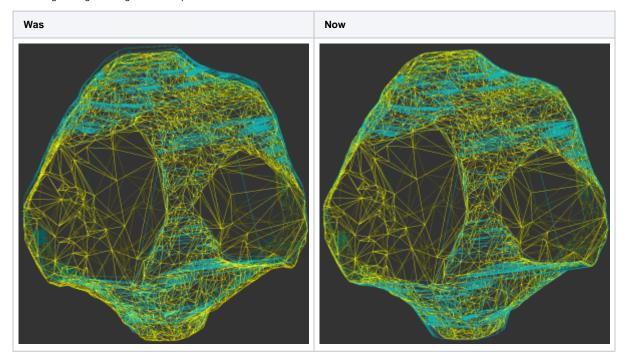


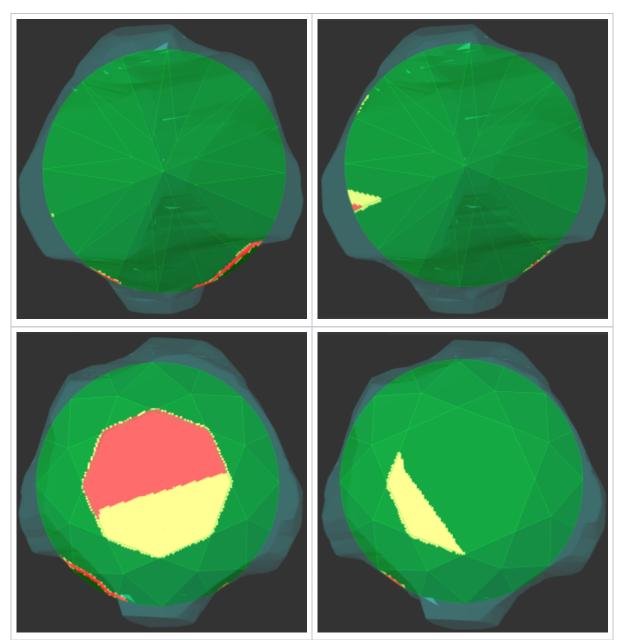
Models in Comparative Reports are aligned by the Current model now and in particular in Comparative I3D Mini View. Due to the modification of models' alignment calculation results in Comparative Reports is changed.

- Facet Marking transfer for some cuttings is improved.
- To improve Smart Recut allocation for the big (5ct+) round stones, to the "MyRound | GIA Facetware + MyRound" appraiser, the "MyRound_ H&A 5ct+" profile, the appropriate presets are added.
- Minor further improvements are made for the Smart Recut mechanism of creating girdle extra facets. Read about this *mechanism improvement* in the previous release on the 2020-08-11 HP Carbon 1.0.0 page.
- For the Princess cutting, the model building is improved the Crown is now built better.
- For the Smart Recut, when working with multi-diamond solutions from rough, described for the previous release (2020-08-11 HP Carbon 1.0.0 p age), some additional improvements are implemented:
 - o Facet marking is copied along with the diamonds copied during Smart Recut
 - A bunch of Smart Recut attributes is copied along with the diamonds
- · Cutwise integration:
 - The Upload to Cutwise feature is now available on all HASP keys.
 - o A new basis position is supported "Culet" (= "Heart").
 - O Solutions with cutting names in user locale were not uploaded to Cutwise now this is fixed.
- Bug with the episodic crash of the system during file opening is fixed.
- Bug with the crash of the system during DZ Color calculation is fixed.
- A rare bug when some system settings were reset to default values is fixed.
- Autosave did not work now this is fixed.
- During the import of scanned ASCII, an error occurred (displayed on the picture below) caused by too strict limitations. Now limitations are eased
 to avoid error and allow using all scanned ASCII models.



· The Rough recognition algorithm is improved.

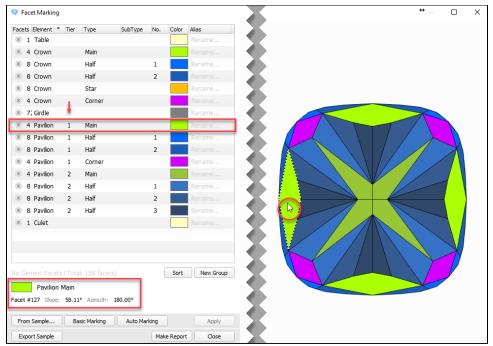




- A system crash on running Smart Recut with AnyCut composite appraiser for some specific cuttings is fixed.

 Fixed bug with wrong DZ Color Estimation of Main Scan if a project had several scanned or imported models. This issue was not affecting DZ estimation of solutions.
- The wrong model rebuild for the Oval cutting is fixed.
- In the Illustrated report for Cushion, on the image, some facet angles were not displayed now this is fixed, all angles are presented. Label printing is improved to work correctly with different page sizes.
- The problem leading to an episodic crash of the Smart Normalize algorithm is solved.
- The problem with Comparative I3D Mini View freezing in some cases is solved.
- The system rare crash during Cutwise upload is fixed.

 In the I3D Report and View, for the Sakura cutting, the Table parameters were mistakenly displayed as "0.00" while they are not calculated at all now they are displayed as "N/A".
- Smart Recut crashed the system if Solutions Report was previously opened now this problem is fixed.
- The Facet Marking dialog:
 - When pointing a facet, "Tier" information was not displayed in the facet info block for "Tier 1" now this is fixed.



• For the "Cylinder" cutting, the dialog did not open (the error was displayed instead) - now this is fixed.