

# Models management

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## Overview

HP Carbon is designed to work with multiple models simultaneously in a transparent and intuitive manner. The working models are listed on the **Plans & Scans** panel.

Allocation solutions												
Plans & Scans												
<div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div>			<div>Compare</div>		<div>Standard Report</div>							
#			Price	Cutting	Mass	Yield	Clarity	Col	Sym-O	Gr	Cut	Sym
<input type="checkbox"/>	Shadow scan				0.8580				+5.98	VG	VG	EX
<input checked="" type="checkbox"/>	Crown Reflect scan				0.8572				.90	VG	VG	EX
<input type="checkbox"/>	8	<div></div>	3825\$	Brilliant	0.8519	99.16%	VS1	H	+6.67	EX	EX	EX
<input checked="" type="checkbox"/>	5	<div></div>	3825\$	Brilliant	0.8504	99.16%	VS1	H	+4.05	EX	EX	EX
<input type="checkbox"/>	9	<div></div>	3825\$	Brilliant	0.8502	99.16%	VS1	H	+4.61	EX	EX	EX
<input type="checkbox"/>	10	<div></div>	3825\$	Brilliant	0.8500	99.16%	VS1	H	+5.66	EX	EX	EX
<input type="checkbox"/>	4	<div></div>	3780\$	Brilliant	0.8480	98.00%	VS1	H	+6.92	EX	EX	EX
<input type="checkbox"/>	6	<div></div>	3780\$	Brilliant	0.8455	98.00%	VS1	H	+8.07	EX	EX	EX
<input type="checkbox"/>	7	<div></div>	3780\$	Brilliant	0.8452	98.00%	VS1	H	+8.17	EX	EX	EX
<input type="checkbox"/>	11	<div></div>	3780\$	Brilliant	0.8424	98.00%	VS1	H	+7.73	EX	EX	EX
<input type="checkbox"/>	3	<div></div>	3690\$	Brilliant	0.8274	95.66%	VS1	H	+6.58	EX	EX	EX
<input type="checkbox"/>	2	<div></div>	3690\$	Brilliant	0.8260	95.66%	VS1	H	+8.22	EX	EX	EX
<input type="checkbox"/>	1	<div></div>	3690\$	Brilliant	0.8242	95.66%	VS1	H	+9.15	EX	EX	EX

The models are named automatically in the following manner:

Name	Origin	Possible number of instances per project
Shadow scan	Model produced by <a href="#">shadow scanning</a> .	At most one, since performing a new shadow scan erases the existing models.
Pavilion Reflect scan Crown Reflect scan	Models produced by <a href="#">reflect scanning</a> .	Any number.
Edited model	Model produced by <a href="#">manual editing</a> .	Any number.
Refined scan	Name used by older versions of HPOxygen instead of modern <b>Reflect scan</b> and <b>Edited model</b> .	Any number.

<b>Imported model</b>	Model imported from a *.oxgz file (to do so, press <b>File Import Model</b> in the top menu), or opened from a *.dmc, *.gem, or *.mmd file.	Any number.
<b>Sample</b>	Model imported as a sample (to do so, press <b>Load Sample</b> on the <b>Scan &amp; Build</b> panel).	At most one, since loading a new sample unloads the existing one.
<number>	Recut solution.	Any number.



A model can't be renamed. When preparing a [polish report](#), though, it is possible to enter an alternative name for a model to be used within the scope of that report.

The list contains the following data for each model:

Name	Title	Meaning
<input checked="" type="checkbox"/>	-	A checkbox indicating whether the solution is selected (see <a href="#">Selecting</a> below).
#	Model Name /Solution Number	Model name (assigned automatically); in case of recut solutions, just the number.
-	Label Color	Color label. Applicable to solutions only.
-	Clarity Status	Clarity status marker. Possible values:  - not set (default state),  - <b>Draft</b> ,  - <b>Precise</b> .
Price	Price	Estimated price according to the price list. Applicable to solutions only.
Cutting	Cutting	Cutting type. Applicable to solutions only.
Mass	Mass	Mass of the stone.
Yield	Yield	Yield (percentage of mass of the original stone retained in the recut). Applicable to solutions only.
Clarity	Clarity	Estimated clarity grade. Applicable to solutions only.
Col	Diamond color (DZ)	Estimated color. See <a href="#">DZ Color Estimate</a> for more details.
Sym-O	Optical Symmetry	Estimated optical symmetry. When turned on, requires the recalculation of optical symmetry for all models upon opening a file, which is a computationally demanding procedure and may cause perceptible delay. By default, this option is off, and the column is displayed empty.
Gr	Grade by GIA Facetware	Estimated overall grade.
Cut	Cut Grade by GIA Facetware	Estimated cut grade.
Sym	Symmetry Grade by GIA Facetware	Estimated symmetry grade.


Clicking at any column header sorts the list by the corresponding column value. Note, however, that the scans are still listed separately before the solutions, regardless of the sort order.

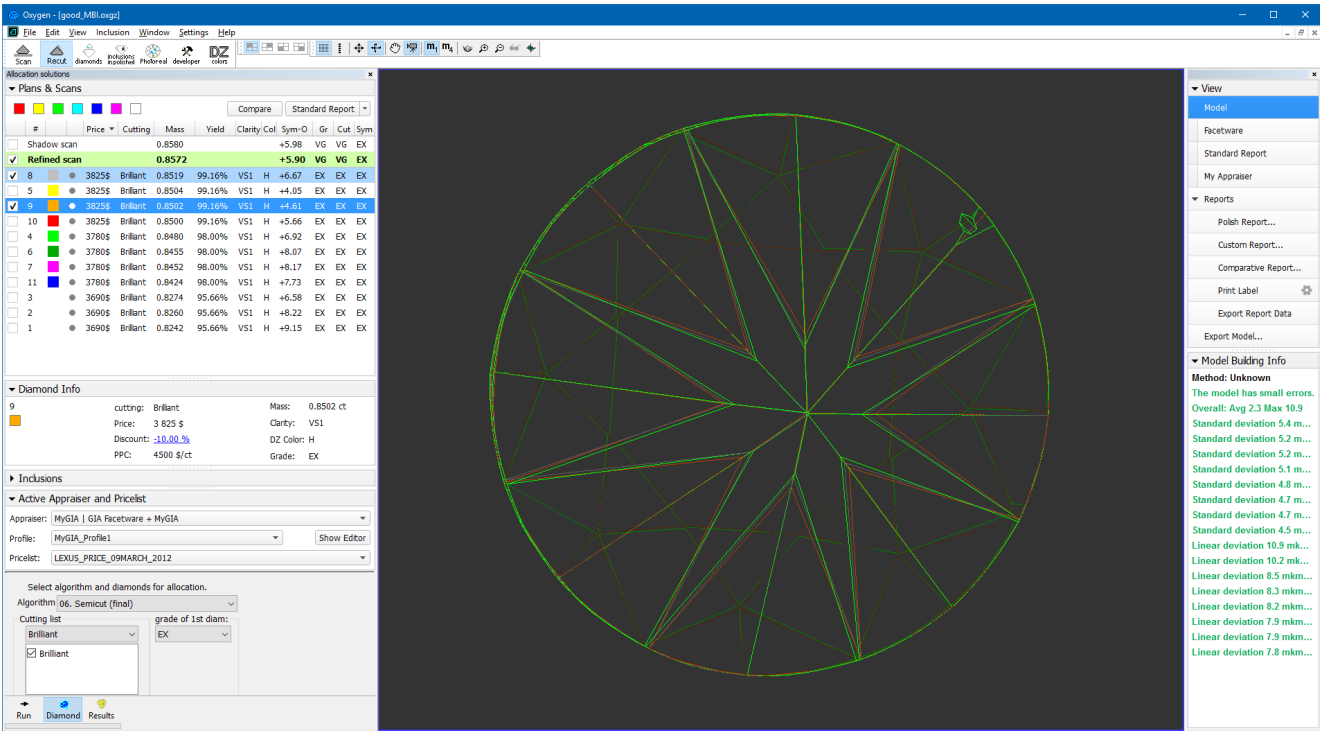
The **Scan & Build** panel also contains the list of working models with the same basic functionality. Note that it contains just the scans, and not the recut solutions. The columns specific to solutions are also hidden.



# Selecting models

Any model can be selected for viewing. Moreover, any combination of models may be selected simultaneously and viewed together in different colors (assigned automatically). For more details on the selection interface, see below.

 Note that viewing selected models works only in Model view mode. In Photo and Scanner view modes, only the Main Scan is displayed.

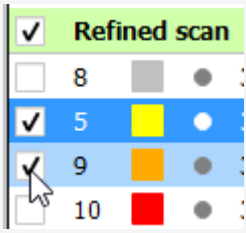


The selection persists when the user switches between the panels **Plans & Scans** and **Scan & Build**.

When a recut solution is selected, the Main Scan is selected too (unless the user deselects it explicitly by unchecking its check box).

The last selected model is designated *current* model and marked with a dark blue background.

The selection behavior is summarized in the table below:

Action	Scan (including the Main Scan)	Solution
Click	If this is the current model: does nothing.  Otherwise: selects it, makes it current, and deselects the rest.	If this is the current model: does nothing.  Otherwise: selects it, makes it current, selects also the Main Scan, and deselects the rest.
Ctrl + Click or Click on the check box		If this is the current model: does nothing.  Otherwise: toggles selection of this model, not resetting the current and not affecting the rest.
Shift + Click		If this is the current model: does nothing.  Otherwise: selects all models in the list between this and the current model (inclusive), and makes this model current.

<b>Right click</b>	If this model is selected: opens the context menu for it (see below).  Otherwise: selects it, makes it current, deselects the rest, and opens the context menu.	If this model is selected: opens the context menu for it.  Otherwise: selects it, makes it current, selects also the Main Scan, deselects the rest, and opens the context menu.
<b>Arrow keys (Up / Down)</b>	Selects the model one step up or down in the list from the current one, makes it current, and deselects the rest.	Selects the model one step up or down in the list from the current one, makes it current, selects also the Main Scan, and deselects the rest.

Any model except the Main Scan (see above) can be deleted from the list by pressing **Delete** on the keyboard or selecting **Delete model** in the context menu.

## Context menu

Right-clicking on a model in the list causes the context menu to appear.

When a single scan is selected, the menu contains the following available actions:

<div><div>Main Scan</div><div>Set as Main Scan</div><div>Delete</div><div>Delete Refined scan</div><div>Diamond Color</div><div>Estimate color grade for Refined scan, 0.4242 ct</div><div>Optical Symmetry</div><div>Calculate Optical Symmetry</div><div>Export Model</div><div>Export Model...</div></div>	<table><tr><td><b>Main Scan</b></td><td>Makes this scan the Main Scan (see above).</td></tr><tr><td><b>Delete</b></td><td>Deletes the selected scan.</td></tr><tr><td><b>Diamond Color</b></td><td>Initiates the color estimation procedure (see <a href="#">DZ Color Estimate</a>).</td></tr><tr><td><b>Optical Symmetry</b></td><td>Toggles the optical symmetry calculation for all existing and new models.</td></tr><tr><td><b>Export Model</b></td><td>Exports the model in a user-selected format (see <a href="#">Export</a>).</td></tr></table>	<b>Main Scan</b>	Makes this scan the Main Scan (see above).	<b>Delete</b>	Deletes the selected scan.	<b>Diamond Color</b>	Initiates the color estimation procedure (see <a href="#">DZ Color Estimate</a> ).	<b>Optical Symmetry</b>	Toggles the optical symmetry calculation for all existing and new models.	<b>Export Model</b>	Exports the model in a user-selected format (see <a href="#">Export</a> ).
<b>Main Scan</b>	Makes this scan the Main Scan (see above).										
<b>Delete</b>	Deletes the selected scan.										
<b>Diamond Color</b>	Initiates the color estimation procedure (see <a href="#">DZ Color Estimate</a> ).										
<b>Optical Symmetry</b>	Toggles the optical symmetry calculation for all existing and new models.										
<b>Export Model</b>	Exports the model in a user-selected format (see <a href="#">Export</a> ).										

When a single solution is selected (possibly together with the Main Scan), the menu contains the following available actions:

	<b>Label</b>	Select the color label for this solution. Initially, the solutions obtained by Smart Recut (see <a href="#">Smart Recut</a> for details) are assigned color labels in accordance with the corresponding presets. In all other methods, the solution labels are initially left blank.
	<b>Clarity precision</b>	Sets the clarity precision to <b>Draft</b> or <b>Precise</b> (initially set to neither).
	<b>Duplicate</b>	Create a duplicate of this solution and add it to the list.
	<b>Delete</b>	Deletes the selected solution.
	<b>Diamond Color</b>	Initiates the color estimation procedure (see <a href="#">DZ Color Estimate</a> ).
	<b>Optical Symmetry</b>	Toggles the optical symmetry calculation for all existing and new models.

<div>Label</div> <div> </div> <div>Clarity precision</div> <div> <input checked="" type="radio"/> Draft  <input type="radio"/> Precise         </div> <div>Duplicate</div> <div>Create copy of 9</div> <div>Delete</div> <div>Delete solution 9</div> <div>Diamond Color</div> <div>Estimate color grade for Plan 9, 4.2493 ct</div> <div>Optical Symmetry</div> <div>Calculate Optical Symmetry</div> <div>Export Model</div> <div>Export Model...</div>	<div>Export Model</div> <div>Exports the model in a user-selected format (see <a href="#">Export</a>).</div>
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When multiple scans are selected, the set of available actions narrows down to **Delete** and **Optical symmetry**.

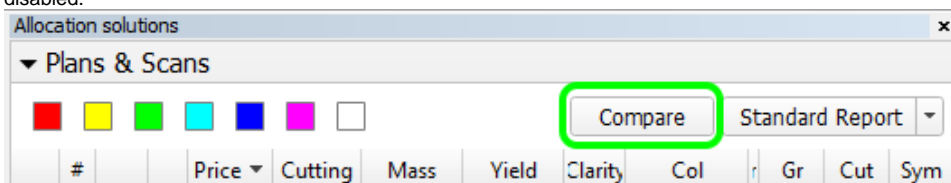
When multiple models including some solution(s) are selected, the available actions are **Label**, **Delete**, and **Optical symmetry**, with the implication that **Label** applies only to the solutions and not to the scans.

Note also that the Main Scan can not be deleted even when deleting multiple selections in which it is included.

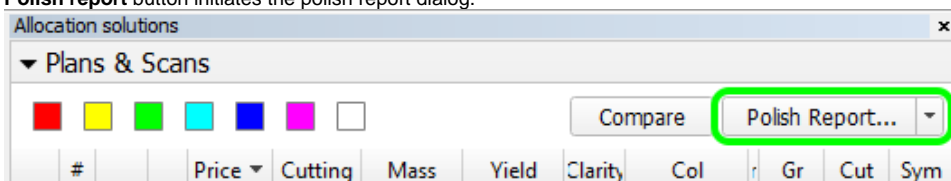
## Top buttons

The top part of the **Plans & Scans** panel contains two buttons that act on the selected model(s):

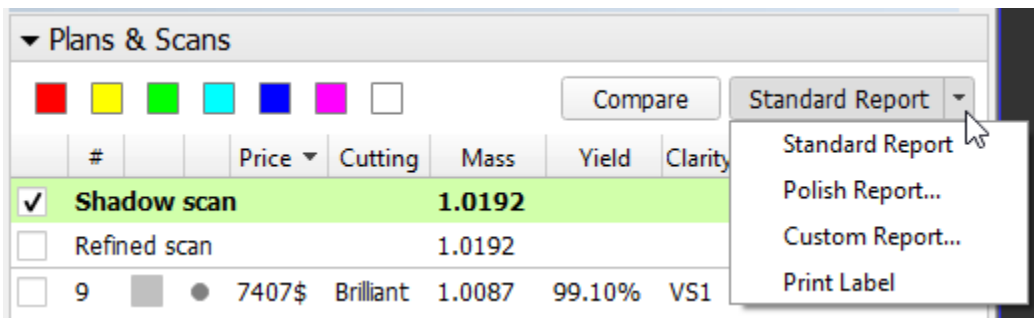
- **Compare** button initiates the comparative report (see [Comparative report](#) for details) if two models are selected. Otherwise, the button is disabled.



- **Polish report** button initiates the polish report dialog.



Note that the latter button is multi-optional. The dropdown list to the right provides a selection of options: **Standard Report**, **Polish Report**, **Custom Report**, and **Print Label**. Once selected, the option persists until the program is closed or a new model is opened.



## Model Building Info

When a scan is selected, the **Model Building Info** panel is displayed to the right (see [Model Building Info \(MBI\)](#) for more details).

Model Building Info

**Method: Emerald**

**The model has big errors.**

**Overall: Avg 4.5 Max 29.7**

Standard deviation 25.7 mkm on edge 74

Standard deviation 24.5 mkm on edge 67

Standard deviation 23.3 mkm on edge 130

Standard deviation 22.0 mkm on edge 128

Standard deviation 20.6 mkm on edge 75

Standard deviation 18.6 mkm on edge 65

Standard deviation 13.6 mkm on edge 336

Standard deviation 12.0 mkm on edge 270

Linear deviation 29.7 mkm on edge 74

Linear deviation 28.7 mkm on edge 130

Linear deviation 28.6 mkm on edge 128

Linear deviation 27.3 mkm on edge 67

Linear deviation 25.0 mkm on edge 75

Linear deviation 23.3 mkm on edge 65

Linear deviation 15.1 mkm on edge 64

Linear deviation 14.9 mkm on edge 336

☒ Sync Stone with Model

The building info describes how well the model matches the scanned contours. It contains the header referring to the overall model quality, followed by the lines that describe individual problem spots. Lines are color-coded according to the severity of the errors they signify. Each of these lines is a link; pressing such a link while viewing the model in the Photo mode would orient the model so as to display the corresponding contour. The matching photo is also shown. If **Sync stone with model** is checked, then the actual stone would be also oriented the same way, which would position the problem-causing edge against the door. This is useful for manual cleaning of the stone, in case if the deviation was caused by dirt.

Scanned models prepared in the older versions of HPOxygen may lack the Model Building Info.

## Comparing models

Any two models can be selected for comparison (see [Comparative Report](#)). If one recut solution is selected, it would be compared against the Main Scan (which is automatically selected as well in this case). If two solutions are selected, they would be compared against each other, even though the Main Scan is selected too.

The comparison behavior is summarized in the table below:

Models selected	Action of Comparative report
One	Not available.
Two	Compares the two models.
Three	If one of the three models is the Main Scan: compares the other two. Otherwise: not available.
Four or more	Not available.