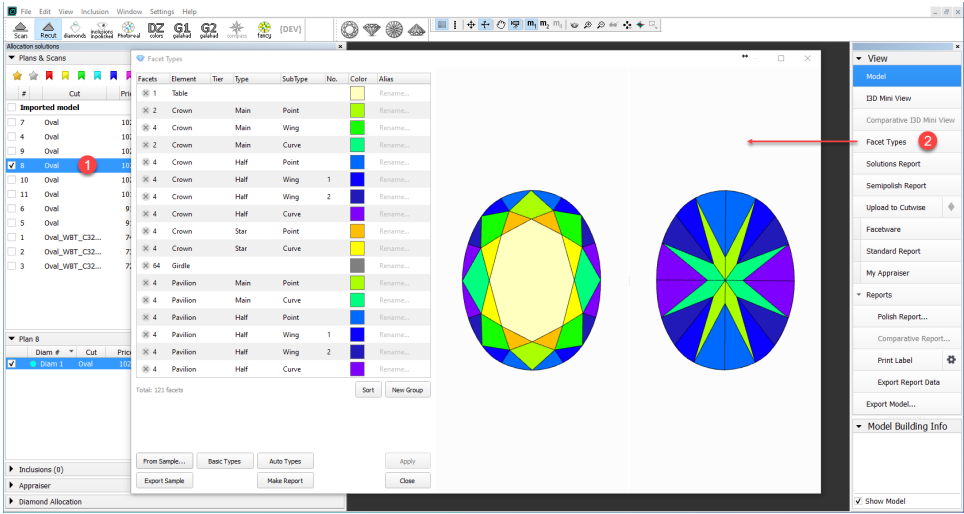# Facet types

Any model can have its *facet types* information.

To access it:

1. In the solution list, click the model.
2. On the right panel, click **Facet Types**. The **Facet Types** dialog is displayed.

Here you can overview the facet types of your model or edit it as described in the sections below.

Does my model have facet types?

Short answer: all the models should have facet types:

- plans for standard cuts obtain them from the library (see Facet types for standard cuts)
- plans for in-house cuts obtain them from the cut's allocation forms
- scans made with sample obtain them from this sample

In rare cases, some scans or imported models may have no facet types - opening the **Facet Types** dialog for them will not show that - instead the **Auto Types** will be immediately applied to the model and saved with it even if you do not click Apply.

Auto vs. custom

In the **Facet Types** dialog:

- Click **Auto Types** to automatically get types specified for this model cut in HP Carbon.
- Or get the *custom* facet types for your model by:
  - clicking **Basic Types** to get grouping by basic cut elements: crown, table, girdle, pavilion.
  - transferring **From Sample...**
  - manual editing

Auto	Custom

From sample or manual	Basic
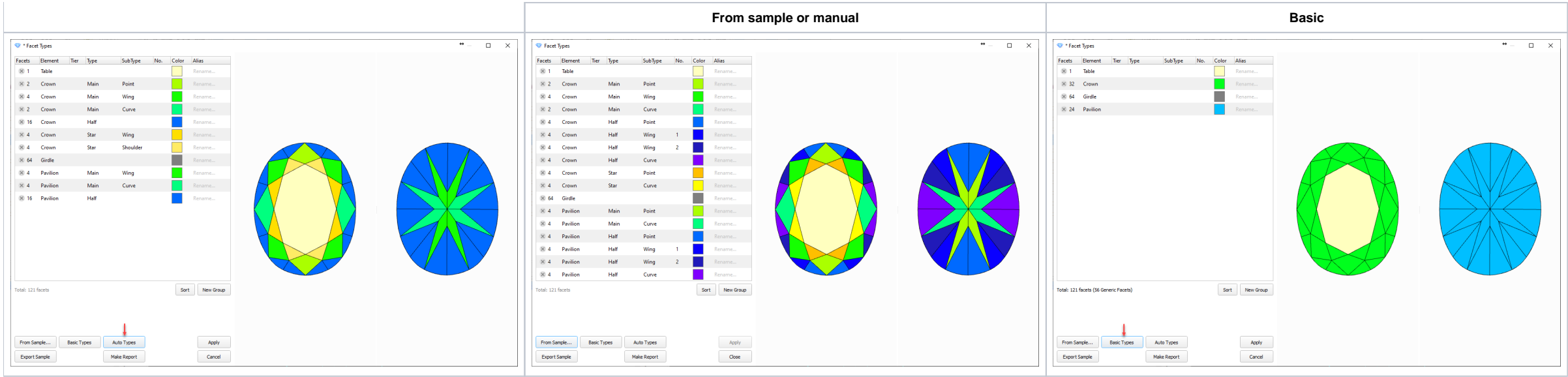
Auto vs. custom - what gives better Polish report?

You can compare how Polish report looks better: with auto or custom marking.

> ⚠ What you change or select regarding facet types in the **Polish Report** dialog, does not change the facet types of the model itself - you only define how to build a report *this time* - as you close the dialog, this configuration is forgotten. If you want to change the facet types of the model itself, use the **Facet Types** dialog.

Do the following:

1. In the solution list, click the model.
2. On the right panel, click **Polish Report**. The **Polish Report** dialog is displayed.
3. Use the **Types from** section.
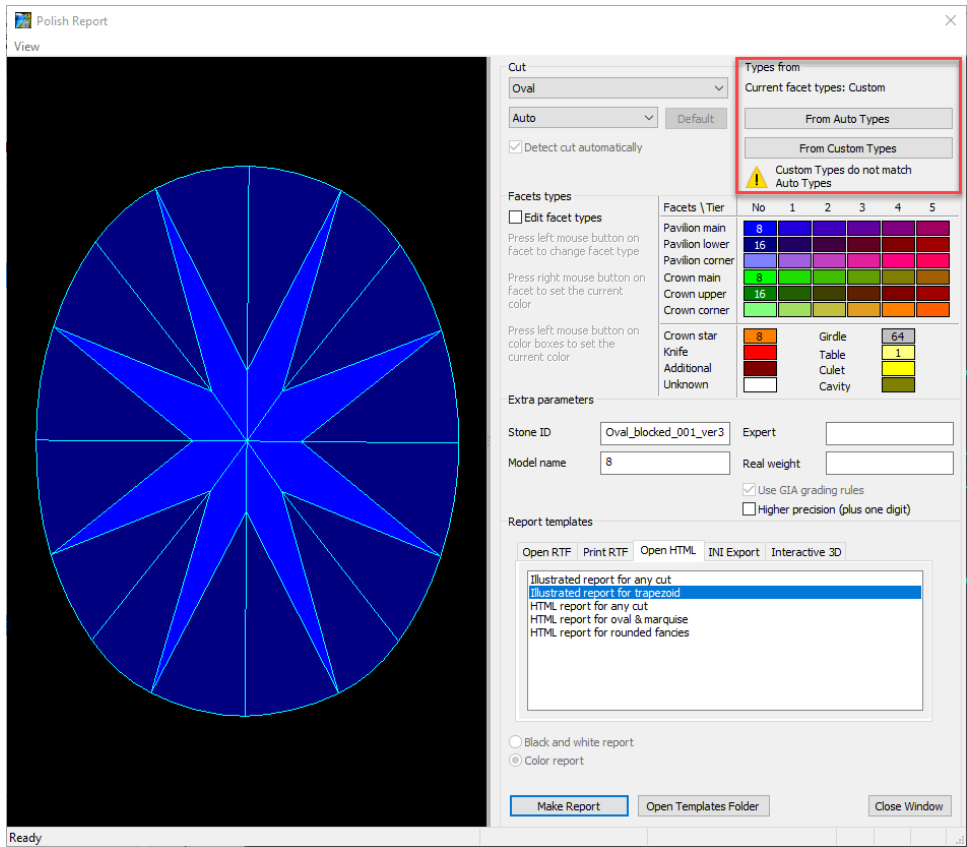
Is there a difference? Which one will be used for the report?
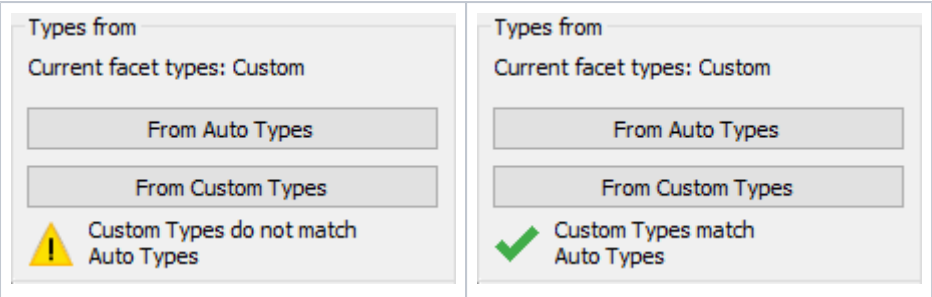
- Click **From Auto Types** or **From Custom Types** to select what facet types will be used in the report.
- If necessary, additionally select the **Edit facet types** checkbox, click a group in the table, then on the model click facet to place in this group.
- Make report.

Facet types for standard cuts

For standard cuts, for allocation results, the facet types are applied immediately after plan creation. The system uses the pre-installed sample types specified for each standard cut.
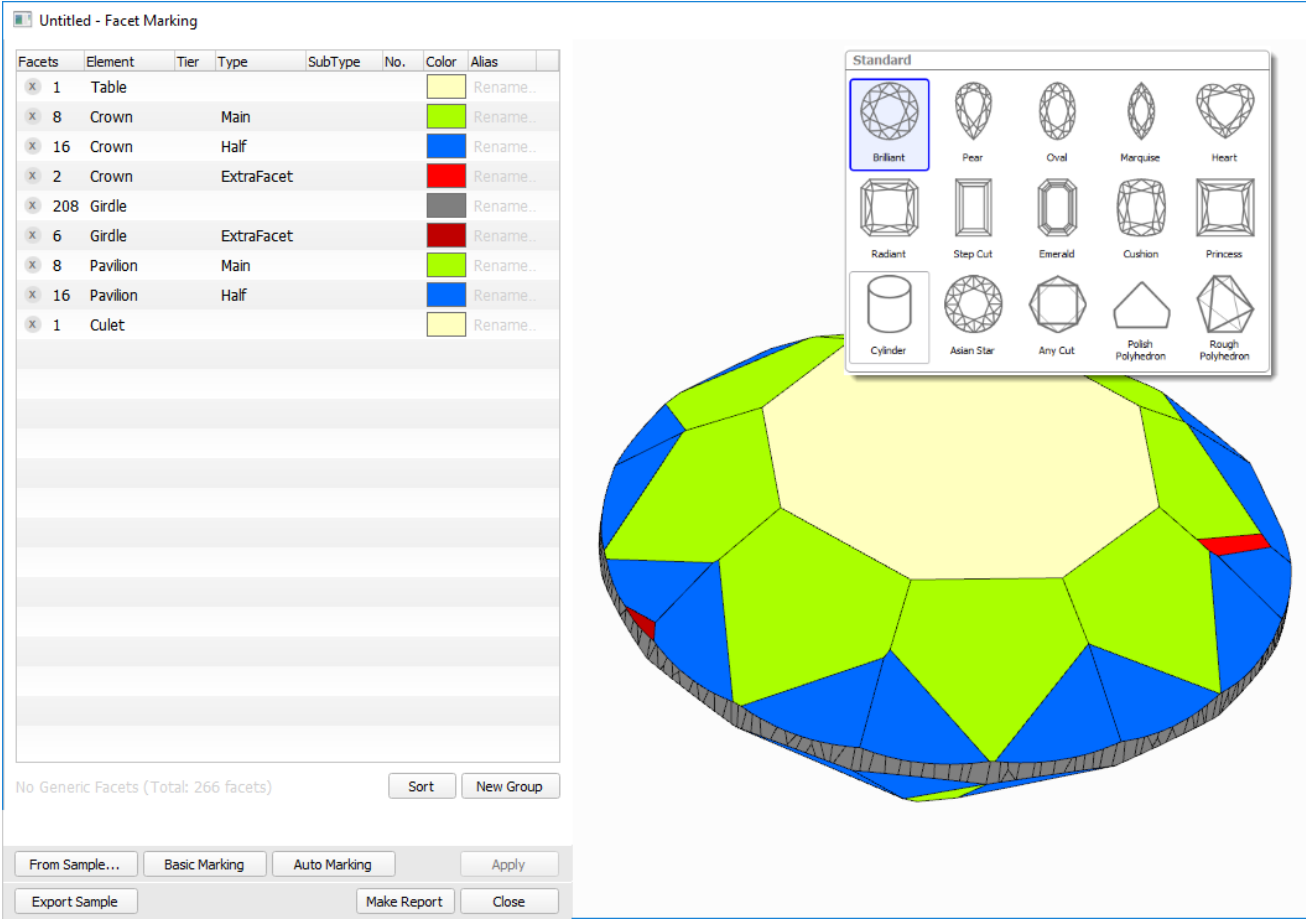
Using the specific types sample for each cut makes the resulting facet types more accurate and reduces or eliminates the need for manual corrections.

Facet types library

The system includes over 50 cuts you can use as samples to get facet types from. Now the **OctoNus Cuts Library** button is added to quickly access them:

1. Click **Facet Types**. The **Facet Types** dialog is displayed.
2. In the **Facet Types** dialog, click **From Sample...**
3. In this was not done before, click **OctoNus Cuts Library**

Samples from the library folder are added to the list.
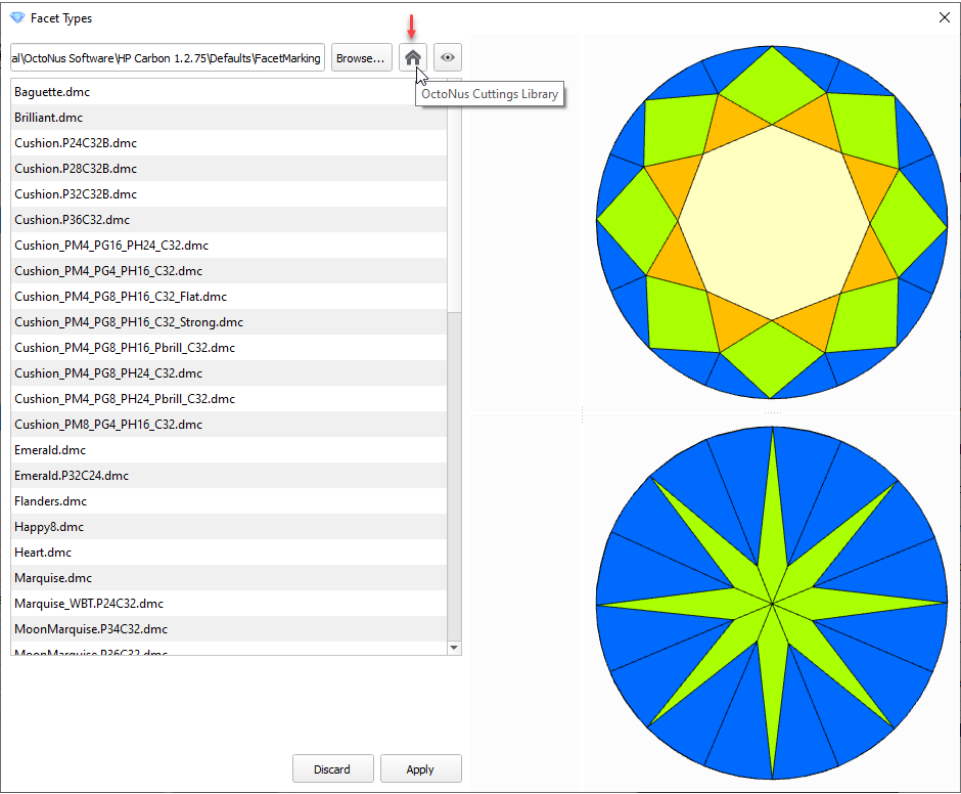
4. If you want to access the library folder, click **Browse**.

Edit facet types manually

You can edit facet types manually.

> ⚠ It is recommended to use **Auto Marking** as a start point for manual editing.

Option A: select the incorrectly marked group and edit its properties

To select a facet group, you can simply right-click with your mouse on a facet belonging to this group. Alternatively, you can find the group in the list and select it manually.

To edit group properties, simply click on the property you want to change in the in the Group List in the right panel. A select box will appear with the available options:
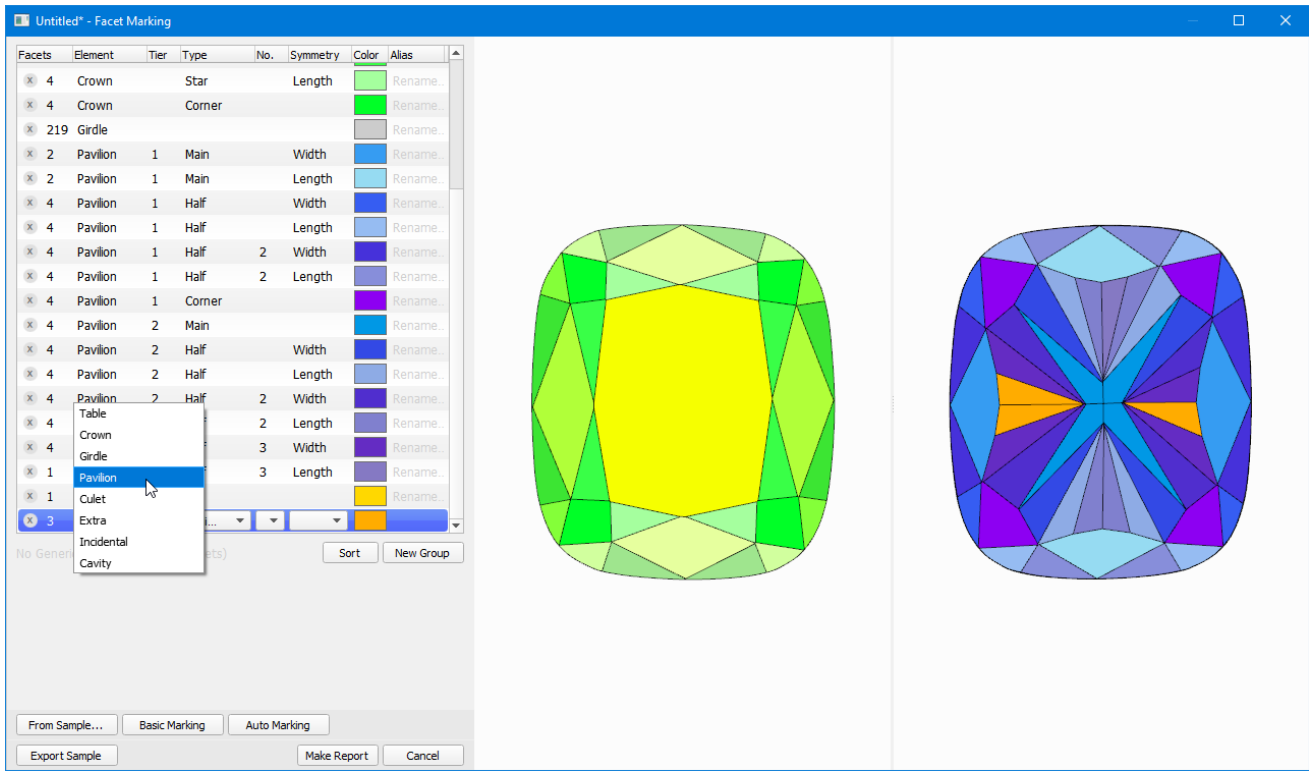
For Cushion 0, we should set this group the following properties: Pavilion 2 Half 4 Width

Using the same method it is possible to set other facets in the correct group:
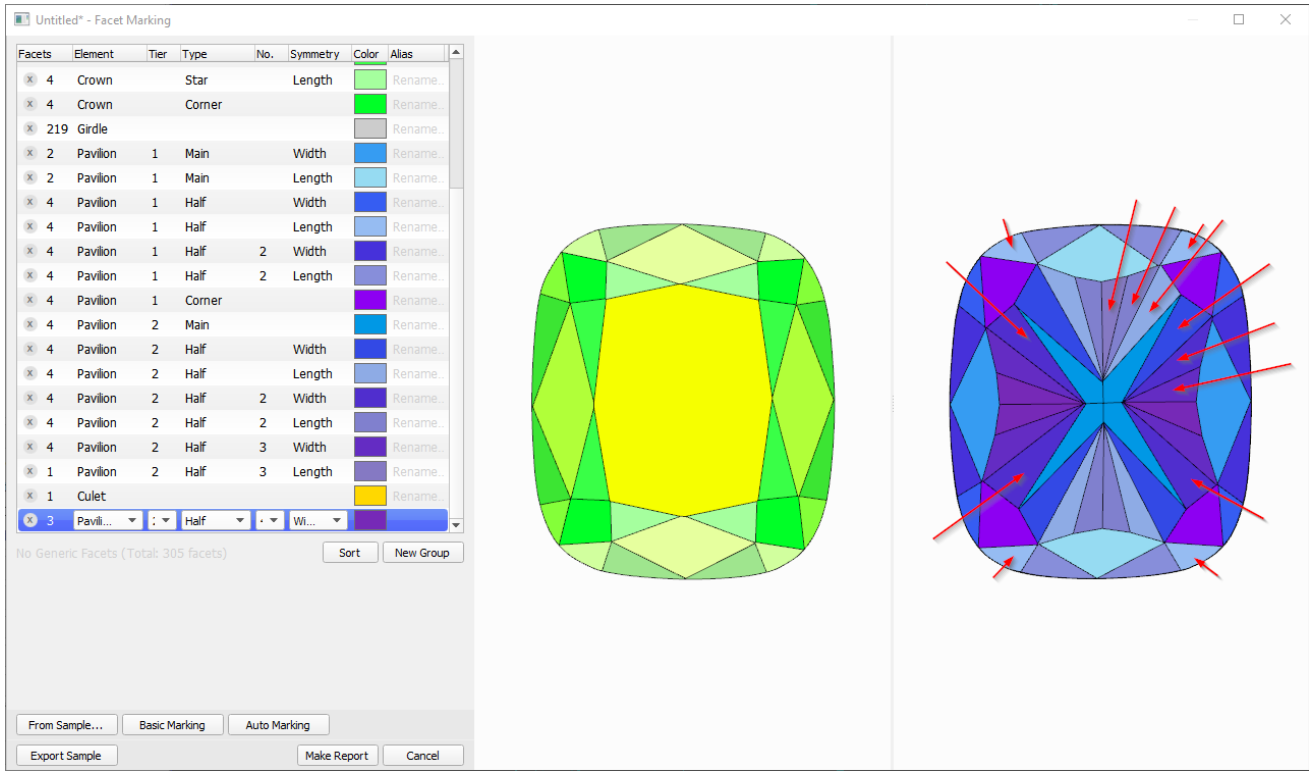
Now we have the correct facet types:
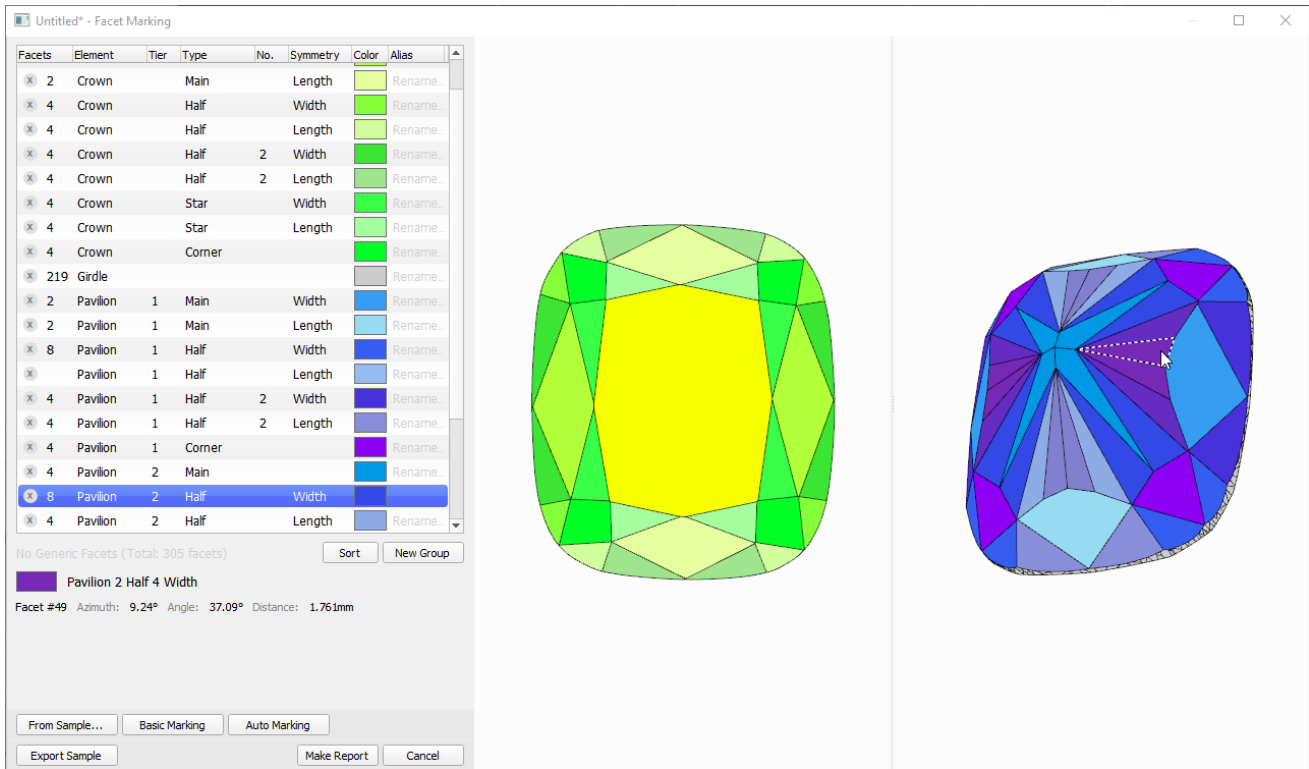
Option B: create new group and edit its options

To create a new group press the **New Group** button under the groups list.

A new group will be created and placed at the end of the list. Select it to edit its properties.

Option C: defining types for specific facets

To mark specific facets as belonging to a specific group, first select the group (in the group list or using the right-click on a facet that belongs to the desired group).

After selecting the group, click on any facet that you want to assign to the selected group.

For quick "painting" of facets, you can hold the **Ctrl** key, press and hold the left mouse button, and then hover the mouse cursor over the facets you want to paint. Normally, this mode of operation is not required, but it can be helpful if you want to pain (mark) many facets at once, for instance when marking the Girdle.

Save sample with facet types

After you've finished editing the Marking, you can export a DMC sample file with embedded Facet Marking by pressing the **Export Sample** button at the bottom of the Facet Marking dialog:
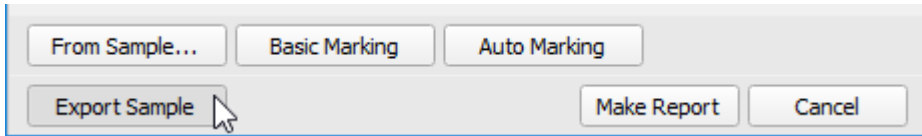
Using sample files with facet types

Loading a sample file into a project

To load the DMC sample file into a project, expand the **Cutting & Method** panel, then in **Samples**, click the ⬚ button.

Favorites

Brilliant   Pear   Oval   Marquise

Heart   Radiant   Step Cut   Emerald

Cushion   Princess   Asian Star   Any Cut

Polish Polyhedron   Rough Polyhedron

Standard

Brilliant   Pear   Oval   Marquise

Heart   Radiant   Step Cut   Emerald

Cushion   Princess   Asian Star   Any Cut

Polish Polyhedron   Rough Polyhedron

Samples

Edit Model Edges

Cutting & Method

Cushion   Princess   Asian Star   Any Cut

Polish Polyhedron   Rough Polyhedron

Scan & Build

Stone ID:

Hardware not connected

Print   Save   Report

Rebuild   Refine Pavilion   Refine Crown

Advanced

Open file with sample

This PC > Data (D:) > Samples

Organize   New folder

Search Samples

Name	Date modified	Type	Size	File version
Report				
RiverPark_Flat				
SmartZoomDem				
1234_1.dmc	15.10.2016 10:39	DiamCalc File	480 KB	
Brilliant_EX5_3.5824_3.2111_mod1.dmc	07.09.2016 17:16	DiamCalc File	18 KB	
Cushion0.dmc	17.11.2017 10:09	DiamCalc File	62 KB	
HP-8221285_1882_ideal_dc542_rbc_8crn2...	04.09.2011 13:28	DiamCalc File	38 KB	
model.dmc	02.09.2016 17:27	DiamCalc File	44 KB	
Octagon_Brilliant_Example1.Dmc	18.11.2016 12:17	DiamCalc File	335 KB	
test.dmc	09.12.2016 10:59	DiamCalc File	16 KB	

Dropbox (OctoNu
Dropbox (Persona
OneDrive
This PC
Desktop
Documents
Downloads
Drop_folder (oct
Music
Pictures
Videos
System (C:)
Data (D:)

File name: Cushion0.dmc

Model files (*.dmc, *.mme, *.ge

Open   Cancel

Right now there's no indication telling whether a loaded Sample contains Facet Marking information, but the files that you have previously exported as samples from the **Facet Types** dialog, as described above, will have the facet types data.

Applying sample facet types to scans and solutions

If you're working on a non-trivial cut that requires Custom Report with specific facet types or the stone proportions, it may be difficult for automatic facet detection algorithm to apply correct facet types. In this case, you can apply types from a previously created sample.

To do so, for the current project with the already loaded model (for this document this is a sample - Cushion0_scan.mmd) in the **Facet Types** dialog press **From Sample...**
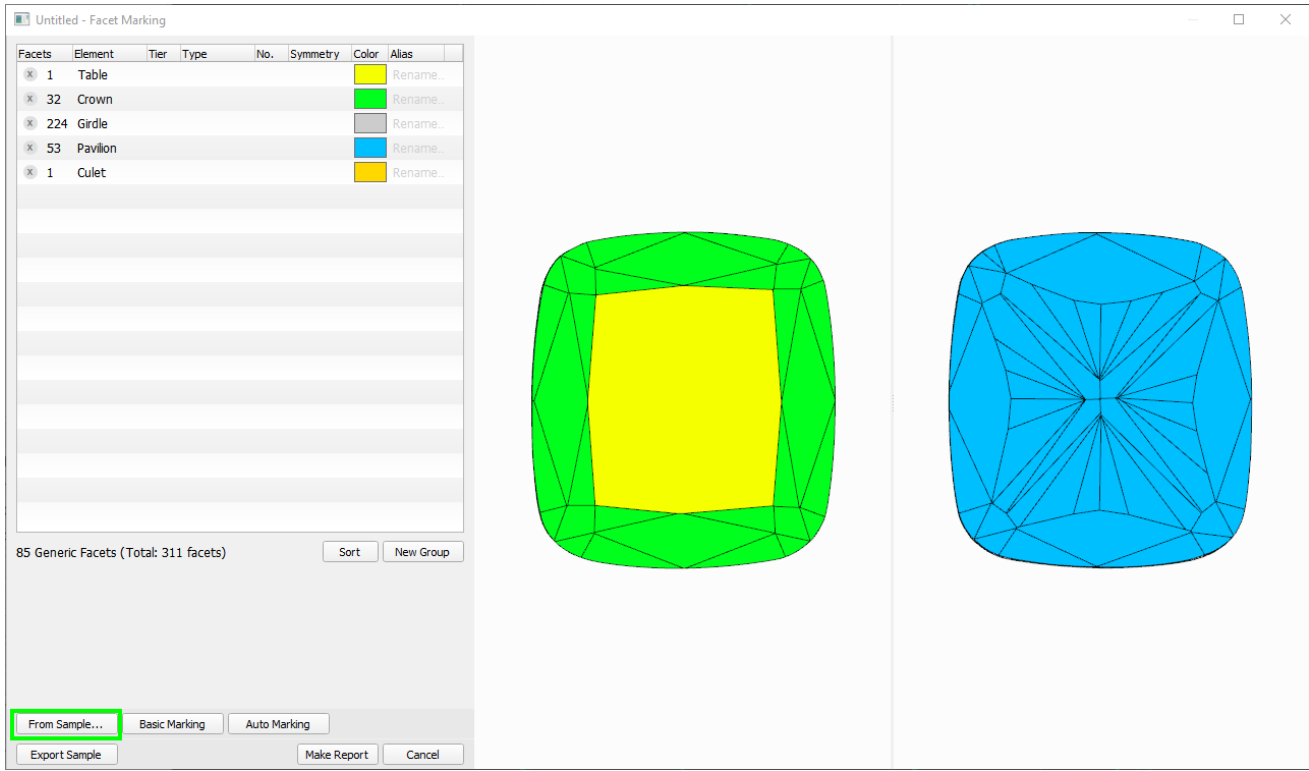
You will be presented with a sample selection and facet types preview dialog. In the dialog, press **Browse...** to specify a folder containing your marking Sample.
This folder will be remembered the next time you open the dialog:

After the folder is selected, you will be presented with a list of DMC sample file names in the folder. Please note that the samples should contain the facet types data, otherwise they can not be applied.
You can select desired samples from the list and preview the sample model and its facet types as well as automatic transfer of types to the current model:

While the input focus is in the sample list, you can use **Arrow Up** , **Arrow Down** keyboard buttons to quickly scroll through the list and preview various sample types.

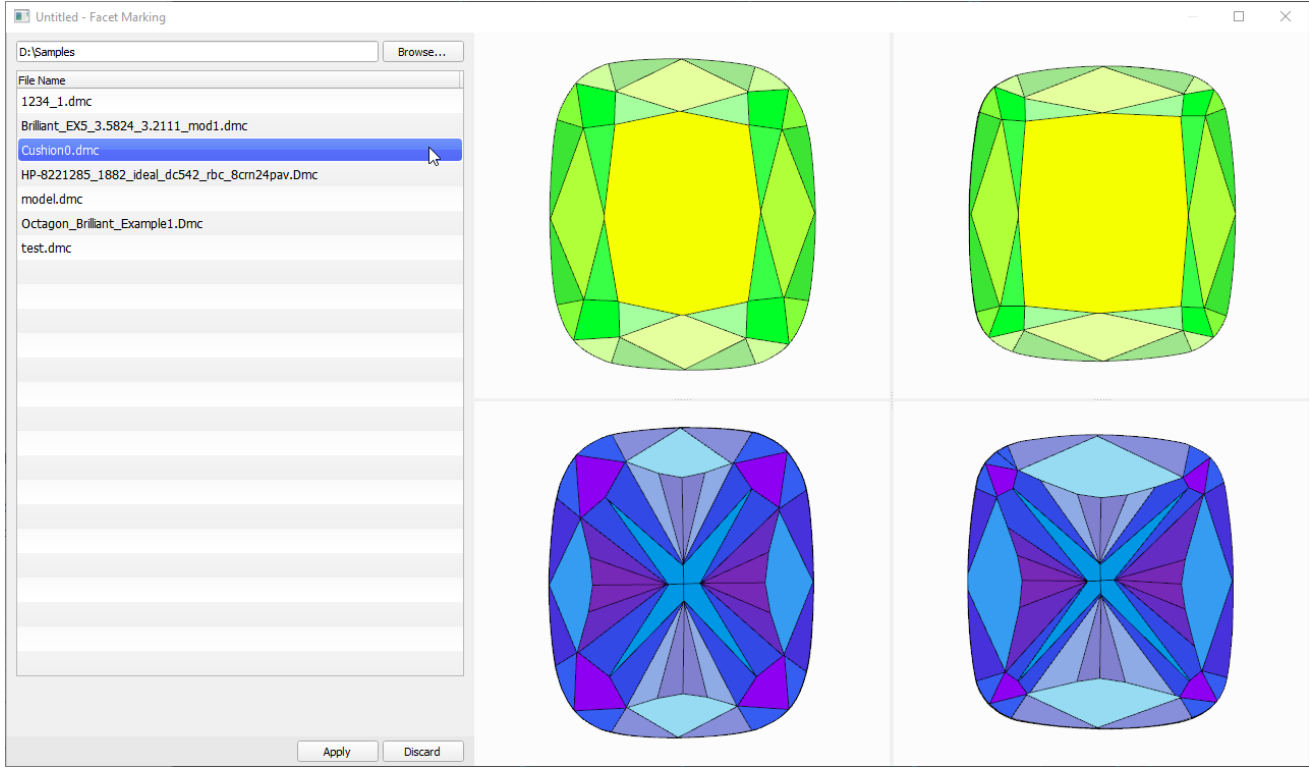If you want to apply current types and proceed with types editing and Custom Report generation, press **Apply** .

If the model is significantly different from the sample model, the automatic facet types translation may struggle to identify all of the facets that are introduced in the scanned model, especially if it is a blocking or semi-polished model and not a final polish. In case there are any inconsistencies in facet types, the operator can fix them manually as described above.

Important Note

Sample facet types are transferred to the current model only once — when the Custom Report dialog is first invoked for the current model. Once the **Facet Types** dialog has been called for this particular model, the facet types for this model are preserved the way the user left it. Whatever modifications are made in the **Facet Types** dialog, will be preserved and stored in the OXGZ file when it is saved and subsequently loaded.
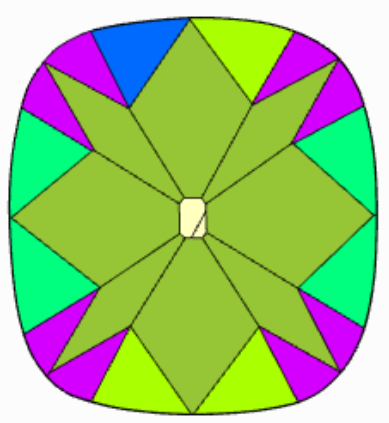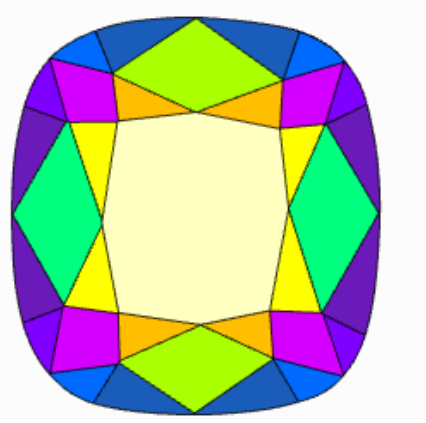
Automatic apply of facet types from sample

During scanning using a loaded sample cut, the facet types from this sample are automatically transferred to the created model. This provides an effective way of getting the correct facet types for your model and creating the **appropriate reports** .
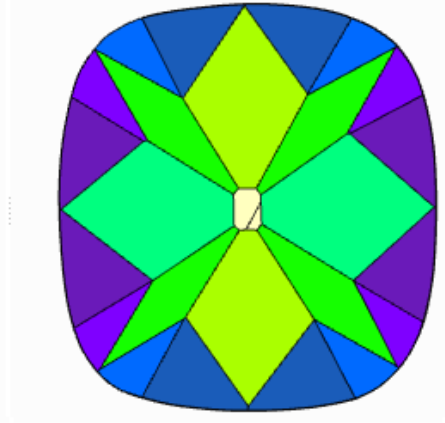
For example:

Auto types	Types of sample and resulting types (identical)
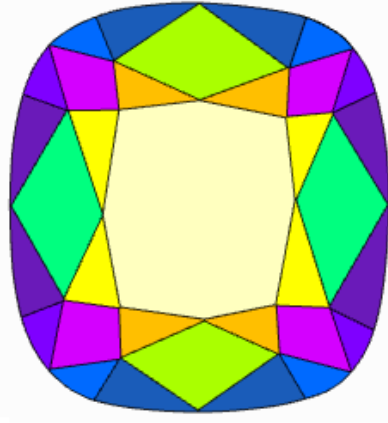
Auto types

Facets	Element	*	Tier	Type	SubType	No.	Color	Alias
x	1 Table							Rename...
x	2 Crown		Main	Width				Rename...
x	2 Crown		Main	Length				Rename...
x	4 Crown		Half	Width	1			Rename...
x	4 Crown		Half	Width	2			Rename...
x	4 Crown		Half	Length	1			Rename...
x	4 Crown		Half	Length	2			Rename...
x	4 Crown		Star	Width				Rename...
x	4 Crown		Star	Length				Rename...
x	4 Crown		Corner					Rename...
x	2(Girdle							Rename...
x	4 Pavilion	1	Main	Width				Rename...
x	3 Pavilion	1	Main	Length				Rename...
x	1 Pavilion	1	Half	Length	1			Rename...
x	8 Pavilion	1	Corner					Rename...
x	8 Pavilion	2	Main					Rename...
x	2 Culet							Rename...

Types of sample and resulting types (identical)

Facets	Element	*	Tier	Type	SubType	No.	Color	Alias
x	1 Table							Rename...
x	2 Crown		Main	Width				Rename...
x	2 Crown		Main	Length				Rename...
x	4 Crown		Half	Width	1			Rename...
x	4 Crown		Half	Width	2			Rename...
x	4 Crown		Half	Length	1			Rename...
x	4 Crown		Half	Length	2			Rename...
x	4 Crown		Star	Width				Rename...
x	4 Crown		Star	Length				Rename...
x	4 Crown		Corner					Rename...
x	1! Girdle							Rename...
x	2 Pavilion		Main	Width				Rename...
x	2 Pavilion		Main	Length				Rename...
x	4 Pavilion		Main	Diagonal				Rename...
x	4 Pavilion		Half	Width	1			Rename...
x	4 Pavilion		Half	Width	2			Rename...
x	4 Pavilion		Half	Length	2			Rename...
x	4 Pavilion	1	Half	Length	1			Rename...
x	2 Culet							Rename...

Resulting Polish Report

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

Left Table

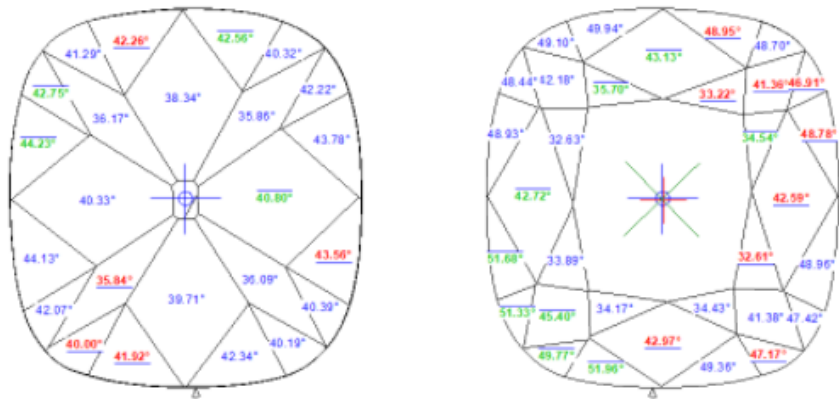| Parameter	Avg	Min	Max	Dev	1	2	3	4
Crown height, %	22.81	22.73	22.90	0.16	22.73	22.90	N/A	N/A
Crown Width height, %	22.81	22.73	22.90	0.16	22.73	22.90	–	–
Crown Length height, %	23.50	22.85	24.16	1.31	24.16	22.85	–	–
Crn Main Width height, %	22.49	22.46	22.52	0.06	22.46	22.52	–	–
Crn Main Length height, %	23.16	22.32	24.01	1.69	24.01	22.32	–	–
Crown Corner height, %	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, %	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, %	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. Corner, %	56.24	56.00	56.47	0.48	56.00	56.47	–	–
Table: Corner w.r.t. Width, %	66.17	65.93	66.42	0.49	65.93	66.42	–	–
Diameter: Corner, %	117.67	117.61	117.74	0.13	117.74	117.61	–	–
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, °	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, °	33.42	32.61	34.54	1.94	32.63	34.54	32.61	33.89
Crn Star Length angle, °	34.38	33.22	35.70	2.48	35.70	33.22	34.43	34.17
Pavilion angle, °	37.89	35.84	40.80	4.96	40.80	35.86	38.34	36.17
Pav Main Width angle, °	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, °	41.15	40.00	42.75	2.75	42.22	40.32	41.29	42.75
Pavilion 2 Main angle, °	37.89	35.84	40.80	4.96	35.86	38.34	36.17	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
G. th. Corner length	green	4.02	3.20	5.39	2.19	5.39	3.31	4.18	3.20
G. th. Width	yellow	5.94	5.74	6.18	0.44	6.04	6.18	5.74	5.80
G. th. Length	yellow	5.26	3.92	6.16	2.24	6.16	3.92	5.87	5.09

Right Table

Parameter	Avg	Min	Max	Dev	1	2	3	4
Crown height, %	22.80	22.73	22.87	0.14	22.73	22.87	N/A	N/A
Crown Width height, %	22.80	22.73	22.87	0.14	22.73	22.87	–	–
Crown Length height, %	23.49	22.85	24.14	1.29	24.14	22.85	–	–
Crn Main Width height, %	22.37	22.34	22.40	0.05	22.40	22.34	–	–
Crn Main Length height, %	22.93	21.97	23.90	1.93	23.90	21.97	–	–
Crown Corner height, %	23.52	22.44	25.45	3.00	22.81	22.44	23.37	25.45
Pavilion height, %	39.75	39.49	40.00	0.51	40.00	39.49	N/A	N/A
Pavilion Width height, %	39.75	39.49	40.00	0.51	40.00	39.49	–	–
Pavilion Length height, %	39.32	38.85	39.79	0.94	38.85	39.79	–	–
Pav Main Width height, %	39.29	38.96	39.62	0.66	39.62	38.96	–	–
Pav Main Length height, %	38.61	38.45	38.78	0.32	38.45	38.78	–	–
Pavilion Corner height, %	38.46	38.08	39.03	0.95	38.34	39.03	38.41	38.08
Table: Side, %	51.53	49.55	53.51	3.95	49.55	53.51	–	–
Table: Corner w.r.t. Corner, %	56.24	56.05	56.43	0.38	56.05	56.43	–	–
Table: Corner w.r.t. Width, %	66.19	66.00	66.37	0.37	66.00	66.37	–	–
Diameter: Corner, %	117.69	117.62	117.76	0.14	117.76	117.62	–	–
Crown Star Length, %:	49.30	47.95	50.87	2.92	–	–	–	–
Crown Star Width, %	51.27	49.25	54.07	4.82	–	–	–	–
Girdle thickness, %	6.44	6.26	6.63	0.37	–	–	–	–
Culet, %	10.62	7.31	12.04	4.73	–	–	–	–
Crown angle, °	42.72	42.67	42.78	0.11	42.78	42.67	–	–
Crown Main angle, °	42.72	42.67	42.78	0.11	42.78	42.67	N/A	N/A
Crn Main Width angle, °	42.72	42.67	42.78	0.11	42.78	42.67	–	–
Crn Main Length angle, °	43.11	43.04	43.19	0.15	43.19	43.04	–	–
Crown Corner angle, °	42.64	41.42	45.45	4.03	42.25	41.42	41.45	45.45
Crn Star Width angle, °	33.38	32.55	34.51	1.96	32.55	34.51	32.63	33.82
Crn Star Length angle, °	34.34	33.20	35.62	2.42	35.62	33.20	34.37	34.17
Pav Main Width angle, °	40.58	40.33	40.82	0.50	40.82	40.33	–	–
Pav Main Length angle, °	39.02	38.35	39.70	1.36	38.35	39.70	–	–

Girdle thickness, %	Type	Avg	Min	Max	Dev	1	2	3	4
G. th. Width	red	6.44	6.26	6.63	0.37	6.26	6.63	–	–
G. th. Length	red	6.17	6.00	6.35	0.35	6.00	6.35	–	–
G. th. Width	red	7.01	5.46	7.84	2.38	7.84	7.52	7.21	5.46
G. th. Width	green	3.86	3.59	4.14	0.54	3.85	4.14	3.88	3.59
G. th. Length	red	3.56	3.13	4.09	0.96	3.46	3.13	4.09	3.57
G. th. Corner width	green	4.85	3.95	5.23	1.28	5.17	5.23	5.06	3.95
G. th. Corner length	green	4.05	3.20	5.39	2.19	5.39	3.37	4.23	3.20
G. th. Width	yellow	5.94	5.74	6.16	0.42	6.03	6.16	5.74	5.84
G. th. Length	yellow	5.25	3.92	6.17	2.25	6.17	3.92	5.84	5.08

Facets' angles
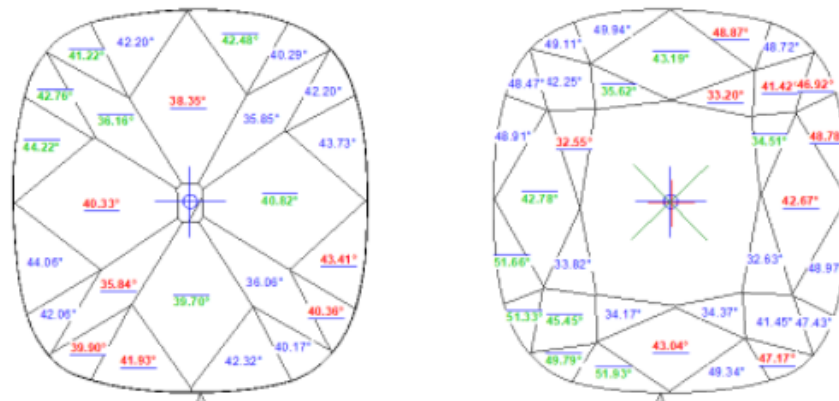
Resulting I3D Pavilion View
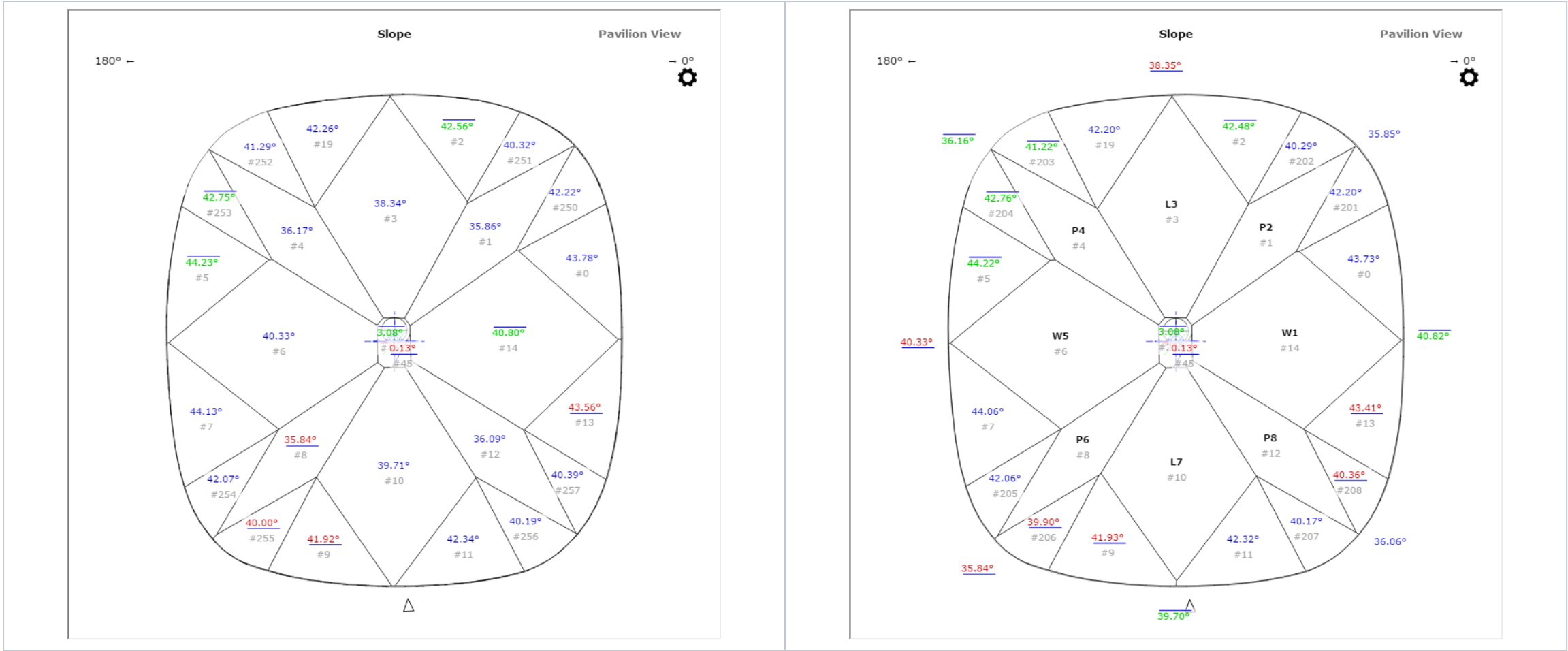
- You can *view the facet types* of your sample (DMC format). Do one of the following:
  - As you select your sample in **Cutting & Method**, it is added to the **Models** section. There click its name, then on the right panel, click **Facet Types**.
  - Open your DMC in HP Carbon and then click the **Facet Types** 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** > **Ope**n, 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 types as described above.
  - Make changes to the facet types.
  - Click **Export Sample**, specify a name for your changed version, and then click **Save**.
  - Add a new version of the sample to the system, remove the old one.

Create Custom eport

1. To create a Custom report, on the right panel click **Facet Types**. In the dialog, verify that the facet types are correct, and fix them if necessary.
2. Click the **Make Report** button. Once the document is generated, it is opened in Microsoft Word.

Among other parameters and images, the document will have two additional tables: one with Statistics data (Min, Max, Avg, Dev) for each parameter of each Facet Group. and another one with individual parameter values of every facet in every Facet Group, i.e. specific angles, azimuths, and heights of all the facets in every group:

Statistics table:

Parameter	Avg	Min	Max	Dev
Table Azimuth	88.97	88.97	88.97	0.00
Table Height (mm)	0.00	0.00	0.00	0.00
Table Height (%)	0.00	0.00	0.00	0.00
Crown Main Width Slope	31.67	31.45	31.90	0.45
Crown Main Width Azimuth	269.61	179.74	359.49	179.75
Crown Main Width Height (mm)	0.64	0.63	0.64	0.01
Crown Main Width Height (%)	0.11	0.11	0.11	0.00
Crown Main Length Slope	32.50	32.49	32.50	0.01
Crown Main Length Azimuth	180.90	90.63	271.17	180.54
Crown Main Length Height (mm)	0.64	0.63	0.66	0.03
Crown Main Length Height (%)	0.11	0.10	0.11	0.01
Crown Half Width Slope	39.35	38.38	40.48	2.10
Crown Half Width Azimuth	179.77	25.38	334.01	308.63
Crown Half Width Height (mm)	0.43	0.42	0.44	0.02
Crown Half Width Height (%)	0.07	0.07	0.07	0.00
Crown Half Length Slope	37.62	36.88	38.30	1.42
Crown Half Length Azimuth	180.22	58.92	300.00	241.08
Crown Half Length Height (mm)	0.43	0.42	0.43	0.02

Parameter	Avg	Min	Max	Dev
Pavilion 2 Half Length Height (%)	0.23	0.22	0.24	0.02
Pavilion 2 Half 2 Width Slope	34.41	33.93	34.85	0.92
Pavilion 2 Half 2 Width Azimuth	181.18	35.49	329.99	294.51
Pavilion 2 Half 2 Width Height (mm)	1.46	1.44	1.47	0.03
Pavilion 2 Half 2 Width Height (%)	0.24	0.24	0.25	0.00
Pavilion 2 Half 2 Length Slope	30.72	29.75	31.42	1.67
Pavilion 2 Half 2 Length Azimuth	158.57	72.79	285.21	212.42
Pavilion 2 Half 2 Length Height (mm)	1.06	0.99	1.12	0.13
Pavilion 2 Half 2 Length Height (%)	0.18	0.16	0.19	0.02
Pavilion 2 Half 3 Width Slope	36.05	35.85	36.16	0.31
Pavilion 2 Half 3 Width Azimuth	179.62	19.73	340.77	321.04
Pavilion 2 Half 3 Width Height (mm)	1.42	1.37	1.44	0.07
Pavilion 2 Half 3 Width Height (%)	0.24	0.23	0.24	0.01
Pavilion 2 Half 4 Width Slope	36.77	36.45	37.09	0.64
Pavilion 2 Half 4 Width Azimuth	180.12	9.38	352.15	342.77
Pavilion 2 Half 4 Width Height (mm)	1.11	1.05	1.16	0.11
Pavilion 2 Half 4 Width Height (%)	0.18	0.18	0.19	0.02
Culet Slope	0.08	0.08	0.08	0.00
Culet Azimuth	249.67	249.67	249.67	0.00

Individual values table:

Parameter					
Pavilion 2 Half 2 Length Height (%)	0.17	0.16	0.18	0.19	0.18
Pavilion 2 Half 3 Width Slope	36.12	36.16	35.85	36.07	
Pavilion 2 Half 3 Width Azimuth	19.73	161.49	196.48	340.77	
Pavilion 2 Half 3 Width Height (mm)	1.37	1.44	1.44	1.43	
Pavilion 2 Half 3 Width Height (%)	0.23	0.24	0.24	0.24	
Pavilion 2 Half 4 Width Slope	37.09	36.56	36.45	37.00	
Pavilion 2 Half 4 Width Azimuth	9.38	171.95	186.99	352.15	
Pavilion 2 Half 4 Width Height (mm)	1.05	1.14	1.16	1.07	
Pavilion 2 Half 4 Width Height (%)	0.18	0.19	0.19	0.18	
Culet Slope	0.08				
Culet Azimuth	249.67				
Culet Height (mm)	0.00				
Culet Height (%)	0.00				
Extra Knife Slope	59.83	60.84			
Extra Knife Azimuth	183.20	267.74			
Extra Knife Height (mm)	0.39	0.27			
Extra Knife Height (%)	0.06	0.05			
Extra Additional Slope	57.40				
Extra Additional Azimuth	174.11				
Extra Additional Height (mm)	0.78				
Extra Additional Height (%)	0.13				

In the tables above for a Cushion 0 Scan, you can see values for the Pavilion 2 Half 4 Width group that we created earlier in the Sample Marking and which was automatically translated to the Scan model.

Facet types coloring

This page describes general principles of how to work with the facet types and Custom report. As the facet types functionality is under constant improvement, some colors presented on the figures in this article may be out-of-date. You can find the release 4.7.9 coloring description in the video:

Your browser does not support the HTML5 video element

Demo video of Custom report and facet types

There is a demo video that illustrates the above points and works with the Custom report on the Cushion sample:

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