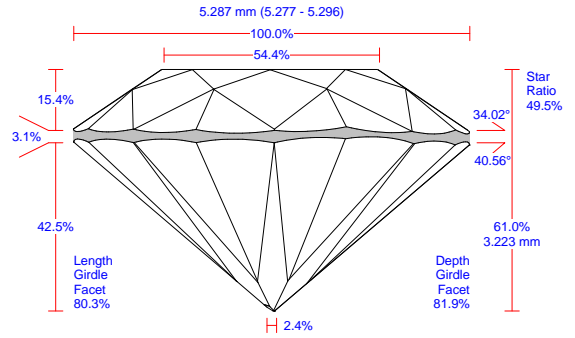


# HELIUM FULL REPORT

# Polished Brilliant

## General information

Model Simple  
 Expert name Makoed A.G.  
 Report date 07.07.2007  
 Real weight, ct  
 Calculated weight, ct 0.54, 0.5484  
 Appraiser title AGS\_2005  
 Overall cut quality 2  
 Symmetry appraiser title Internal  
 Overall symmetry quality GD  
 Spread 0.01 ct, 1.33%  
 AGS Spread 0.01 ct, 1.01%  
 Girdle to MIC 0.008 mm  
 EF / Nat No



## Main parameters

Parameter		Avg	Min	Max	Dev	Cut	Sym
Diameter	mm	5.287	5.277	5.296	0.36 %	N/A	EX
Crown angle	°	34.02	33.45	34.23	0.78	Grading	VG
Crown height	%	15.38	15.06	15.68	0.62	N/A	EX
Crown height	mm	0.813	0.796	0.829	0.033		
Crown height at girdle minima	%	15.99	15.62	16.40	0.78	N/A	VG
Crown height at girdle minima	mm	0.845	0.826	0.867	0.041		
Pavilion angle	°	40.56	40.44	40.66	0.21	Grading	EX
Pavilion depth	%	42.46	41.89	42.83	0.94	N/A	VG
Pavilion depth	mm	2.245	2.215	2.264	0.050		
Pavilion depth at girdle minima	%	43.34	42.72	43.97	1.25	N/A	VG
Pavilion depth at girdle minima	mm	2.291	2.258	2.324	0.066		
Upper girdle facets angle	°	39.50	38.20	40.74	2.54		GD
Upper girdle facets height	%	10.97	10.61	11.43	0.82		EX
Upper girdle facets height	mm	0.580	0.561	0.604	0.044		
Star facets angle	°	21.96	21.31	22.26	0.95		EX
Star : Upper ratio	%	49.52 : 50.48	47.88 : 52.12	50.88 : 49.12	3.00	N/A	VG
Lower girdle facets angle	°	41.69	41.50	42.35	0.85		EX
Lower girdle facets height	%	35.86	34.90	36.32	1.42	N/A	EX
Lower girdle facets height	mm	1.896	1.845	1.920	0.075		
Depth Girdle Facet	%	81.87	80.81	83.08	2.27		
Length Girdle Facet	%	80.26	79.02	81.67	2.65		
Total height	%	60.97				N/A	
Total height	mm	3.223					
Table	%	54.40	53.99	54.72	0.73	Grading	EX
Table	mm	2.876	2.854	2.893	0.039		
Culet	%	2.44	2.09	2.90	0.81	1	EX
Culet	mm	0.129	0.110	0.153	0.043		
Twist	°	0.71	0.05	1.73	1.68		VG
Girdle thickness: Bezel	%	3.11	2.78	3.35	0.57	0	EX
Girdle thickness: Bezel	mm	0.164	0.147	0.177	0.030		
Girdle thickness: Bone	%	3.33	2.98	3.76	0.78	0	VG
Girdle thickness: Bone	mm	0.176	0.157	0.199	0.041		
Girdle thickness: Valley	%	1.68	1.26	1.99	0.74	0	EX
Girdle thickness: Valley	mm	0.089	0.066	0.105	0.039		
<b>Measurement as per OctoNus theory:</b>							
Crown angle	°	34.02	33.75	34.18	0.43		
Pavilion angle	°	40.56	40.49	40.60	0.11		
Culet through bezel	°	9.19				N/A	
Fish eye effect	°	8.74				N/A	

Paint / Dug		Avg	Type	Sym	Max	Dev	Sym
Crown	°	-1.09	Painting	EX	-3.25	4.75	EX
Crown	notches	0.3, Very small			0.9	1.3	
Pavilion	°	0.45	Digging	EX	3.86	4.89	EX
Pavilion	notches	0.1, Very small			1.0	1.3	

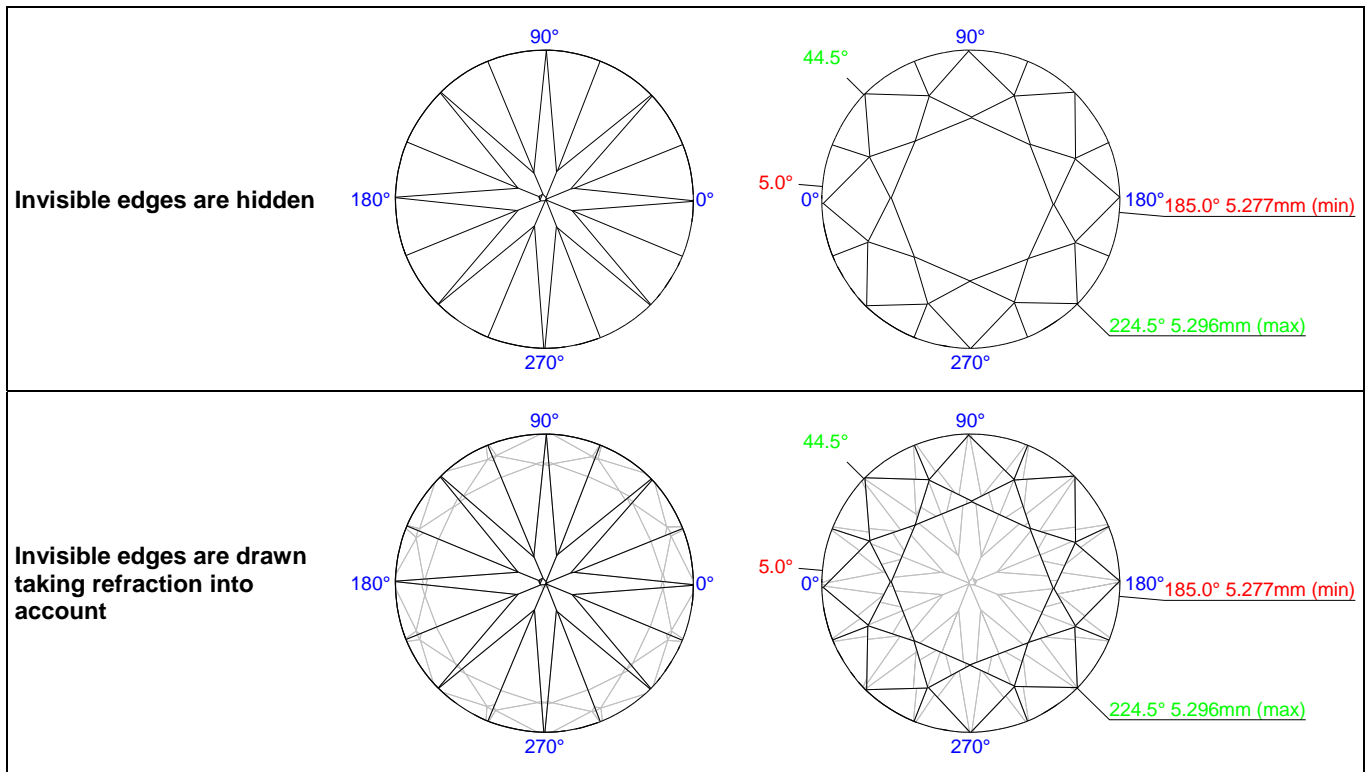
## Detailed parameters

Parameter		1	2	3	4	5	6	7	8
Diameter	mm	5.281	5.296	5.288	5.293				
Crown angle	°	34.05	34.12	34.14	33.45	34.06	34.08	34.23	34.05
Crown height	%	15.68	15.64	15.41	15.09	15.06	15.16	15.35	15.67
Crown height	mm	0.829	0.827	0.815	0.798	0.796	0.802	0.811	0.828
Crown height at girdle minima	%	16.29	16.30	15.95	15.68	16.09	15.91	15.76	15.68
		15.64	15.62	15.86	15.89	16.13	16.30	16.40	16.29
Crown height at girdle minima	mm	0.861	0.862	0.843	0.829	0.850	0.841	0.833	0.829
		0.827	0.826	0.838	0.840	0.853	0.862	0.867	0.861
Crown azimuth	°	0.3	44.4	90.1	136.1	179.5	225.6	269.8	315.9
Crown azimuth deviation from ideal	°	0.33	-0.62	0.11	1.07	-0.50	0.57	-0.17	0.91
Pavilion angle	°	40.44	40.53	40.55	40.55	40.55	40.64	40.60	40.66
Pavilion depth	%	41.89	42.30	42.49	42.54	42.68	42.83	42.51	42.45
Pavilion depth	mm	2.215	2.236	2.246	2.249	2.256	2.264	2.247	2.244
Pavilion depth at girdle minima	%	42.72	42.91	43.97	43.81	43.36	43.39	43.38	43.41
		43.63	43.73	43.59	43.27	43.20	43.31	43.01	42.75
Pavilion depth at girdle minima	mm	2.258	2.268	2.324	2.316	2.292	2.294	2.293	2.295
		2.307	2.312	2.304	2.287	2.284	2.289	2.274	2.260
Pavilion azimuth	°	0.0	45.4	90.1	135.7	180.1	224.7	269.2	314.2
Pavilion azimuth deviation from ideal	°	0.00	0.44	0.06	0.70	0.13	-0.25	-0.84	-0.82
Upper girdle facets angle	°	38.68	39.37	38.20	38.21	40.00	39.97	39.07	39.53
		39.25	39.27	39.98	39.72	40.55	40.74	39.88	39.63
Upper girdle facets height	%	11.36	11.43	11.01	10.75	11.04	10.99	10.61	10.66
		10.75	10.73	10.94	10.92	10.99	10.98	11.15	11.21
Upper girdle facets height	mm	0.601	0.604	0.582	0.568	0.584	0.581	0.561	0.563
		0.568	0.567	0.578	0.577	0.581	0.580	0.590	0.593
Upper girdle facets azimuth	°	8.5	34.0	52.4	81.8	100.0	123.3	145.5	168.7
		188.7	215.5	235.9	259.9	281.3	303.8	326.1	348.9
Upper girdle facets azimuth deviation from ideal	°	-2.71	0.21	-3.87	3.01	-1.23	-0.43	-0.78	-0.05
		-2.55	1.78	-0.31	1.10	0.08	0.05	-0.19	0.20
Star facets angle	°	22.10	21.68	21.31	22.03	22.16	22.04	22.26	22.09
Star facets azimuth	°	22.7	67.8	114.7	158.8	204.6	249.2	293.4	338.7
Star facets azimuth deviation from ideal	°	0.15	0.29	2.24	1.35	2.09	1.73	0.92	1.19
Star : Upper ratio	%	47.88 :	48.63 :	50.26 :	50.29 :	49.93 :	48.73 :	50.88 :	49.51 :
		52.12	51.37	49.74	49.71	50.07	51.27	49.12	50.49
Lower girdle facets angle	°	41.52	41.54	42.35	42.19	41.63	41.55	41.59	41.54
		41.66	41.69	41.69	41.62	41.63	41.76	41.63	41.50
Lower girdle facets height	%	34.90	36.05	35.96	36.32	35.79	36.23	35.80	36.03
		35.69	36.23	36.25	35.89	35.92	35.46	35.77	35.43
Lower girdle facets height	mm	1.845	1.906	1.901	1.920	1.892	1.915	1.892	1.905
		1.887	1.916	1.916	1.897	1.899	1.874	1.891	1.873
Lower girdle facets azimuth	°	10.8	33.3	60.2	74.9	100.9	123.5	145.9	168.5
		191.1	213.4	235.7	258.3	280.6	303.3	325.5	348.3
Lower girdle facets azimuth deviation from ideal	°	-0.41	-0.45	3.96	-3.80	-0.32	-0.20	-0.33	-0.21
		-0.18	-0.34	-0.57	-0.50	-0.66	-0.46	-0.76	-0.49
Depth Girdle Facet	%	80.81	83.08	81.06	82.24	81.66	82.60	81.65	82.12
		80.94	81.97	82.22	82.14	82.27	80.94	82.20	82.02
Length Girdle Facet	%	79.37	81.67	79.02	80.20	79.98	80.93	79.97	80.45
		79.33	80.38	80.81	80.72	80.75	79.41	80.66	80.48
Table	%	54.22	54.72	54.66	53.99				
Table	mm	2.867	2.893	2.890	2.854				
Twist	°	0.33	1.07	0.05	0.37	0.63	0.82	0.66	1.73
Girdle Bezel	%	3.32	2.96	3.07	3.35	3.24	2.98	3.15	2.78
Girdle Bezel	mm	0.175	0.156	0.162	0.177	0.171	0.157	0.167	0.147
Girdle Bone	%	3.76	2.98	3.29	3.39	3.49	3.27	3.10	3.36
Girdle Bone	mm	0.199	0.157	0.174	0.179	0.184	0.173	0.164	0.178
Girdle Valley	%	1.99	1.77	1.26	1.66	1.53	1.67	1.84	1.89
		1.73	1.64	1.53	1.82	1.65	1.37	1.57	1.93
Girdle Valley	mm	0.105	0.094	0.066	0.088	0.081	0.089	0.097	0.100
		0.092	0.087	0.081	0.096	0.087	0.072	0.083	0.102
Crown painting	°	-3.04	-0.83	-3.25	-2.90	-1.34	1.50	-1.86	-0.45
		-2.04	-1.21	-0.88	-1.27	0.25	0.87	-1.11	0.13
Crown painting	notches	0.8	0.2	0.9	0.8	0.4	0.4	0.5	0.1
		0.5	0.3	0.2	0.3	0.1	0.2	0.3	0.0
Pavilion painting	°	-0.41	0.89	3.52	3.86	-0.38	0.90	-1.03	0.34
		-0.30	0.08	-0.31	-0.34	0.18	-0.35	0.06	0.49
Pavilion painting	notches	0.1	0.2	0.9	1.0	0.1	0.2	0.3	0.1
		0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.1
Measurement as per OctoNus theory:									
Crown angle	°	34.05	34.10	34.18	33.75				
Pavilion angle	°	40.49	40.58	40.57	40.60				

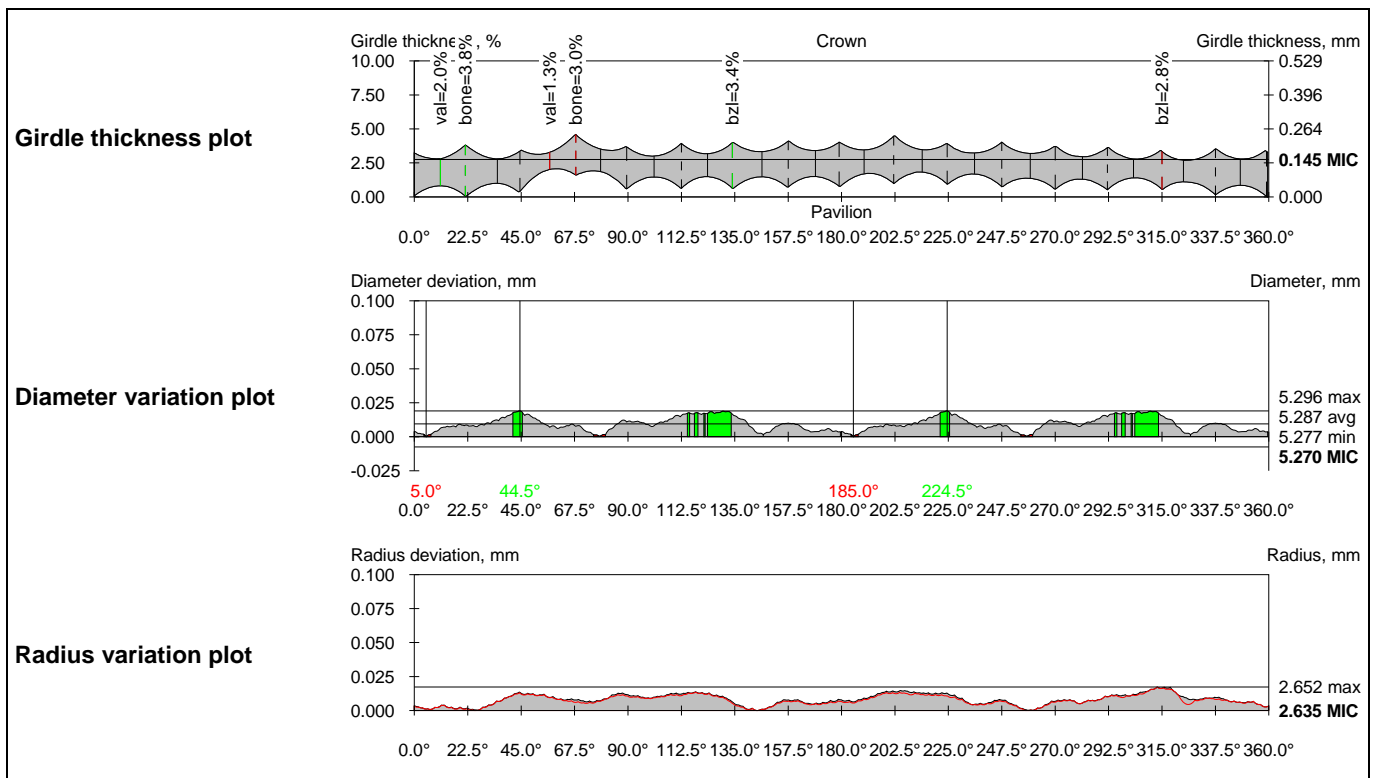
Offset	Distance, %	Distance, mm
Girdle-Culet offset by table axis	0.73 ± 0.24	0.022 ± 0.011
Girdle-Table offset by table axis	0.42 ± 0.21	0.039 ± 0.013
Culet-Table offset by table axis	0.63 ± 0.25	0.033 ± 0.013
Girdle to table-culet line offset	0.44	0.024

Culet shift ratio by main diameter		
Main diameter (avg)	5.287 mm, 100%	
Width-wise culet shift ratio	2.612 mm, 49.40 %	2.669 mm, 50.49 %
Length-wise culet shift ratio	2.665 mm, 50.41 %	2.624 mm, 49.63 %

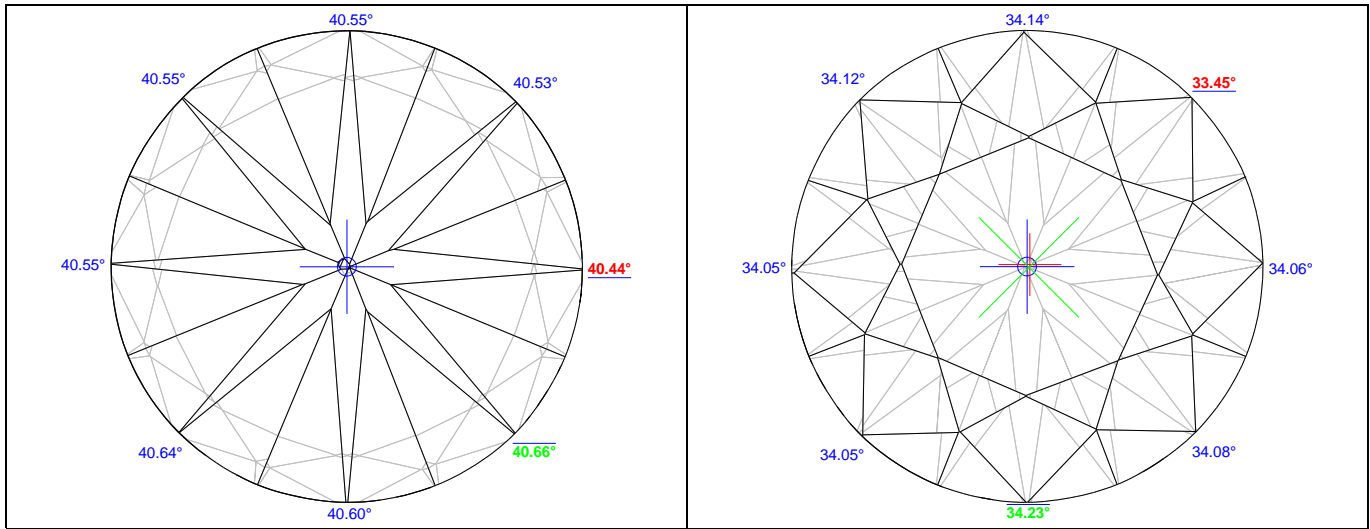
# Crown and pavilion views of the diamond with indication of the diameter minimum and maximum



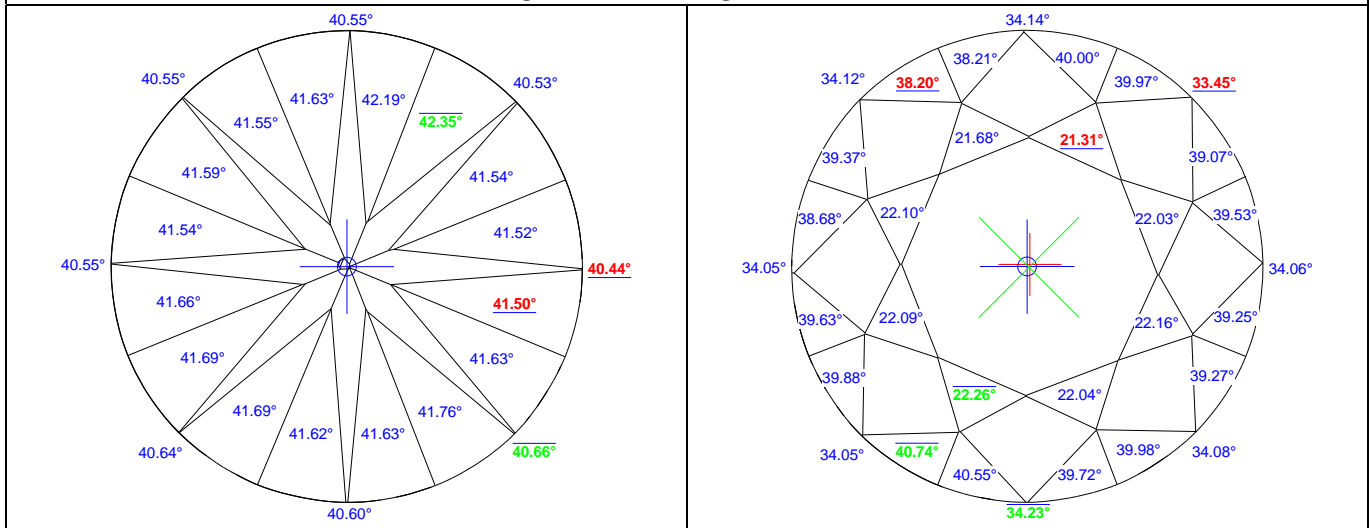
## Plots



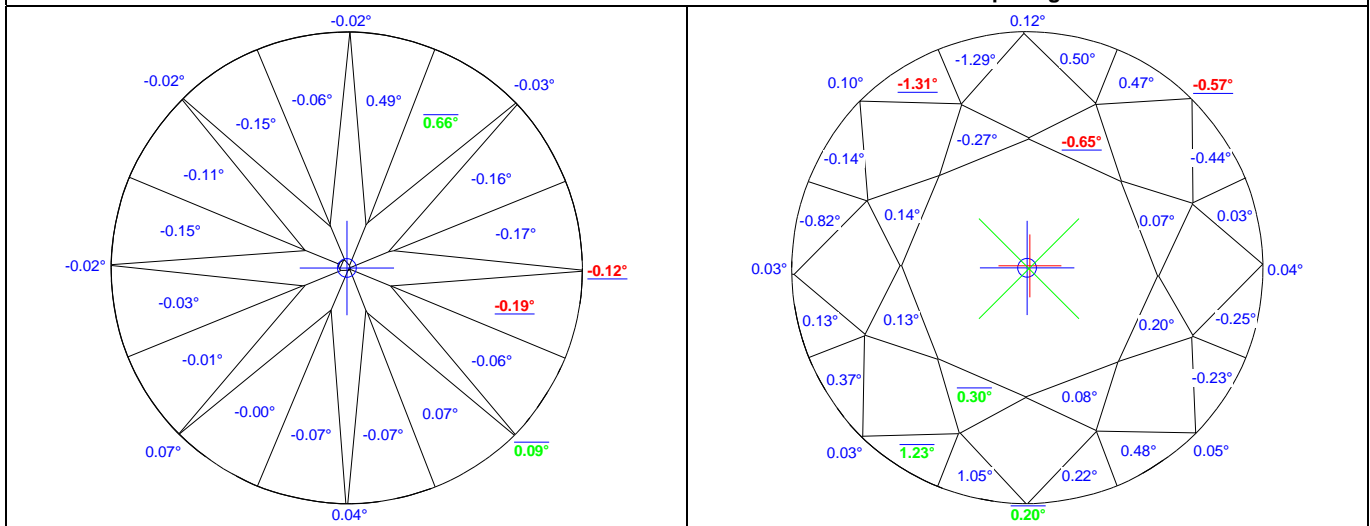
# Facets' azimuth and slope angles



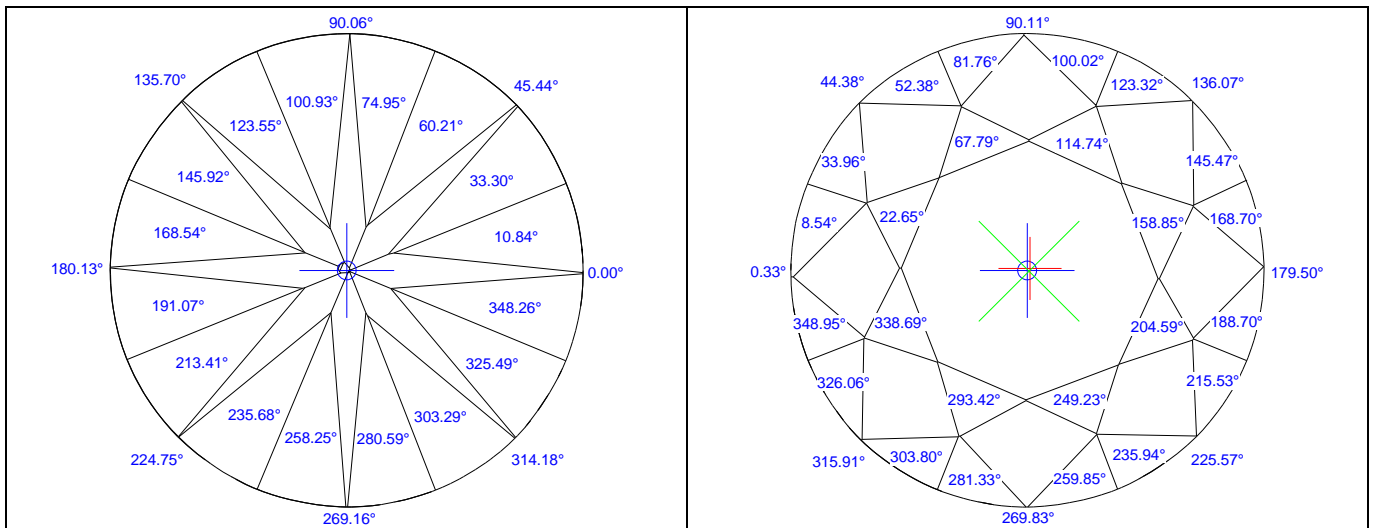
**Pavilion and crown views of the diamond with indication of main facets' slope angles**  
Invisible edges are drawn taking refraction into account



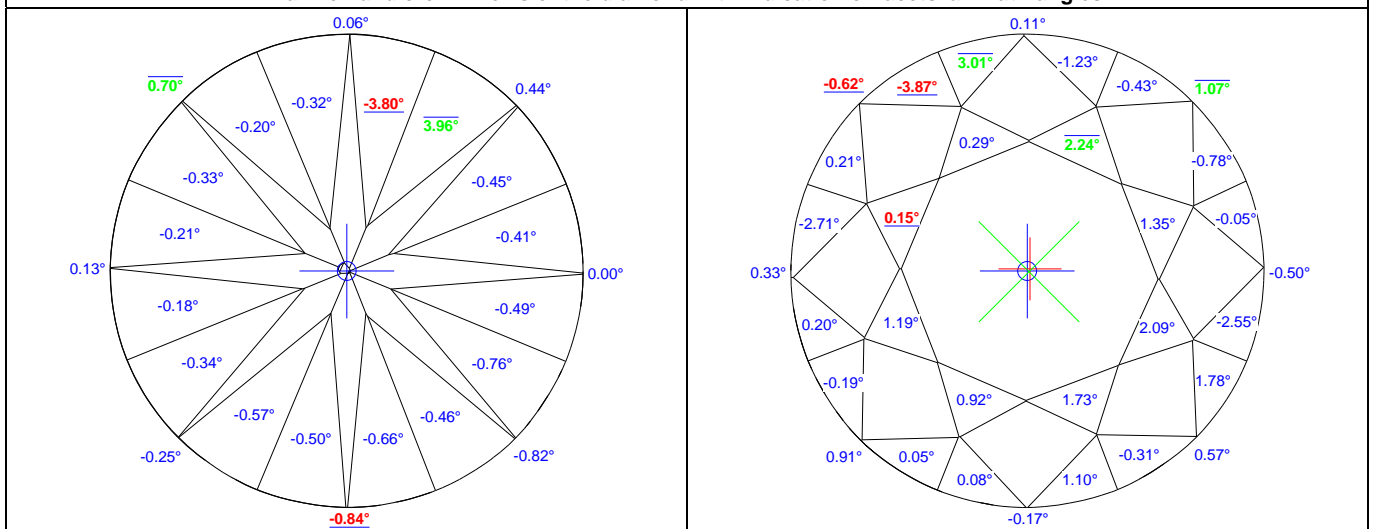
**Pavilion and crown views of the diamond with indication of facets' slope angles**



**Pavilion and crown views of the diamond with indication of deviation of facets' slope angles from the average values**

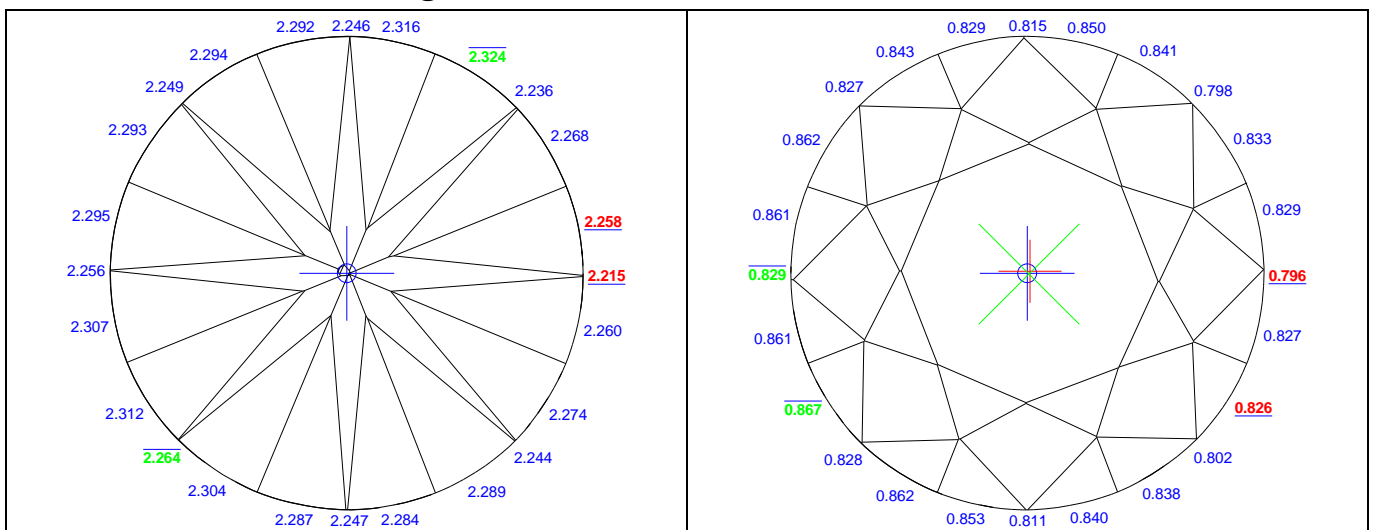


**Pavilion and crown views of the diamond with indication of facets' azimuth angles**

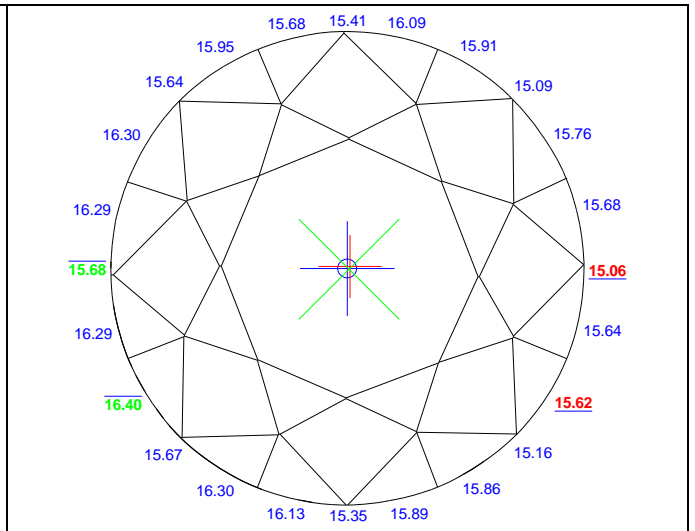
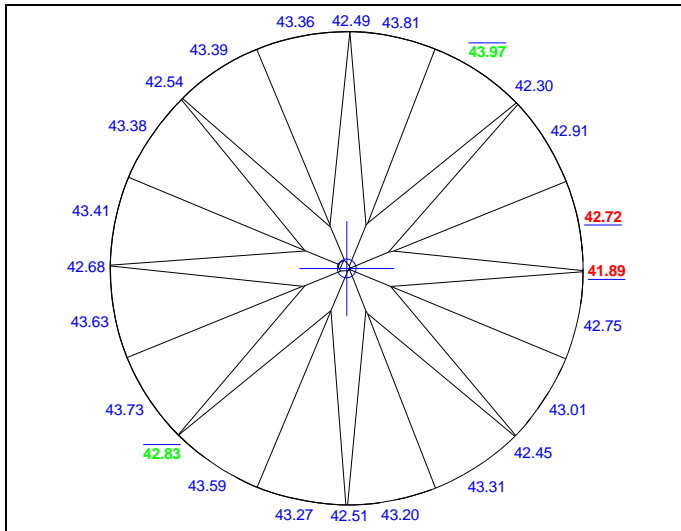


**Pavilion and crown views of the diamond with indication of deviation of facets' azimuth angles from their ideal positions for the round brilliant**

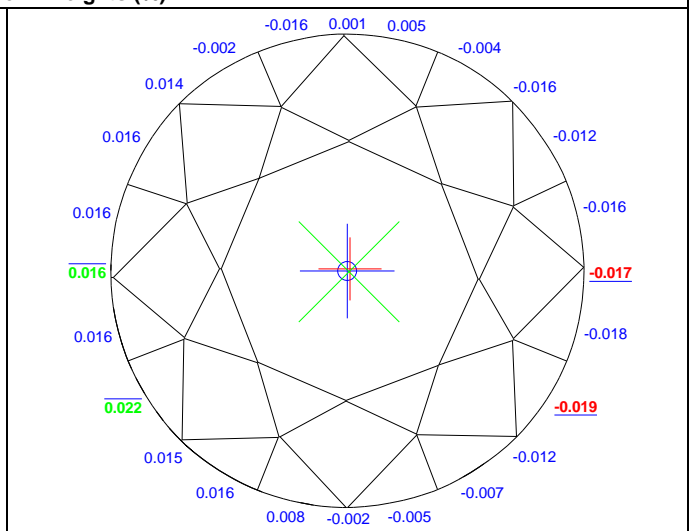
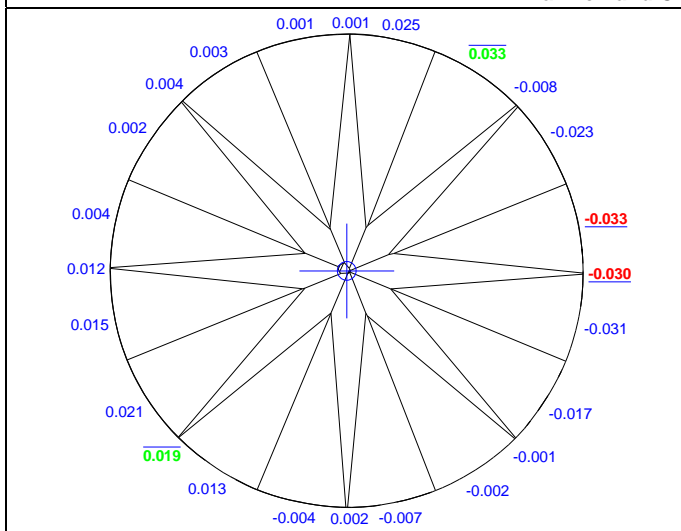
### ***Pavilion and Crown heights***



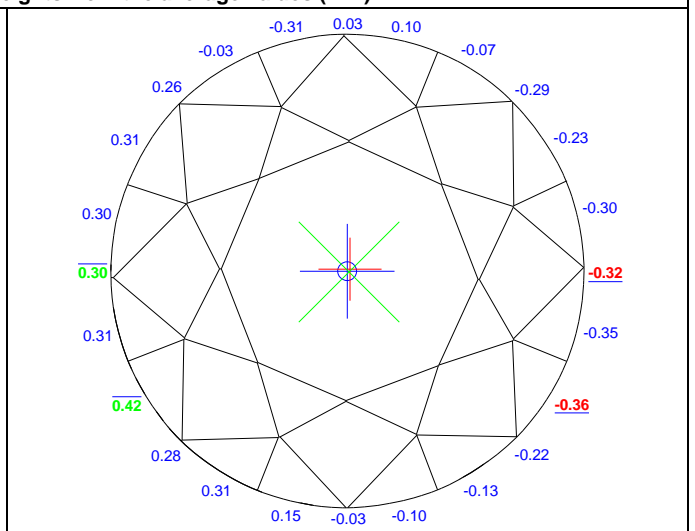
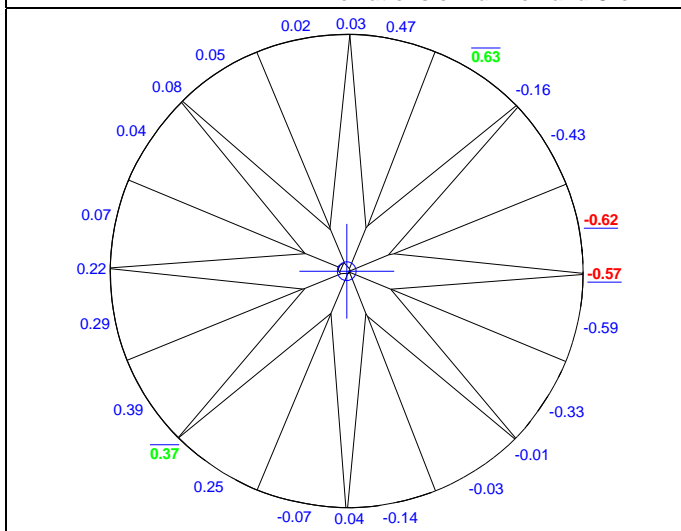
**Pavilion and Crown heights (mm)**



**Pavilion and Crown heights (%)**

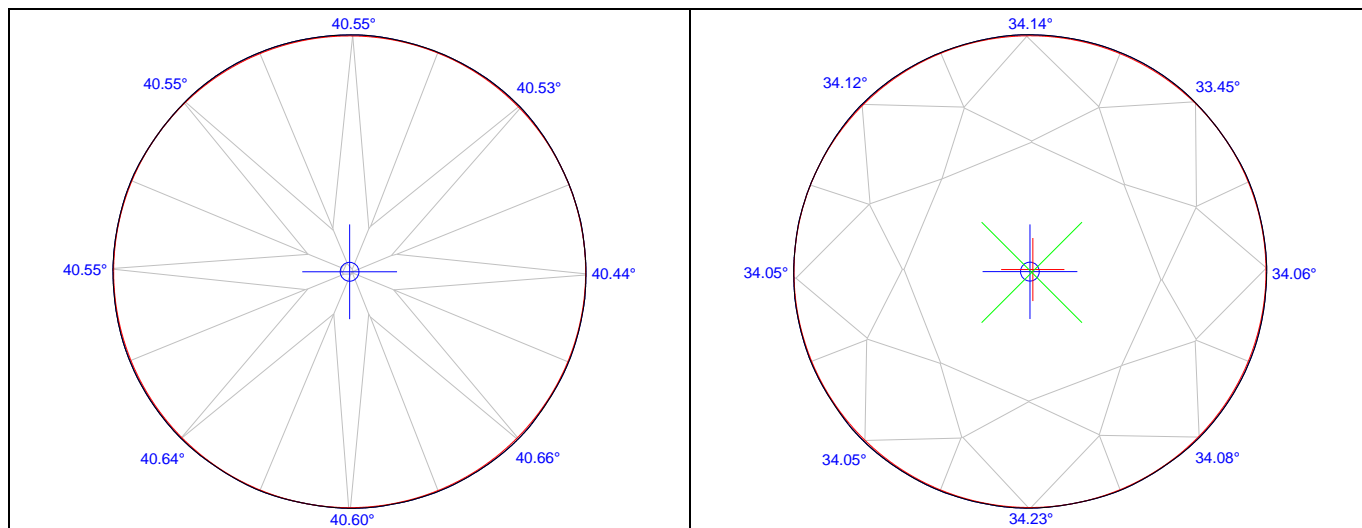


**Deviations of Pavilion and Crown heights from the average values (mm)**

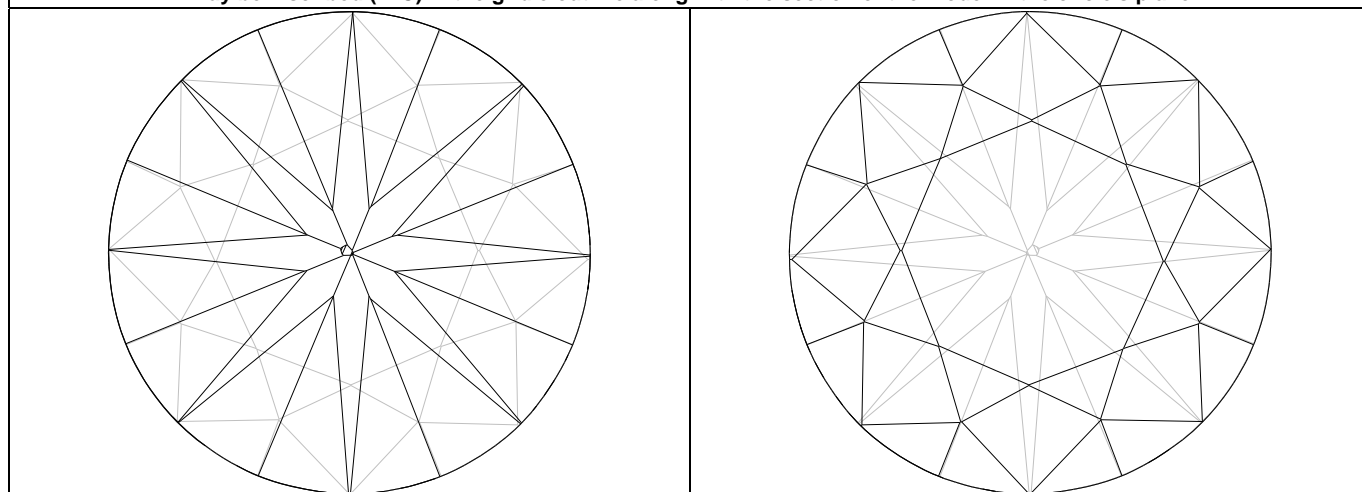


**Deviations of Pavilion and Crown heights from the average values (%)**




## Additional illustrations



Pavilion and crown views of the diamond with indication of the maximum circle that may be inscribed (MIC) in the girdle outline along with the section of the model in the circle's plane



Pavilion and crown views of the diamond with indication of invisible edges without refraction

	Girdle center		Culet center		Table center
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