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.

Alloc	ation	soluti	ons										×
▼	Plans	& 9	Scar	ns									
							Co	mpare	•	Standa	rd Re	eport	•
	#			Price *	Cutting	Mass	Yield	Clarity	Col	Sym-O	Gr	Cut	Sym
	Sha	dow	scar	ı		0.8580				+5.98	VG	VG	EX
√	Cro	wn I	Refl	ect scan	1	0.8572				.90	VG	VG	EX
	8		٠	3825\$	Brilliant	0.8519	99.16%	VS1	Н	+6.67	EX	EX	EX
✓	5		•	3825\$	Brilliant	0.8504	99.16%	VS1	Н	+4.05	EX	EX	EX
	9		٠	3825\$	Brilliant	0.8502	99.16%	VS1	Н	+4.61	EX	EX	EX
	10		٠	3825\$	Brilliant	0.8500	99.16%	VS1	Η	+5.66	EX	EX	EX
	4		٠	3780\$	Brilliant	0.8480	98.00%	VS1	Н	+6.92	EX	EX	EX
	6		٠	3780\$	Brilliant	0.8455	98.00%	VS1	Н	+8.07	EX	EX	EX
	7		٠	3780\$	Brilliant	0.8452	98.00%	VS1	Н	+8.17	EX	EX	EX
	11		٠	3780\$	Brilliant	0.8424	98.00%	VS1	Н	+7.73	EX	EX	EX
	3		٠	3690\$	Brilliant	0.8274	95.66%	VS1	Н	+6.58	EX	EX	EX
	2		٠	3690\$	Brilliant	0.8260	95.66%	VS1	Н	+8.22	EX	EX	EX
	1		٠	3690\$	Brilliant	0.8242	95.66%	VS1	Н	+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 shadow scanning.	At most one, since performing a new shadow scan erases the existing models.		
Pavilion Reflect scan	Madela produced by reflect according	Any number		
Crown Reflect scan	Models produced by reflect scanning.	Any number.		
Edited model	Model produced by manual editing.	Any number.		
Refined scan	Name used by older versions of HPOxygen instead of modern Reflect scan and Edited model.	Any number.		
Imported model	Model imported from a *.oxgz file (to do so, press File Import Model in the top menu), or opened from a *.dmc, *.gem, or *.mmd file.	Any number.		
Sample	Model imported as a sample (to do so, press Load Sample on the Scan & Build panel).	At most one, since loading a new sample unloads the existing one.		
<number></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.

Name	Title	Meaning
✓	-	A checkbox indicating whether the solution is selected (see Selecting 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), - Draft, - Precise.
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 DZ Color Estimate 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
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.

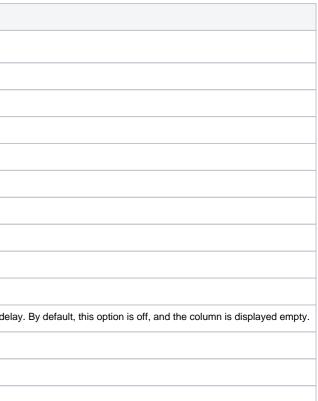
The Scan & Build panel also contains the list of working models with the same basic functionality. Note that it contains just the scans, and not the recut solutions. The columns specific to solutions are also hidden.

Model	Mass Sym-O Gr Cut Sym
Shadow scan	0.4254
Refined scan	0.4242
Edited model	0.4253
Edited model	0.4354
Scan & Build	
Edit main scan: 🛛 🗱	
Cuttings:	
Outtings: Brilliant	O Princess
-	 Princess AnyCut
 Brilliant 	0
 Brilliant P-O-M-H-R 	 AnyCut
P-O-M-H-R StepCut	 AnyCut Asian Star

Main scan

One of the scans is considered the Main Scan. Its name in the list is emphasized with bold font and (only when selected together with another model) green background.

All manual edits and reflect scans take the current Main Scan model as the initial approximation and produce new Edited models or Reflect scans, correspondingly.



Recut solutions search uses the current Main Scan model as the original.

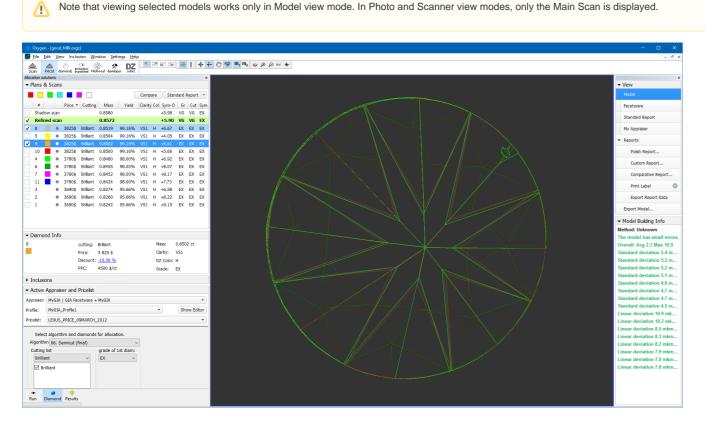
Any scan (except Sample, see below) can be made the Main Scan by right-clicking it in the list and selecting Set as Main Scan:

•	Pl	ans	& 9	Sca	ns											▼ F	Plans	& 9	Scan	ns								
									Comp	are	Stand	lard I	Repor	t 💌									Comp	are	Stand	ard Re	eport	t 💌
		#			Ρ	rice	 Cutting 	Mass	Yield	Clarity	Col m	Gr	Cut	Sym			#			Price *	Cutting	Mass	Yield	Clarit	y Col m	Gr	Cut	Sym
✓		Sha	dow	sca	n	Mai	n Scan									✓	Sha	dov	v sca	an		0.8301						
]	Ref	fined	l sc	an		Set as Main	Scan								✓	Refi	ned	scan			0.8301						
]	5		•	3	Del		15		VS1	н	EX	EX	EX			5		٠	3690\$	Brilliant	0.8195	98.79%	VS1	Н	EX	EX	EX
]	8		•	3		Delete Shad	low scan		VS1	н	EX	EX	EX			8		٠	3645\$	Brilliant	0.8180	97.58%	VS1	н	EX	EX	EX
]	3		•	з	Diar	mond Color	ion sean		VS1	н	EX	EX	EX			3		٠	3645\$	Brilliant	0.8180	97.58%	VS1	Н	EX	EX	EX
]	2		•	3	Undi	Estimate co	lor grade fo	r	VS1	н	EX	EX	EX	\rightarrow		2		٠	3645\$	Brilliant	0.8180	97.58%	VS1	н	EX	EX	EX
]	9		•	3		Shadow sca			VS1	н	EX	EX	EX			9		٠	3645\$	Brilliant	0.8180	97.58%	VS1	н	EX	EX	EX
]	7		•	3	Opt	tical Symmetr	у		VS1	н	EX	EX	EX			7		٠	3645\$	Brilliant	0.8180	97.58%	VS1	Н	EX	EX	EX
]	4		•	3		Calculate Op	otical Symm	etry	VS1	н	EX	EX	EX			4		٠	3645\$	Brilliant	0.8180	97.58%	VS1	Н	EX	EX	EX
]	6		•	з	Exp	ort Model			VS1	н	EX	EX	EX			6		٠	3645\$	Brilliant	0.8180	97.58%	VS1	н	EX	EX	EX
]	1		•	З		Export Mod	el		VS1	Н	EX	EX	EX			1		٠	3510\$	Brilliant	0.7884	93.97%	VS1	н	EX	EX	EX

(i) A sample is a standard model to refine your stone against (see Shadow Scan). It can be loaded from a *. dmc file on the Scan & Build panel. Once loaded, it remains in your list of models under the name Sample.

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.



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
--	--------	--------------------------------	----------

Otherwise: selects it, makes it current, and deselects the rest. Otherwise: selects it, makes it current, selects also the Main Scan, and deselect thr + Click Refined scan If the current model: does nothing. Start + Click Start + Click Start + Click Image: Select + Click Start + Click Start + Click Image: Select + Click Start + Click Start + Click Image: Select + Click Start + Click Start + Click Image: Select + Click Start + Click Start + Click Image: Select + Click Start + Click Start + Click Image: Select + Click Start + Click Start + Click Image: Select + Click Start + Click Start + Click Image: Select + Click Start + Click Start + Click Image: Select + Click Start + Click Start + Click Image: Select + Click Start + Click + Start						
If this is the current model: does nothing. Silek 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. If this is the current model: does nothing. Otherwise: toggles selection of this model, not resetting the current and not affecting the rest. 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. Right click If this model is selected: opens the context menu for it (see below). If this model is selected: opens the context menu for it (see below). If this model is selected: opens the context menu for it (see below). If this model is selected: opens the context menu for it (see below). If this model is selected: opens the context menu for it (see below). If this model is selected: opens the context menu for it (see below). If this model is selected: opens the context menu for it.	Click		If this is the current model: does nothing.	If this is the current model: does nothing.		
r Refined scan Refined scan Otherwise: toggles selection of this model, not resetting the current and not affecting the rest. Start + Click Start + Click If this model is selected: opens the context menu for it (see below). Itight click If this model is selected: opens the context menu for it (see below).			Otherwise: selects it, makes it current, and deselects the rest.	Otherwise: selects it, makes it current, selects also the Main Scan, and deselects		
Shift + Click It is model is selected: opens the context menu for it (see below). It is model is selected: opens the context menu for it (see below). It is model is selected: opens the context menu for it (see below). It is model is selected: opens the context menu for it (see below). It is model is selected: opens the context menu for it (see below).	Ctrl + Click	✓ Refined scan	If this	is the current model: does nothing.		
Image: Displace in this	or Click on the check box		Otherwise: toggles selection of	this model, not resetting the current and not affecting the rest.		
Image: Displace in this		✓ 5 ●				
Image:						
Constrained Constrained <thconstrained< th=""> <thconstrained< th=""></thconstrained<></thconstrained<>	10					
Light click If this model is selected: opens the context menu for it (see below). If this model is selected: opens the context menu for it.	Shift + Click		If this	is the current model: does nothing.		
			Otherwise: selects all models in the list betw	veen this and the current model (inclusive), and makes this model current.		
Otherwise: selects it, makes it current, deselects the rest, and opens the context menu. Otherwise: selects it, makes it current, selects also the Main Scan, deselects the	Right click		If this model is selected: opens the context menu for it (see below).	If this model is selected: opens the context menu for it.		
			Otherwise: selects it, makes it current, deselects the rest, and opens the context menu.	Otherwise: selects it, makes it current, selects also the Main Scan, deselects the		
	Arrow keys (Up / Down)		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,			

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:

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

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

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

cts the rest.

presets. In all other methods, the solution labels are initially left blank.

Label	Export Model	Exports the model in a user-selected format (see Export).
Clarity precision		
Draft		
○ Precise		
Duplicate		
Create copy of 9		
Delete		
Delete solution 9		
Diamond Color		
Estimate color grade for Plan 9, 4.2493 ct		
Optical Symmetry		
Calculate Optical Symmetry		
Export Model		
Export Model		

When multiple scans are selected, the set of available actions narrows down to Delete and Optical symmetry.

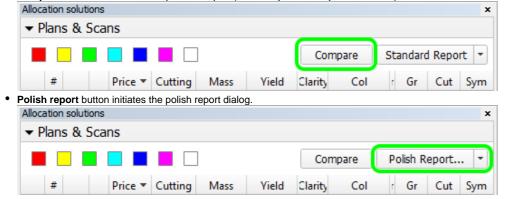
When multiple models including some solution(s) are selected, the available actions are Label, Delete, and Optical symmetry, with the implication that Label applies only to the solutions and not to the scans.

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.



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.

▼ P	lans	& Sc	ans	;					
							Comp	oare	Standard Report 🝷
	#			Price *	Cutting	Mass	Yield	Clarity	Standard Report 场
✓	Sha	dow	scai	ı		1.0192			Polish Report
	Refir	ned so	an			1.0192			Custom Report
	9		•	7407\$	Brilliant	1.0087	99.10%	VS1	Print Label

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.
Тwo	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.