Using SweetLine

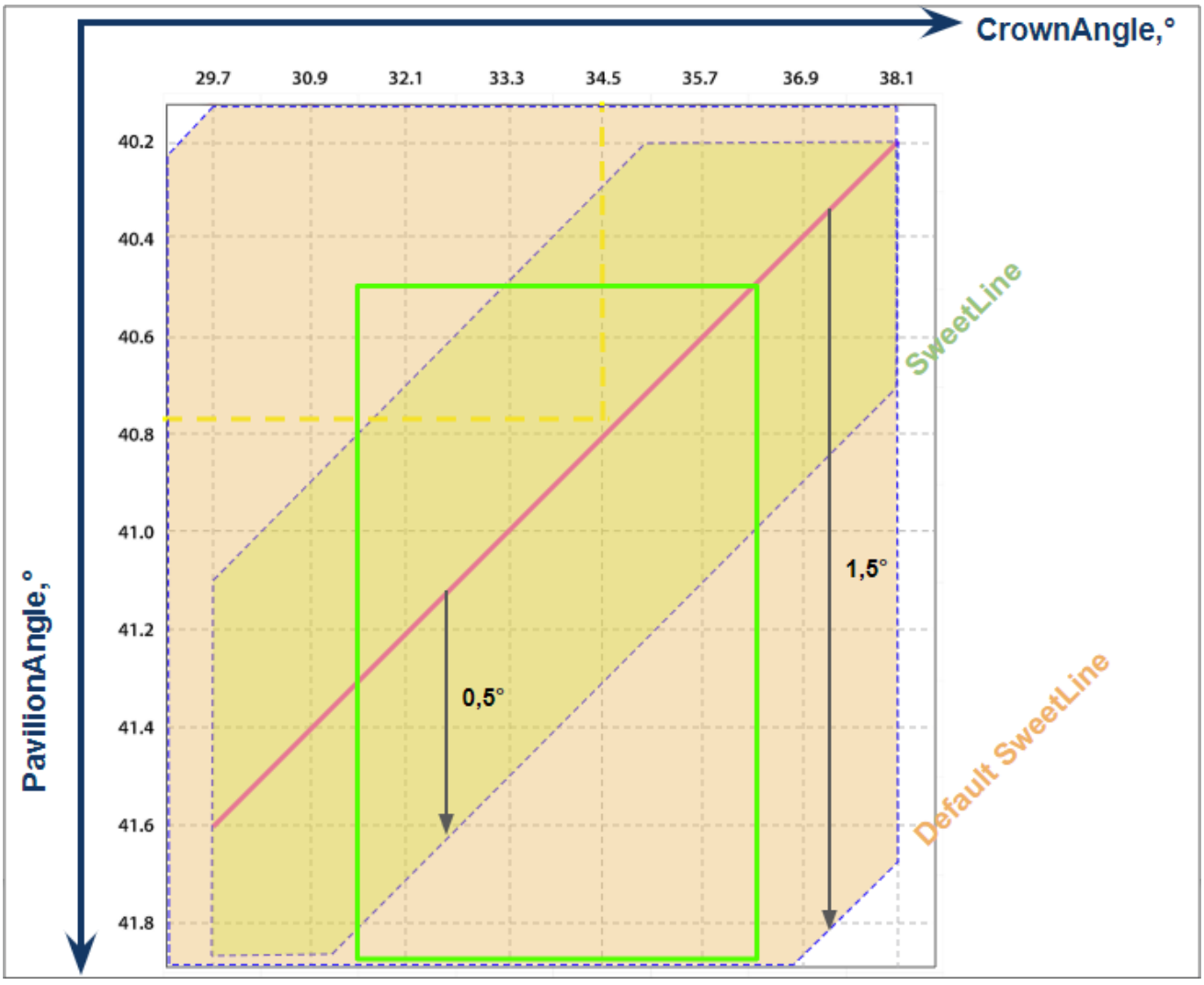
On this page:

Overview

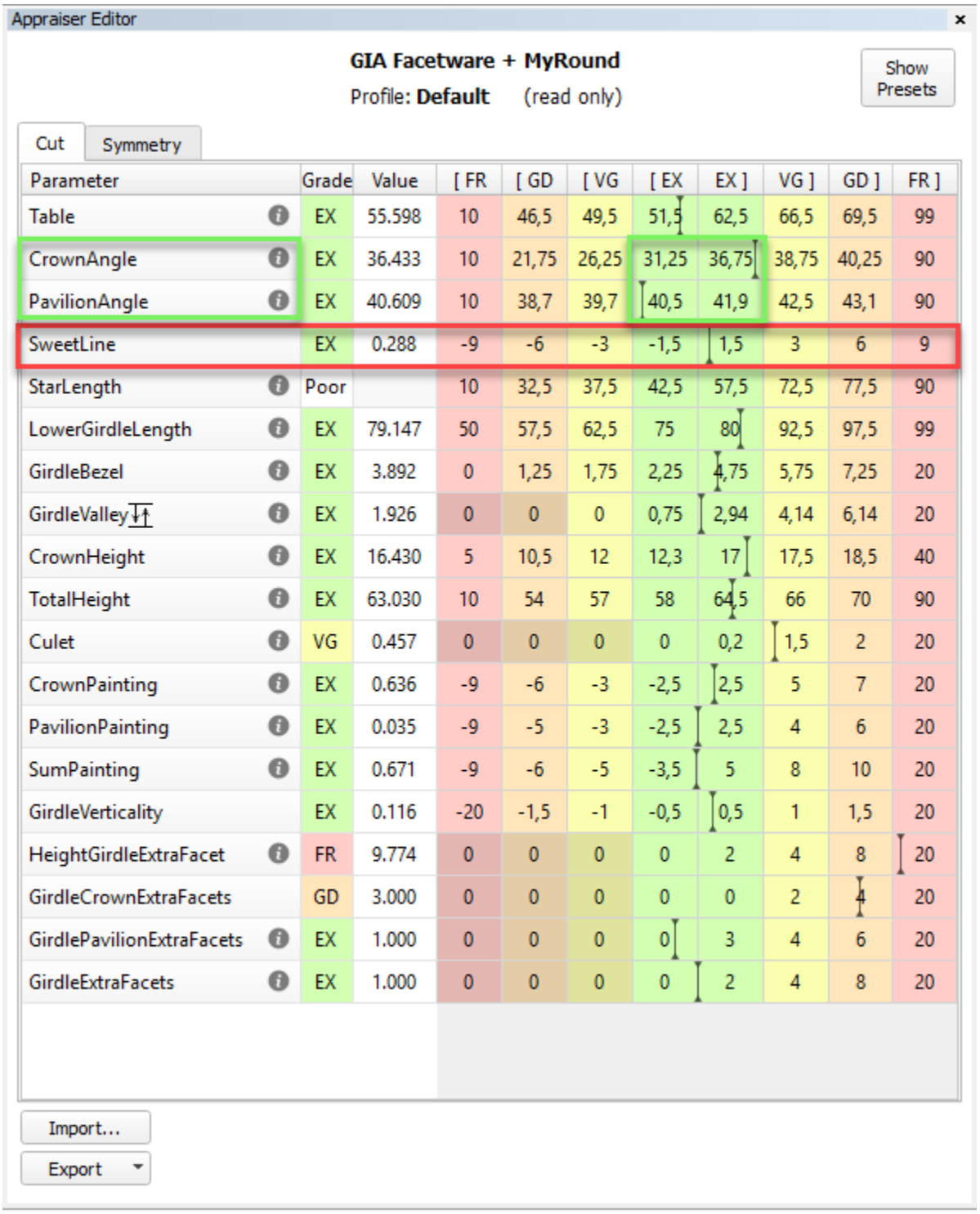
The *SweetLine* parameter description, information about its calculation and presence in appraisers and reports is presented on the **SweetLine** page.

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.



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

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

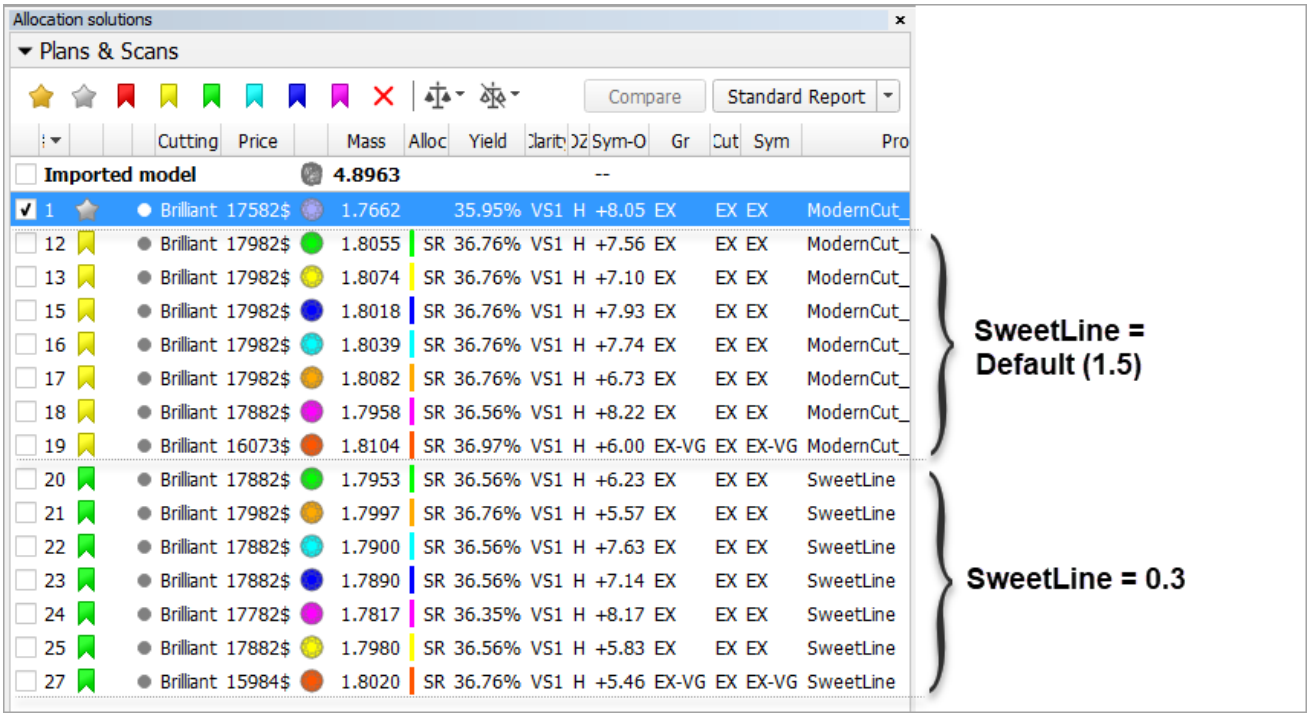
Video | SweetLine - Time-Saving Approach to Getting Better Optical Performance				
Published:	2019, October 1	**Last Updated:**	2019, December 5	**v.2.0**

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.

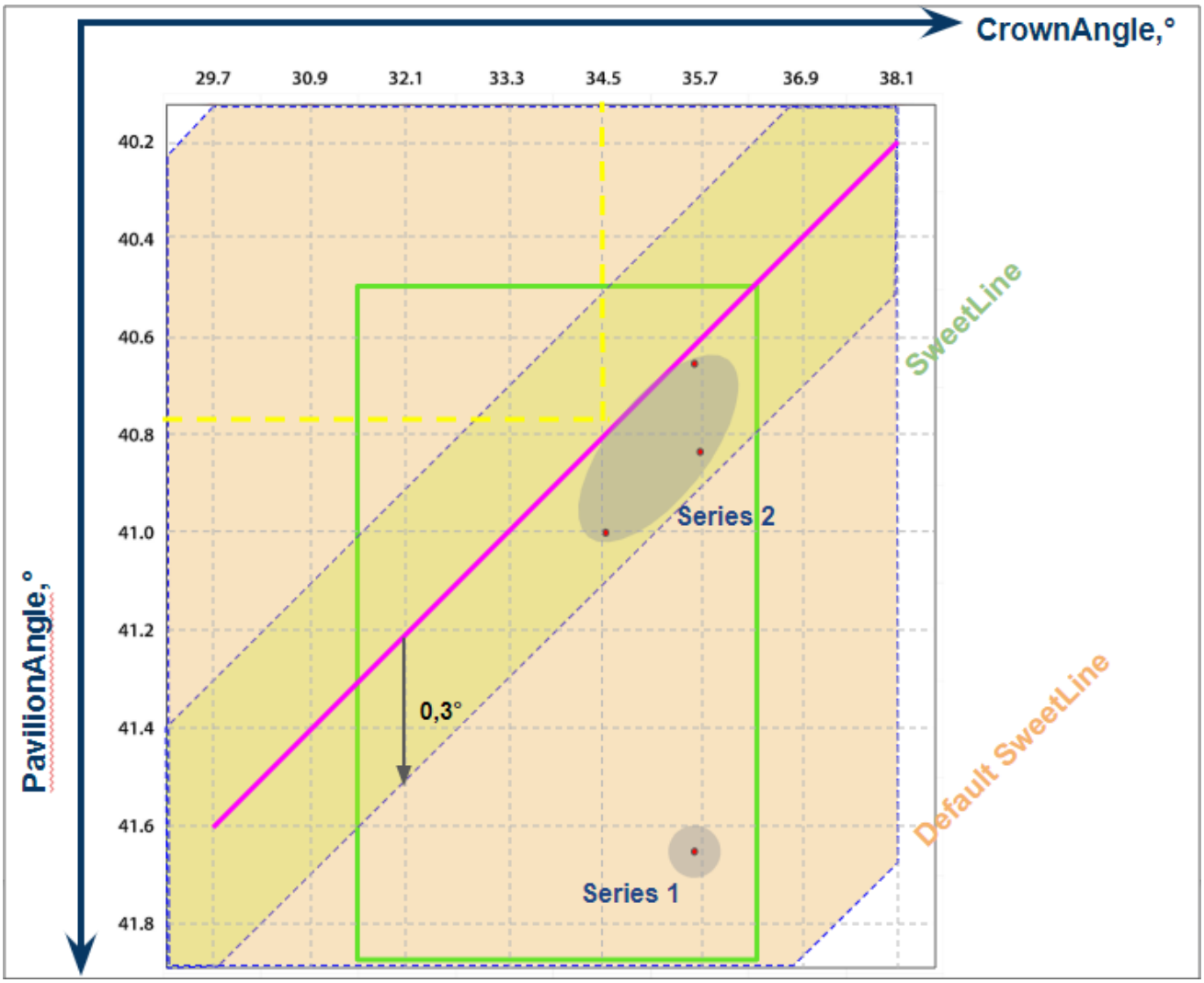


Yellow Flags = SR above solution #1, Modern_Cut with Table EX = [54 60]
Green Flags = the same with SweetLine EX = [-0,3 0,3]

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					

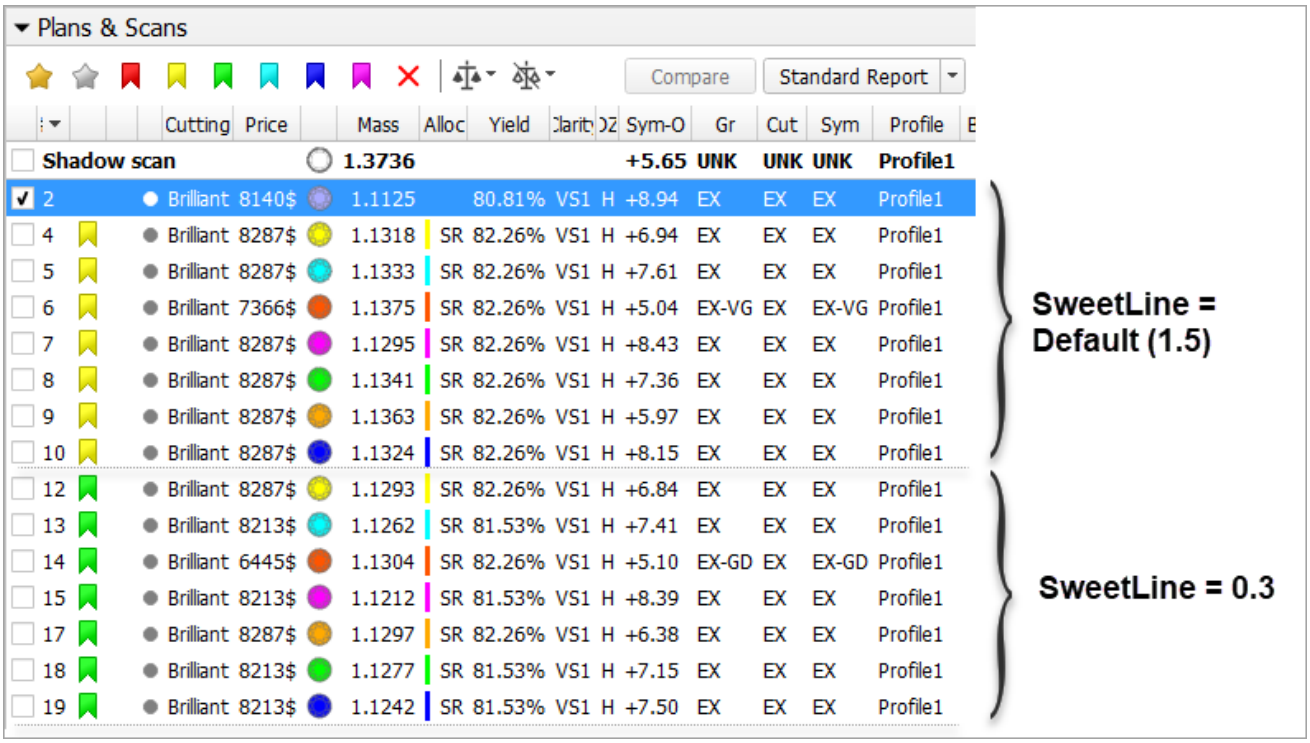
Light return is currently not included in HPO reports. It may be obtained via DiamCalc. To open a model in DiamCalc, export it from HPO using **File Export Diamond to dmc file**.



Note that the MaxMass preset is excluded from the comparison.

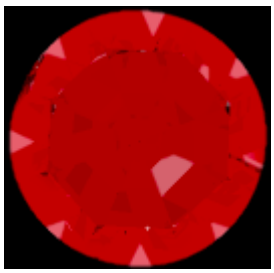
Example - Semipolished Stone

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.

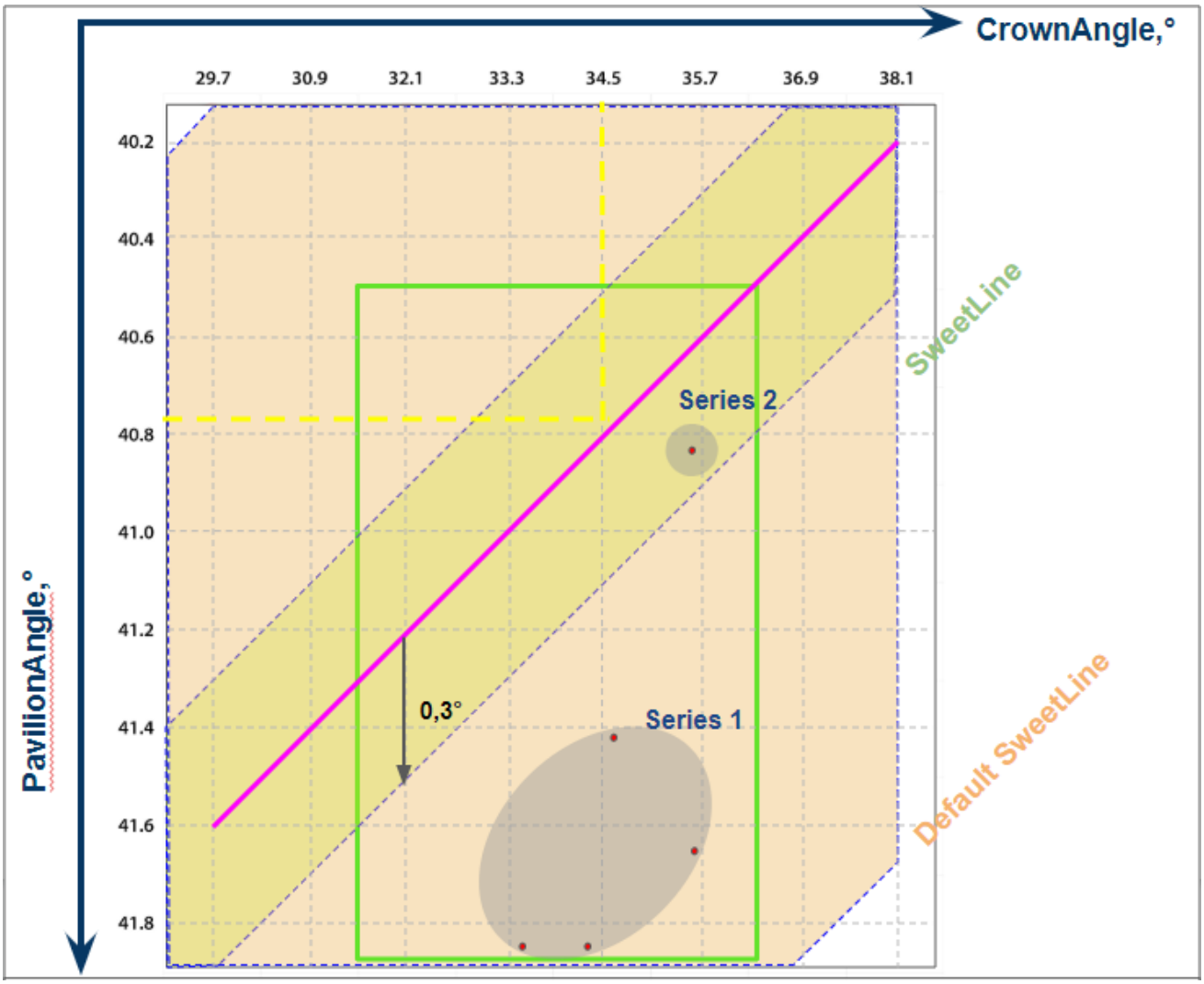


Cutting	Price		Mass	Alloc	Yield	Clarity	JZ	Sym-O	Gr	Cut	Sym	Profile	E
Shadow scan			1.3736					+5.65	UNK	UNK	UNK	Profile1	
2	Brilliant	8140$	1.1125		80.81%	VS1	H	+8.94	EX	EX	EX	Profile1	
4	Brilliant	8287$	1.1318	SR	82.26%	VS1	H	+6.94	EX	EX	EX	Profile1	
5	Brilliant	8287$	1.1333	SR	82.26%	VS1	H	+7.61	EX	EX	EX	Profile1	
6	Brilliant	7366$	1.1375	SR	82.26%	VS1	H	+5.04	EX-VG	EX	EX-VG	Profile1	
7	Brilliant	8287$	1.1295	SR	82.26%	VS1	H	+8.43	EX	EX	EX	Profile1	
8	Brilliant	8287$	1.1341	SR	82.26%	VS1	H	+7.36	EX	EX	EX	Profile1	
9	Brilliant	8287$	1.1363	SR	82.26%	VS1	H	+5.97	EX	EX	EX	Profile1	
10	Brilliant	8287$	1.1324	SR	82.26%	VS1	H	+8.15	EX	EX	EX	Profile1	
12	Brilliant	8287$	1.1293	SR	82.26%	VS1	H	+6.84	EX	EX	EX	Profile1	
13	Brilliant	8213$	1.1262	SR	81.53%	VS1	H	+7.41	EX	EX	EX	Profile1	
14	Brilliant	6445$	1.1304	SR	82.26%	VS1	H	+5.10	EX-GD	EX	EX-GD	Profile1	
15	Brilliant	8213$	1.1212	SR	81.53%	VS1	H	+8.39	EX	EX	EX	Profile1	
17	Brilliant	8287$	1.1297	SR	82.26%	VS1	H	+6.38	EX	EX	EX	Profile1	
18	Brilliant	8213$	1.1277	SR	81.53%	VS1	H	+7.15	EX	EX	EX	Profile1	
19	Brilliant	8213$	1.1242	SR	81.53%	VS1	H	+7.50	EX	EX	EX	Profile1	

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					
					


CrownAngle,°
29.7
30.9
32.1
33.3
34.5
35.7
36.9
38.1
PavillionAngle,°
40.2
40.4
40.6
40.8
41.0
41.2
41.4
41.6
41.8
SweetLine
Series 2
0,3°
Series 1
Default SweetLine