

Using SweetLine

On this page:

- 1 [Overview](#)
- 2 [For Round Brilliant, Oval](#)
 - 2.1 [Parameter Usage](#)
 - 2.2 [Overview Video](#)
 - 2.3 [Example - Rough Stone](#)
 - 2.4 [Example - Semipolished Stone](#)
- 3 [For AnyCut](#)
 - 3.1 [Specifying Unique SweetLine Slope for Client Cuttings](#)

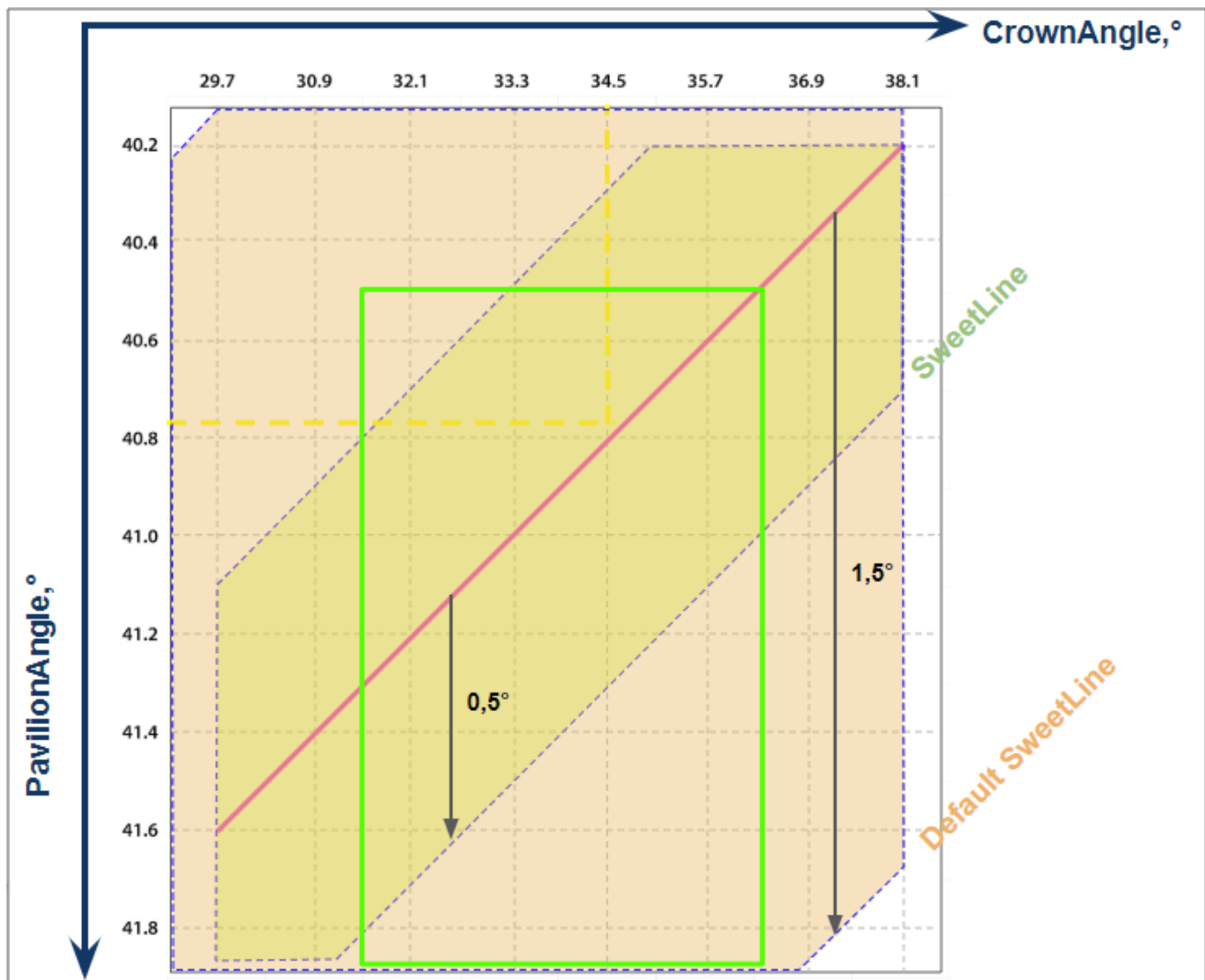
Overview

The *SweetLine* parameter description, information about its calculation, and presence in appraisers and reports is presented on the [SweetLine](#) page.

For Round Brilliant, Oval

Parameter Usage

Using the SweetLine parameter, you can achieve better optical performance for the solutions. Smaller values of SweetLine would cut out a stripe from the rectangle, potentially enabling the search for favorable solutions over a wide range of parameters. Previously this area could only be covered by a series of smaller rectangles, that is, by running the search multiple times with extremely tightened CrownAngle and PavilionAngle, each time covering a small portion of the stripe. Sweetline offers a less time-consuming alternative to this approach.



The default EX boundaries for SweetLine is from -1.5 to 1.5. Boundaries both for EX and for all other grades can be changed and saved in editable profiles.

Appraiser Editor

GIA Facetware + MyRound

Profile: Default (read only)

Show Presets

Cut
Symmetry

Parameter	Grade	Value	[FR]	[GD]	[VG]	[EX]	EX]	VG]	GD]	FR]
Table	EX	55.598	10	46,5	49,5	51,5	62,5	66,5	69,5	99
CrownAngle	EX	36.433	10	21,75	26,25	31,25	36,75	38,75	40,25	90
PavilionAngle	EX	40.609	10	38,7	39,7	40,5	41,9	42,5	43,1	90
SweetLine	EX	0.288	-9	-6	-3	-1,5	1,5	3	6	9
StarLength	Poor		10	32,5	37,5	42,5	57,5	72,5	77,5	90
LowerGirdleLength	EX	79.147	50	57,5	62,5	75	80	92,5	97,5	99
GirdleBezel	EX	3.892	0	1,25	1,75	2,25	4,75	5,75	7,25	20
GirdleValley	EX	1.926	0	0	0	0,75	2,94	4,14	6,14	20
CrownHeight	EX	16.430	5	10,5	12	12,3	17	17,5	18,5	40
TotalHeight	EX	63.030	10	54	57	58	64,5	66	70	90
Culet	VG	0.457	0	0	0	0	0,2	1,5	2	20
CrownPainting	EX	0.636	-9	-6	-3	-2,5	2,5	5	7	20
PavilionPainting	EX	0.035	-9	-5	-3	-2,5	2,5	4	6	20
SumPainting	EX	0.671	-9	-6	-5	-3,5	5	8	10	20
GirdleVerticality	EX	0.116	-20	-1,5	-1	-0,5	0,5	1	1,5	20
HeightGirdleExtraFacet	FR	9.774	0	0	0	0	2	4	8	20
GirdleCrownExtraFacets	GD	3.000	0	0	0	0	0	2	4	20
GirdlePavilionExtraFacets	EX	1.000	0	0	0	0	3	4	6	20
GirdleExtraFacets	EX	1.000	0	0	0	0	2	4	8	20

Import...
Export

While comparing the Smart Recut solutions making use of SweetLine, keep in mind the following features:

- Changing the SweetLine parameter does not necessarily affect the solutions. If a solution found with default SweetLine happened to fall close enough to the optimal line, then the search with lowered SweetLine might end up in the same solution.
- The MaxMass preset takes into account neither the CrownAngle and PavilionAngle nor SweetLine limitations.

Overview Video

Video SweetLine - Time-Saving Approach to Getting Better Optical Performance			
Published:	2019, October 1	Last Updated:	2019, December 5
			v.2.0

Your browser does not support the HTML5 video element

Video summary:

- CrownAngle = 34.5 and PavilionAngle = 40.75 named *Tolkowsky Point* provide the best optical performance
- Brilliants belonging to axis going through Tolkowsky Point with the negative slope 1:6 also provide excellent optical performance
- The SweetLine parameter sticks solutions to this axis
- There are two ways of using SweetLine: via SweetLine profile or using your own editable profile with SweetLine. CrownAngle and PavilionAngle set to your needs

Video keywords: SweetLine, SweetLine axis, optical performance, CrownAngle, PavilionAngle

Published in:	Release Notes	2019-10-23 - HPOxygen Server 5.3.42
	Documentation	Using SweetLine
	Playlists	All Videos
	Also	As Separate Page Specification

Example - Rough Stone

Here is an example of rough stone ([0041_4.90ct.Mmd_modern.oxg](#)) with two sets of Smart Recut solutions. Note how the tightened setting of SweetLine leads to the improved visual appearance (the "hearts and arrows" pattern) and greater values of light return.

Allocation solutions

Plans & Scans

Compare Standard Report

Imported model 4.8963

	Star	Grade	Weight	Price	Mass	Alloc	Yield	Clarity	Sym-O	Gr	Cut	Sym	Pro
1	★	Brilliant 17582\$	1.7662	35.95%	VS1	H	+8.05	EX	EX	EX	EX	EX	ModernCut
12	★	Brilliant 17982\$	1.8055	SR 36.76%	VS1	H	+7.56	EX	EX	EX	EX	EX	ModernCut
13	★	Brilliant 17982\$	1.8074	SR 36.76%	VS1	H	+7.10	EX	EX	EX	EX	EX	ModernCut
15	★	Brilliant 17982\$	1.8018	SR 36.76%	VS1	H	+7.93	EX	EX	EX	EX	EX	ModernCut
16	★	Brilliant 17982\$	1.8039	SR 36.76%	VS1	H	+7.74	EX	EX	EX	EX	EX	ModernCut
17	★	Brilliant 17982\$	1.8082	SR 36.76%	VS1	H	+6.73	EX	EX	EX	EX	EX	ModernCut
18	★	Brilliant 17882\$	1.7958	SR 36.56%	VS1	H	+8.22	EX	EX	EX	EX	EX	ModernCut
19	★	Brilliant 16073\$	1.8104	SR 36.97%	VS1	H	+6.00	EX-VG	EX	EX-VG	EX	EX-VG	ModernCut
20	★	Brilliant 17882\$	1.7953	SR 36.56%	VS1	H	+6.23	EX	EX	EX	EX	EX	SweetLine
21	★	Brilliant 17982\$	1.7997	SR 36.76%	VS1	H	+5.57	EX	EX	EX	EX	EX	SweetLine
22	★	Brilliant 17882\$	1.7900	SR 36.56%	VS1	H	+7.63	EX	EX	EX	EX	EX	SweetLine
23	★	Brilliant 17882\$	1.7890	SR 36.56%	VS1	H	+7.14	EX	EX	EX	EX	EX	SweetLine
24	★	Brilliant 17782\$	1.7817	SR 36.35%	VS1	H	+8.17	EX	EX	EX	EX	EX	SweetLine
25	★	Brilliant 17882\$	1.7980	SR 36.56%	VS1	H	+5.83	EX	EX	EX	EX	EX	SweetLine
27	★	Brilliant 15984\$	1.8020	SR 36.76%	VS1	H	+5.46	EX-VG	EX	EX-VG	EX	EX-VG	SweetLine


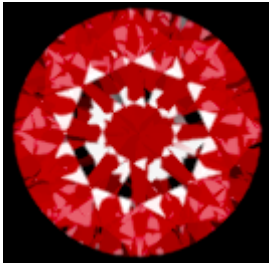


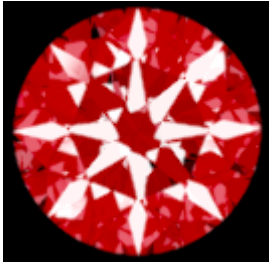
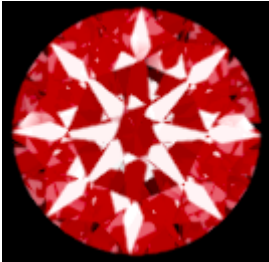
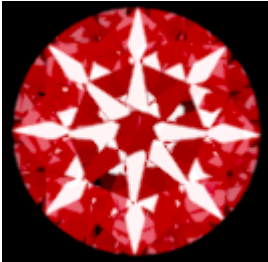
SweetLine = Default (1.5)

SweetLine = 0.3

Yellow Flags = SR above solution #1. Modern Cut with Table EX = [54 60]

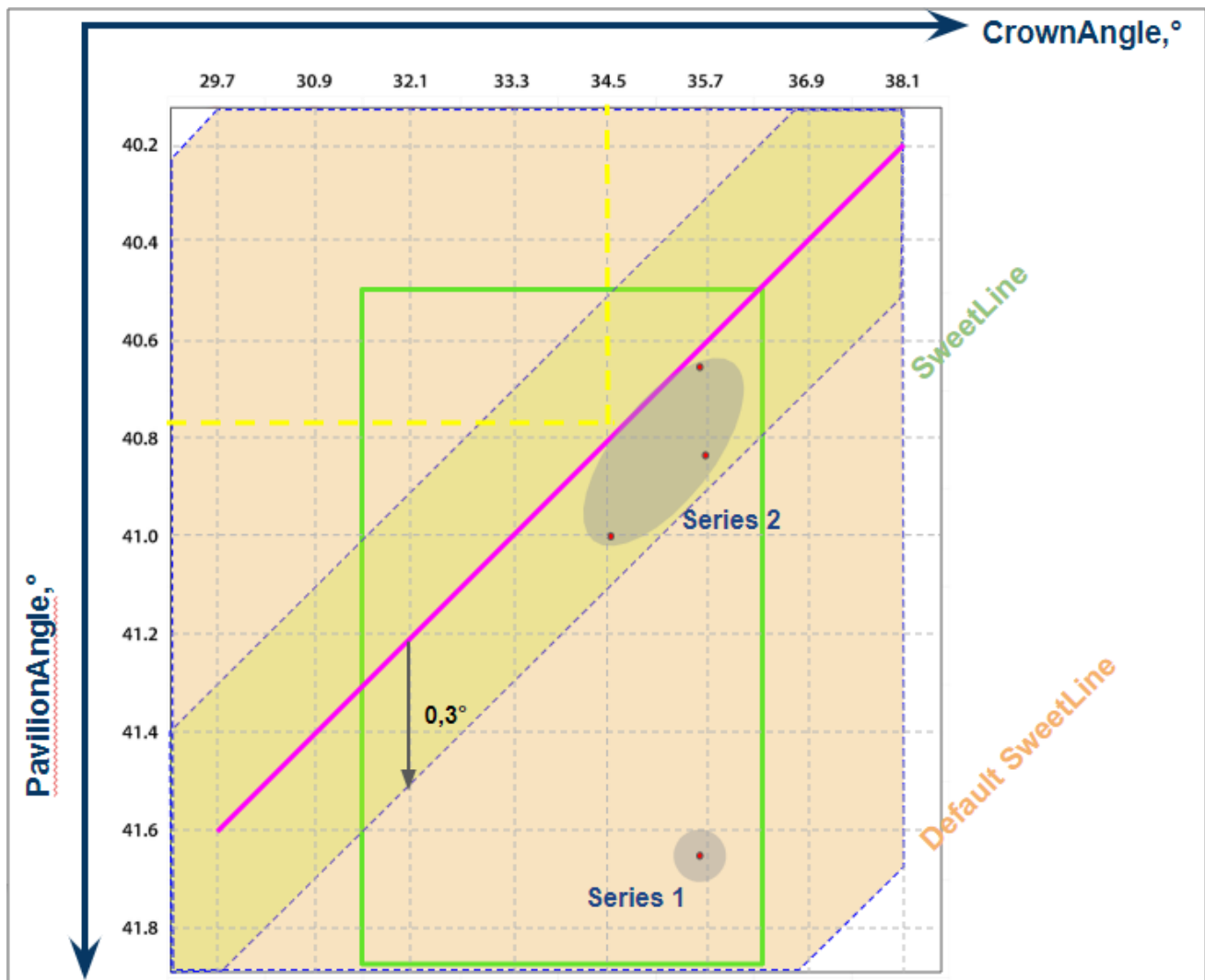
Green Flags = the same with SweetLine EX = [-0.3 0.3]

Preset	-	-	7.ExtendedLimits	6.LowSym	5.Standard
	Original stone	18. Semipolished	Series 1 (Default SweetLine = 1,5)		
Mass	4.8963	1.7662	1.8104	1.8082	1.8074
Optical symmetry	NA	8.05	6.00	6.73	7.10
CrownAngle, PavilionAngle	NA	34.69 41.24	35.20 41.65	35.20 41.65	35.20 41.65
Light return	NA		0.90	0.87	0.87

Picture	NA				
			Series 2 (SweetLine = 0,3)		
Mass			1.8020	1.7997	1.7980
Optical symmetry			5.46	5.57	5.83
CrownAngle, PavilionAngle			35.70 40.85	35.70 40.85	35.70 40.85
Light return			0.98	0.99	1.00
Picture					



Light return is currently not included in HPO reports. It may be obtained via DiamCalc. To open a model in DiamCalc, export it from HPO using **File Export Diamond to dmc file**.



Note that the MaxMass preset is excluded from the comparison.

Example - Semipolished Stone

Below is an example of a semipolished stone ([Sweetline_example_2 \(SL Updated Results\).oxg](#)) with two sets of Smart Recut solutions. Note how the tightened setting of SweetLine leads to the improved visual appearance (the "hearts and arrows" pattern) and greater values of light return.

Plans & Scans

★

☆

🚩

🚩

🚩

🚩

✖

⚖️

⚖️

Compare

Standard Report

▼

Cutting

Price

Mass

Alloc

Yield

Clarity

Color

Sym-O

Gr

Cut

Sym

Profile

E

<input type="checkbox"/>	Shadow scan		<input type="radio"/>	1.3736	+5.65 UNK		UNK	UNK	UNK	Profile1	
<input checked="" type="checkbox"/>	2	● Brilliant 8140\$	1.1125	80.81%	VS1 H	+8.94	EX	EX	EX	Profile1	
<input type="checkbox"/>	4	● Brilliant 8287\$	1.1318	SR 82.26%	VS1 H	+6.94	EX	EX	EX	Profile1	
<input type="checkbox"/>	5	● Brilliant 8287\$	1.1333	SR 82.26%	VS1 H	+7.61	EX	EX	EX	Profile1	
<input type="checkbox"/>	6	● Brilliant 7366\$	1.1375	SR 82.26%	VS1 H	+5.04	EX-VG	EX	EX-VG	Profile1	
<input type="checkbox"/>	7	● Brilliant 8287\$	1.1295	SR 82.26%	VS1 H	+8.43	EX	EX	EX	Profile1	
<input type="checkbox"/>	8	● Brilliant 8287\$	1.1341	SR 82.26%	VS1 H	+7.36	EX	EX	EX	Profile1	
<input type="checkbox"/>	9	● Brilliant 8287\$	1.1363	SR 82.26%	VS1 H	+5.97	EX	EX	EX	Profile1	
<input type="checkbox"/>	10	● Brilliant 8287\$	1.1324	SR 82.26%	VS1 H	+8.15	EX	EX	EX	Profile1	
<input type="checkbox"/>	12	● Brilliant 8287\$	1.1293	SR 82.26%	VS1 H	+6.84	EX	EX	EX	Profile1	
<input type="checkbox"/>	13	● Brilliant 8213\$	1.1262	SR 81.53%	VS1 H	+7.41	EX	EX	EX	Profile1	
<input type="checkbox"/>	14	● Brilliant 6445\$	1.1304	SR 82.26%	VS1 H	+5.10	EX-GD	EX	EX-GD	Profile1	
<input type="checkbox"/>	15	● Brilliant 8213\$	1.1212	SR 81.53%	VS1 H	+8.39	EX	EX	EX	Profile1	
<input type="checkbox"/>	17	● Brilliant 8287\$	1.1297	SR 82.26%	VS1 H	+6.38	EX	EX	EX	Profile1	
<input type="checkbox"/>	18	● Brilliant 8213\$	1.1277	SR 81.53%	VS1 H	+7.15	EX	EX	EX	Profile1	
<input type="checkbox"/>	19	● Brilliant 8213\$	1.1242	SR 81.53%	VS1 H	+7.50	EX	EX	EX	Profile1	

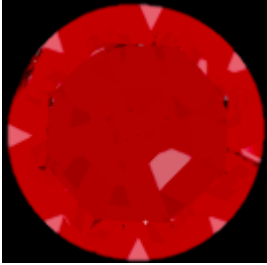

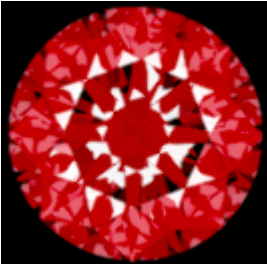


SweetLine = Default (1.5)

SweetLine = 0.3

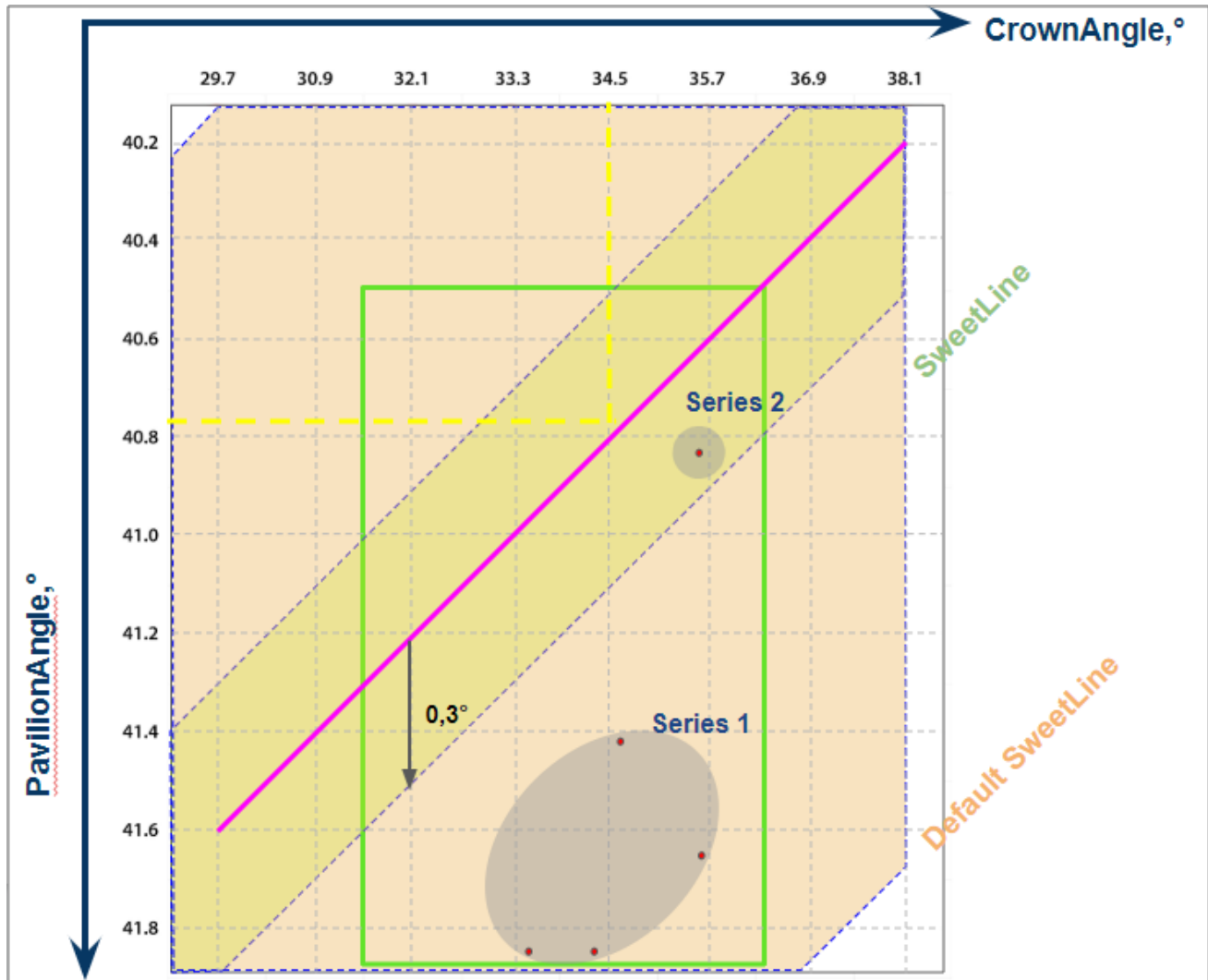
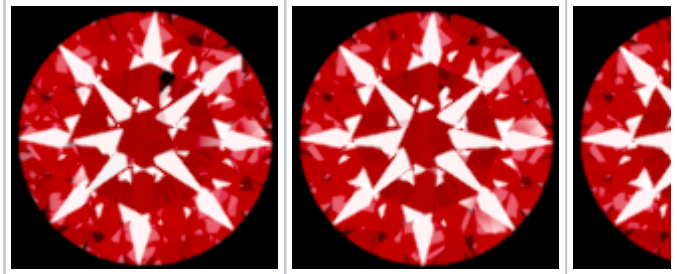
SweetLine = Default (1.5)

SweetLine = 0.3

Yellow Flags = SR above solution #2, Modern_Cut with Table EX = [54 60]
Green Flags = the same with SweetLine EX = [-0,3 0,3]

Preset			7.ExtendedLimits	6.LowSym	5.
	Original stone	18. Semipolished	Series 1 (De		
Mass	1.3736	1..1125	1.1375	1.1363	
Optical symmetry			5.04	5.97	
CrownAngle, PavilionAngle			35.20 41.65	35.20 41.65	
Light return			0.91	0.91	
Picture					
			Series 2		
Mass			1.1304	1.1297	
Optical symmetry			5.10	6.38	
CrownAngle, PavilionAngle			35.20 40.85	35.20 40.85	
Light return			0.97	0.97	

Picture



For AnyCut

Specifying Unique SweetLine Slope for Client Cuttings

For each of the **Client Cuttings**, you can specify a unique SweetLine axis slope using its allocation forms (for information about user cuttings and allocation forms, see [In-house cut registration](#)). There are three ways of how SweetLine axis slope is specified for the cutting:

- **The user did not specify any specific forms:** the SweetLine axis is built using the base allocation form of the cutting - the system uses this form and draws a line through it in accordance with the built-in system logic for finding optimal optical performance.

What is a base allocation form? It is the form automatically registered when performing [In-house cut registration](#) (equal to the model being registered as cutting).

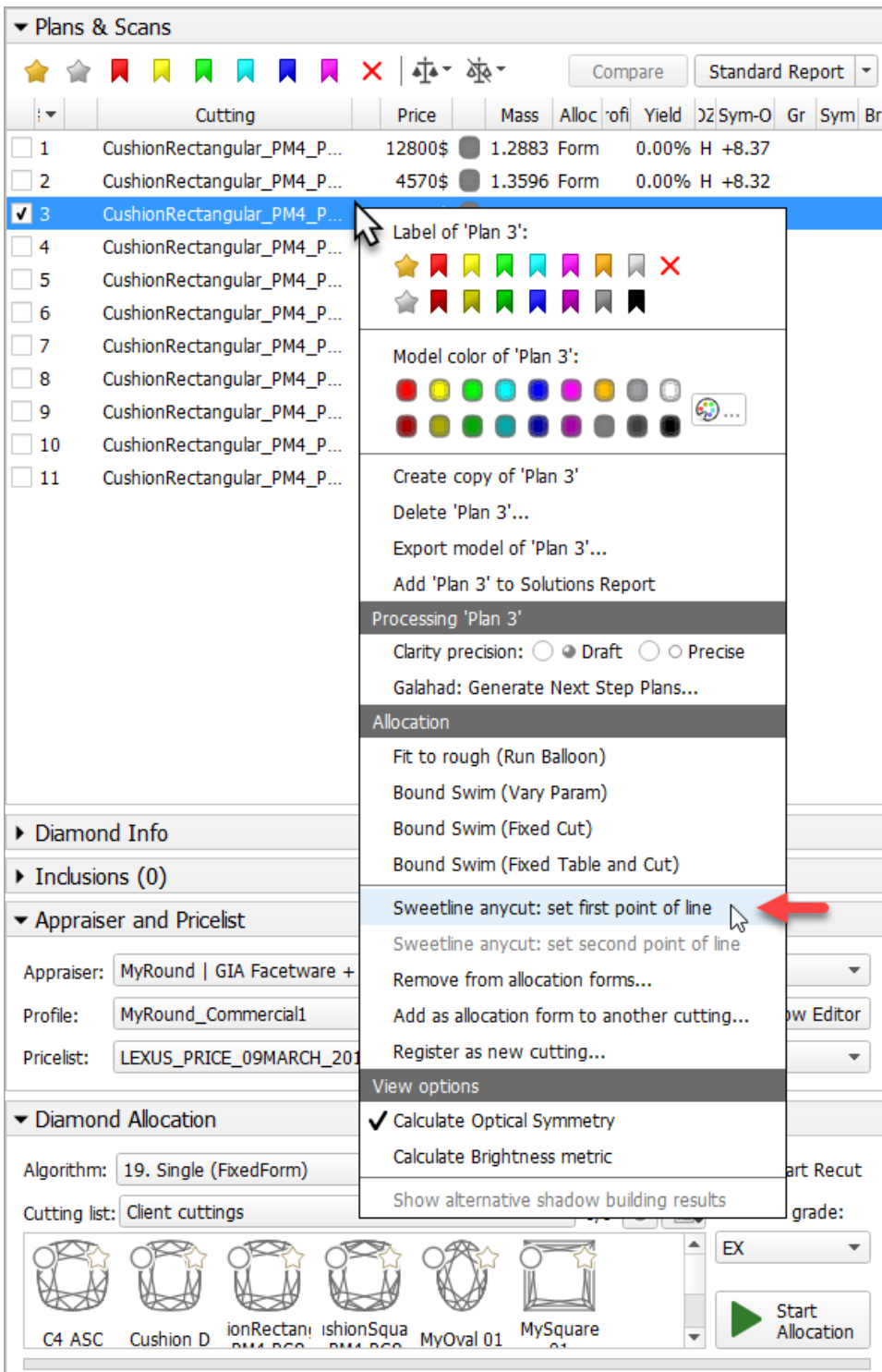
How to distinguish the base allocation form? In the list of forms, it does not have "(...)" after its name:

The screenshot displays the 'Plans & Scans' application window. The main table lists various diamond cutting forms. The first row, 'CushionRectangular_PM4_PG8_PH24_PBrill_C32', is highlighted with a red circle. The table columns include #, Cutting, Price, Mass, Alloc, Profile, Yield, DZ, Sym-O, Gr, Sym, and Br. Below the table, there are several panels: 'Diamond Info', 'Inclusions (0)', 'Appraiser and Pricelist' (showing 'CushionRectangular_Opt | CushionRectangular' and 'CushionRectangular_Absolute+CushionRectangular_Relative'), 'Diamond Allocation' (showing 'Algorithm: 19. Single (FixedForm)' and a 'Cutting list' with icons for different shapes like C4 ASC, Cushion D, etc.), and a 'QC Panel' at the bottom.

- **The user specified only one form:** the SweetLine axis is built using this form - the system uses this form and draws a line through it in accordance with the built-in system logic for finding optimal optical performance.
- **The user specified two forms:** the SweetLine axis is built using these forms - the system draws a line through them.

To specify forms for SweetLine for your cutting:

1. Show allocation forms of your cutting as described [here](#).
2. Right-click the appropriate allocation form and select **Sweetline anycut: set first point of line**.



3. If necessary, select another allocation form and select **Sweetline anycut: set other point of line**.

The selected points are marked in the **Allocation** column as "SL1" and "SL2".

▼ Plans & Scans

★

☆

🚩

🚩

🚩

🚩

✖

⚖

⚖

Compare

Standard Report

	Cutting	Price	Mass	Alloc	rofi	Yield	ΣZ	Sym-O	Gr	Sym	Br
<input checked="" type="checkbox"/>	1	CushionRectangular_PM4_P...	12800\$	1.2883	Form	0.00%	H	+8.37			
<input type="checkbox"/>	2	CushionRectangular_PM4_P...	4570\$	1.3596	Form	0.00%	H	+8.32			
<input type="checkbox"/>	3	CushionRectangular_PM4_P...	4570\$	1.3667	SL1	0.00%	H	+8.33			
<input type="checkbox"/>	4	CushionRectangular_PM4_P...	4536\$	1.3577	Form	0.00%	H	+8.21			
<input type="checkbox"/>	5	CushionRectangular_PM4_P...	4435\$	1.3197	Form	0.00%	H	+8.29			
<input type="checkbox"/>	6	CushionRectangular_PM4_P...	4334\$	1.2927	Form	0.00%	H	+8.30			
<input type="checkbox"/>	7	CushionRectangular_PM4_P...	4334\$	1.2897	Form	0.00%	H	+8.27			
<input type="checkbox"/>	8	CushionRectangular_PM4_P...	4368\$	1.2990	Form	0.00%	H	+8.22			
<input type="checkbox"/>	9	CushionRectangular_PM4_P...	4435\$	1.3242	SL2	0.00%	H	+8.41			
<input type="checkbox"/>	10	CushionRectangular_PM4_P...	4469\$	1.3354	Form	0.00%	H	+8.30			
<input type="checkbox"/>	11	CushionRectangular_PM4_P...	4603\$	1.3724	Form	0.00%	H	+8.34			