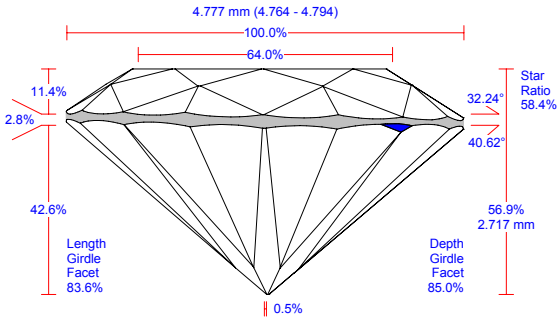
HELIUM FULL REPORT — Polished Brilliant

General information

Model	Simple
Expert name	Makoed A.G.
Report date	18.07.2006
Real weight, ct	
Calculated weight, ct	0.37, 0.3756
Spread	0.03 ct, -8.38%
Appraiser title	GIA
Overall cut quality	F
Overall symmetry quality	PR
Total height	2.717 mm, 56.88 %
Total height quality	N/A
Crown painting	Small
Crown painting type	Painting
Pavilion painting	Absent
Pavilion painting type	
Girdle-Culet offset (by table axis)	1.52 ± 0.26 %, 0.059 ± 0.011
Girdle-Table offset (by table axis)	1.24 ± 0.23 %, 0.073 ± 0.012
Culet-Table offset (by table axis)	1.83 ± 0.27 %, 0.087 ± 0.013
Girdle to table-culet line offset	1.07 %, 0.051 mm
EF / Nat	Yes (2)



Main parameters

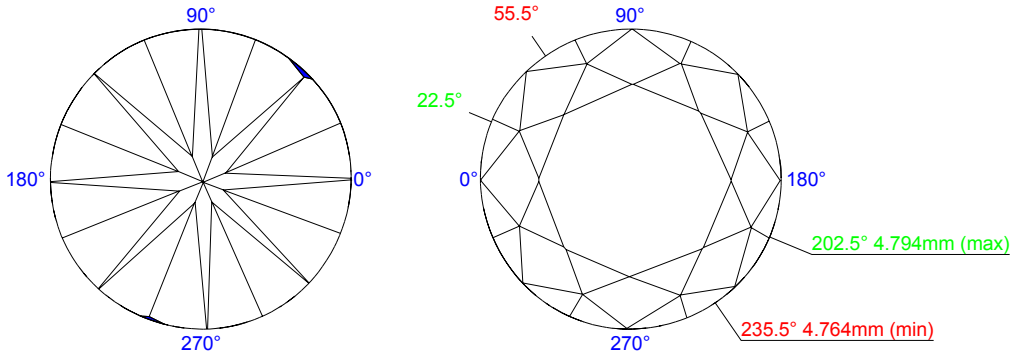
Parameter		Avg	Min	Max	Dev	Cut	Sym
Diameter	mm	4.777	4.764	4.794	0.62 %	E-VG	EX
Crown angle	°	32.24	31.05	32.55	1.50	G	VG
Crown height	%	11.37	10.64	12.34	1.71	N/A	VG
Crown height	mm	0.543	0.508	0.590	0.082	-	-
Crown height at girdle minima	%	11.96	10.93	13.04	2.10	N/A	-
Crown height at girdle minima	mm	0.571	0.522	0.623	0.100	-	-
Pavilion angle	°	40.62	39.63	41.47	1.84	N/A	VG
Pavilion depth	%	42.64	41.67	43.72	2.05	G	GD
Pavilion depth	mm	2.037	1.990	2.088	0.098	-	-
Pavilion depth at girdle minima	%	43.42	42.41	44.69	2.28	N/A	-
Pavilion depth at girdle minima	mm	2.074	2.026	2.135	0.109	-	-
Lower girdle facets angle	°	41.53	40.54	42.44	1.91	-	VG
Lower girdle facets height	%	37.15	35.68	38.41	2.73	-	GD
Lower girdle facets height	mm	1.775	1.704	1.835	0.131	-	-
Depth Girdle Facet	%	84.95	83.10	86.69	3.60	N/A	-
Length Girdle Facet	%	83.64	81.71	85.34	3.63	-	-
Upper girdle facets angle	°	39.91	38.83	41.11	2.28	-	GD
Upper girdle facets height	%	7.92	6.98	8.90	1.91	-	-
Upper girdle facets height	mm	0.378	0.334	0.425	0.091	-	-
Star facets angle	°	18.79	17.63	19.85	2.21	-	GD
Star : Upper ratio	%	58.39 : 41.61	54.01 : 45.99	63.15: 36.85	9.14	-	PR
Table	%	64.05	63.84	64.15	0.31	F	EX
Table	mm	3.060	3.050	3.064	0.015	-	-
Culet	%	0.53	0.35	0.63	0.28	E-VG	EX
Culet	mm	0.025	0.017	0.030	0.013	-	-
Twist	°	1.38	0.03	3.61	3.58	-	VG
Girdle thickness: Bezel	%	2.84	2.39	3.40	1.01	N/A	EX
Girdle thickness: Bone	%	3.30	2.94	3.80	0.86		EX
Girdle thickness: Valley	%	1.53	1.16	1.98	0.82	N/A	EX
Girdle thickness: Bezel	mm	0.136	0.114	0.162	0.048		
Girdle thickness: Bone	mm	0.158	0.140	0.181	0.041		
Girdle thickness: Valley	mm	0.073	0.055	0.095	0.039		
Crown painting	°	-1.58		-4.24			
Crown painting	notches	0.4		1.1			
Pavilion painting	°	-0.30		-2.07			
Pavilion painting	notches	0.1		0.6			
Measurement as per OctoNus theory:							
Crown angle	°	32.24	31.80	32.42	0.62	-	-
Pavilion angle	°	40.62	40.52	40.82	0.31	-	-
Culet through bezel	°	25.30				E-VG	-
Fish eye effect	°	3.36				G	-
Girdle to MIC	mm	0.018				-	-

Detailed parameters

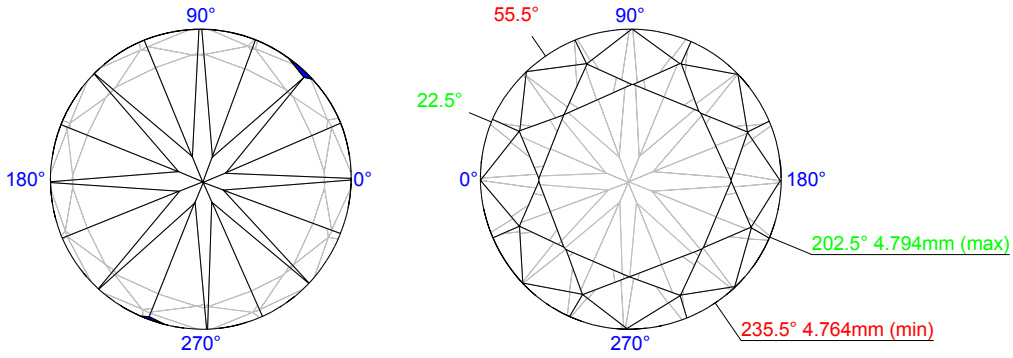
Parameter		1	2	3	4	5	6	7	8
Diameter	mm	4.783	4.772	4.775	4.775				
Crown angle	°	32.41	32.54	32.14	31.05	32.44	32.24	32.52	32.55
Crown height	%	12.34	12.14	11.54	10.84	10.64	10.64	11.16	11.64
Crown height	mm	0.590	0.580	0.551	0.518	0.508	0.508	0.533	0.556
Crown height at girdle minima	%	13.04	12.83	12.60	12.35	12.10	11.65	11.35	11.38
		10.98	10.93	11.30	11.68	11.81	12.06	12.41	12.95
Crown height at girdle minima	mm	0.623	0.613	0.602	0.590	0.578	0.556	0.542	0.544
		0.525	0.522	0.540	0.558	0.564	0.576	0.593	0.618
Crown azimuth	°	0.0	45.8	89.6	134.6	177.7	226.2	270.1	318.2
Crown azimuth deviation from ideal	°	0.04	0.81	-0.38	-0.42	-2.31	1.24	0.08	3.22
Pavilion angle	°	40.33	40.29	39.63	40.12	40.71	41.36	41.47	41.04
Pavilion depth	%	41.67	42.24	41.95	42.85	43.48	43.72	43.06	42.18
Pavilion depth	mm	1.990	2.018	2.004	2.047	2.077	2.088	2.057	2.015
Pavilion depth at girdle minima	%	42.44	42.91	42.90	42.58	42.87	43.49	43.90	44.18
		44.38	44.69	44.33	44.06	43.65	43.21	42.76	42.41
Pavilion depth at girdle minima	mm	2.027	2.050	2.050	2.034	2.048	2.077	2.097	2.110
		2.120	2.135	2.118	2.105	2.085	2.064	2.043	2.026
Pavilion azimuth	°	0.0	45.1	90.2	136.6	181.3	225.4	270.1	315.0
Pavilion azimuth deviation from ideal	°	0.00	0.09	0.15	1.58	1.30	0.36	0.11	0.03
Lower girdle facets angle	°	41.08	41.11	41.06	40.54	40.61	40.95	41.30	41.52
		41.79	42.22	42.39	42.44	42.24	42.04	41.80	41.35
Lower girdle facets height	%	36.47	36.56	36.30	35.68	36.11	36.47	37.18	37.39
		37.64	38.17	38.25	38.41	38.11	37.46	37.32	36.94
Lower girdle facets height	mm	1.742	1.747	1.734	1.704	1.725	1.742	1.776	1.786
		1.798	1.824	1.827	1.835	1.821	1.790	1.783	1.764
Lower girdle facets azimuth	°	11.1	35.9	55.0	79.7	102.4	125.6	148.2	170.5
		192.6	215.4	237.6	259.5	281.5	304.1	326.1	348.6
Lower girdle facets azimuth deviation from ideal	°	-0.16	2.15	-1.28	0.91	1.13	1.88	1.93	1.72
		1.40	1.65	1.33	0.71	0.27	0.38	-0.13	-0.17
Depth Girdle Facet	%	85.39	84.47	83.85	83.13	83.69	83.10	84.16	84.00
		84.30	84.79	85.66	86.63	86.69	86.19	86.64	86.55
Length Girdle Facet	%	84.20	83.27	82.67	81.94	82.31	81.71	82.81	82.65
		83.09	83.59	84.35	85.34	85.25	84.74	85.21	85.13
Upper girdle facets angle	°	39.58	39.28	39.61	40.30	40.18	39.70	39.31	40.03
		40.83	38.83	41.11	40.21	40.92	39.53	39.39	39.82
Upper girdle facets height	%	8.90	8.74	8.15	7.96	7.83	7.34	7.46	7.51
		7.16	6.98	7.40	7.69	8.05	8.31	8.32	8.86
Upper girdle facets height	mm	0.425	0.417	0.389	0.380	0.374	0.350	0.356	0.359
		0.342	0.334	0.354	0.368	0.384	0.397	0.398	0.423
Upper girdle facets azimuth	°	9.9	36.0	55.0	79.0	99.8	124.5	145.0	169.4
		187.5	219.2	236.7	261.8	281.0	308.8	327.7	349.2
Upper girdle facets azimuth deviation from ideal	°	-1.33	2.29	-1.24	0.26	-1.41	0.73	-1.26	0.63
		-3.73	5.48	0.44	3.01	-0.25	5.07	1.50	0.48
Star facets angle	°	19.32	19.37	19.22	18.60	17.63	18.30	18.04	19.85
Star : Upper ratio	%	54.65 : 45.35	57.84 : 42.16	60.63 : 39.37	58.79 : 41.21	63.15 : 36.85	60.26 : 39.74	57.78 : 42.22	54.01 : 45.99
Star facets azimuth	°	21.5	65.9	112.3	155.6	202.7	248.9	293.4	339.1
Star facets azimuth deviation from ideal	°	-0.96	-1.59	-0.22	-1.92	0.17	1.45	0.91	1.61
Table	%	64.07	64.15	64.14	63.84				
Table	mm	3.061	3.064	3.064	3.050				
Twist	°	0.04	0.73	0.54	2.00	3.61	0.88	0.03	3.19
Girdle Bezel	%	2.87	2.39	3.40	3.19	2.72	2.47	2.60	3.06
Girdle Bone	%	2.99	3.54	3.44	3.07	3.80	2.94	3.59	3.05
Girdle Valley	%	1.43	1.16	1.38	1.98	1.96	1.76	1.68	1.35
		1.63	1.34	1.27	1.17	1.44	1.70	1.73	1.54
Girdle Bezel	mm	0.137	0.114	0.162	0.153	0.130	0.118	0.124	0.146
Girdle Bone	mm	0.143	0.169	0.164	0.147	0.181	0.140	0.171	0.146
Girdle Valley	mm	0.068	0.055	0.066	0.095	0.094	0.084	0.080	0.065
		0.078	0.064	0.060	0.056	0.069	0.081	0.083	0.074
Crown painting	°	-1.37	-1.48	-2.05	-0.65	-1.03	-1.14	-0.84	-2.94
		-1.42	-4.24	-0.80	-2.93	-0.33	-1.85	-1.72	-0.43
Crown painting,	notches	0.4	0.4	0.5	0.2	0.3	0.3	0.2	0.8
		0.4	1.1	0.2	0.8	0.1	0.5	0.5	0.1
Pavilion painting	°	-0.16	-2.07	-1.37	-0.75	0.98	-0.30	0.35	-0.41
		0.10	-1.29	0.97	-0.60	0.16	-0.35	-0.16	0.17
Pavilion painting	notches	0.0	0.6	0.4	0.2	0.3	0.1	0.1	0.1
		0.0	0.3	0.3	0.2	0.0	0.1	0.0	0.0
Measurement as per OctoNus theory:									
Crown angle	°	32.42	32.39	32.33	31.80				
Pavilion angle	°	40.52	40.82	40.55	40.58				

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

Invisible edges are hidden

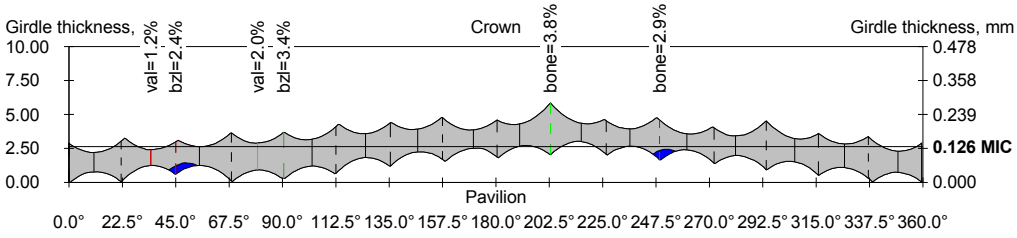


Invisible edges are drawn taking refraction into account

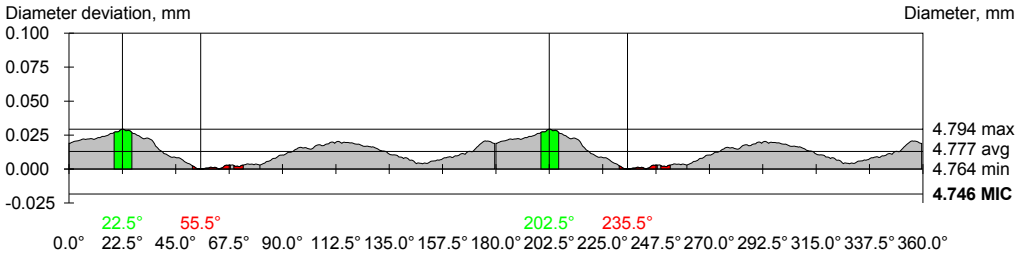


Plots

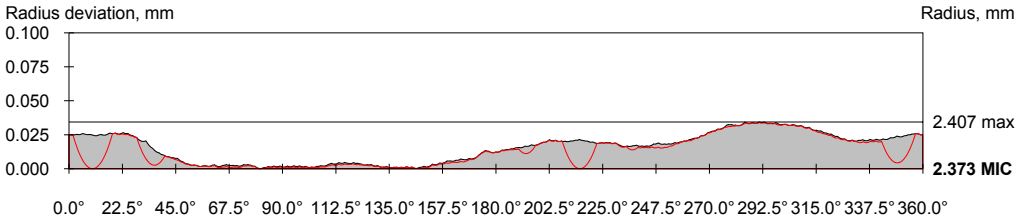
Girdle thickness plot



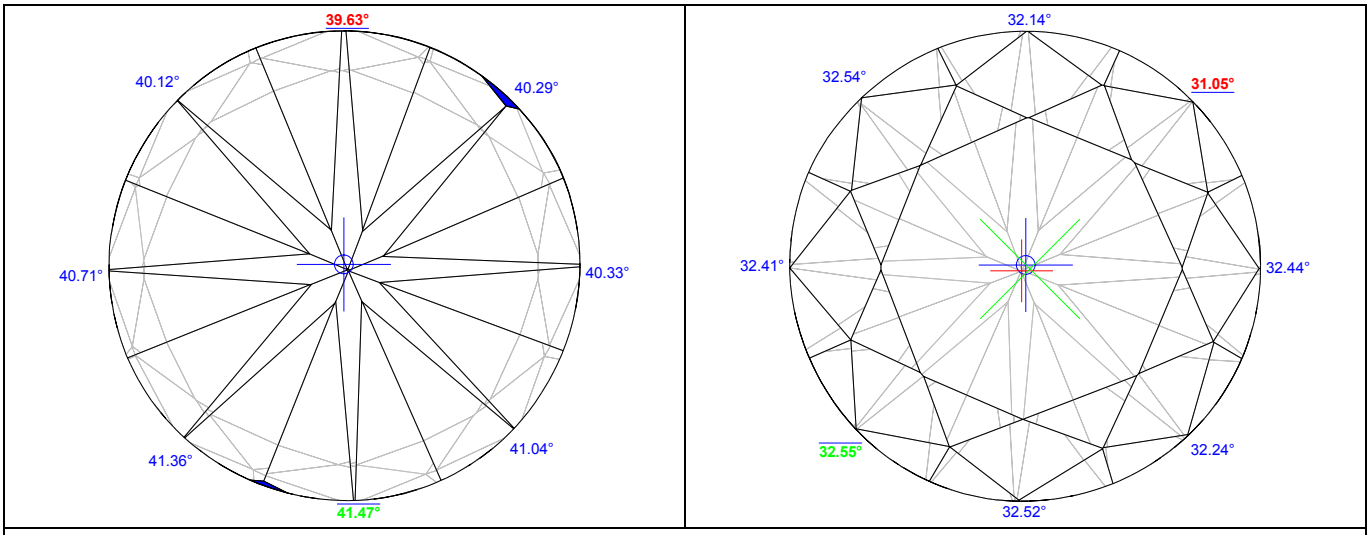
Diameter variation plot



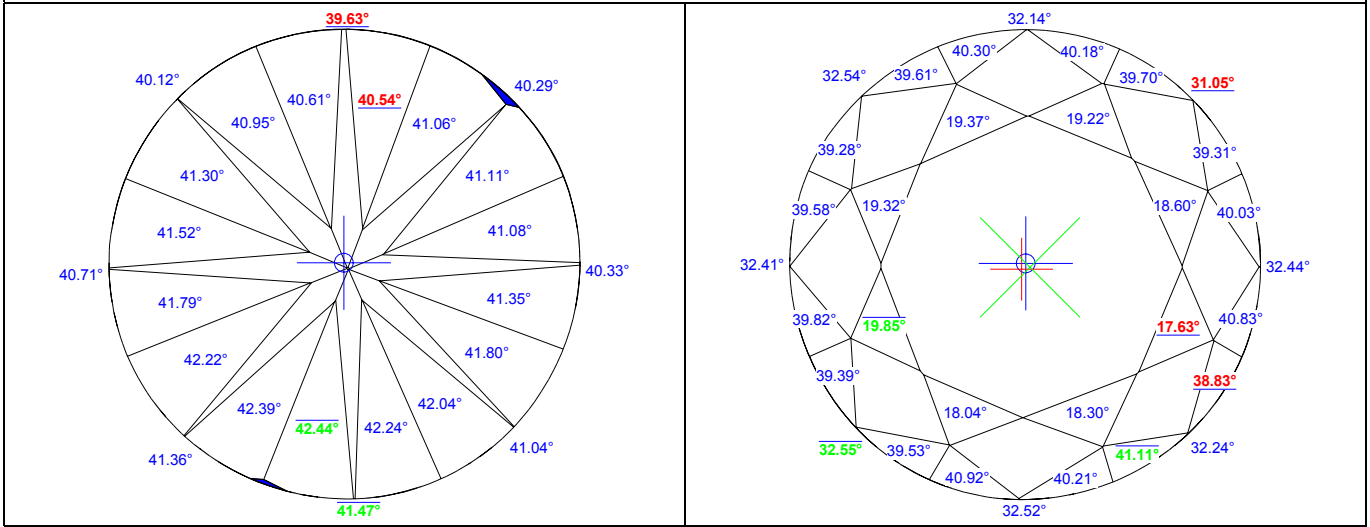
Radius variation plot



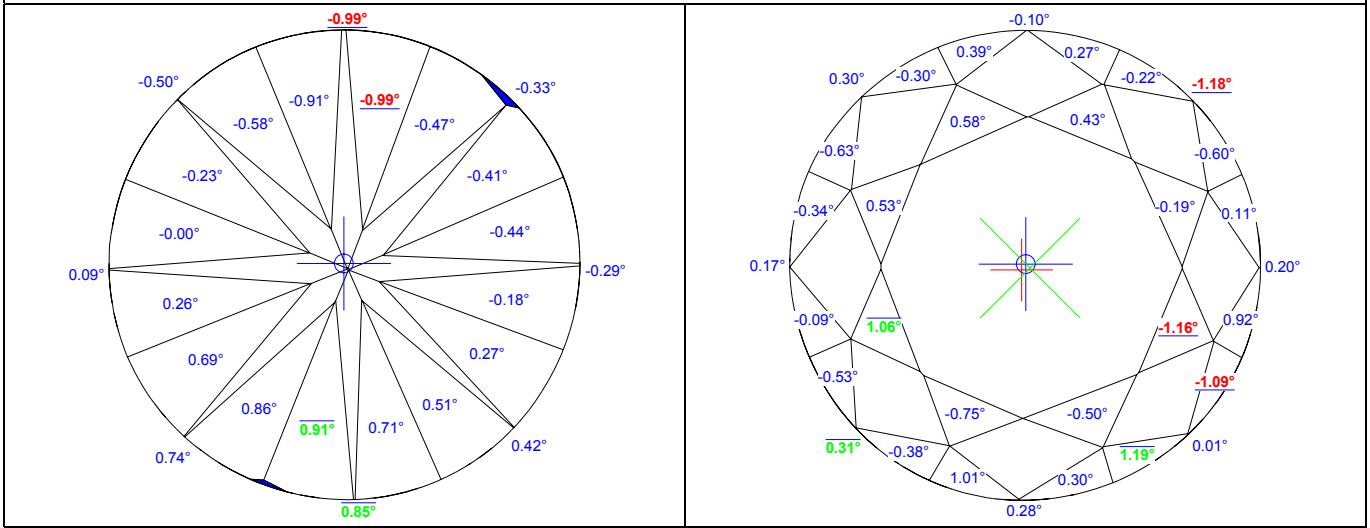
Facets' azimuth and slope angles



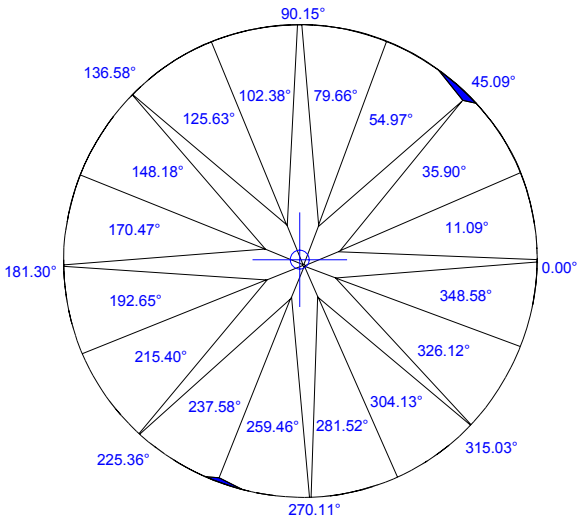
Pavilion and crown views of the diamond with indication of main facets' slope angles
Invisible edges are drawn taking refraction into account

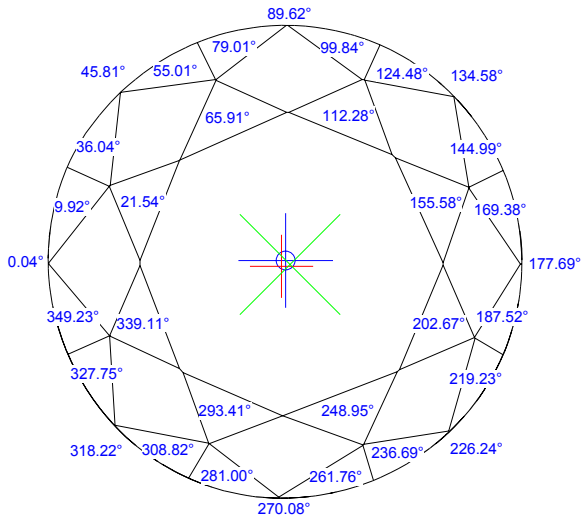


Pavilion and crown views of the diamond with indication of facets' slope angles

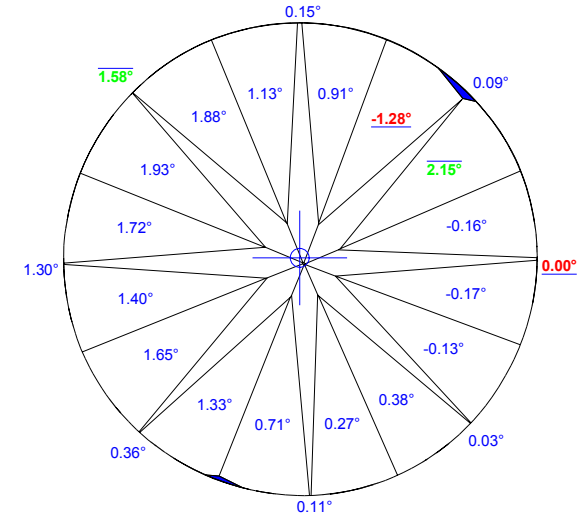


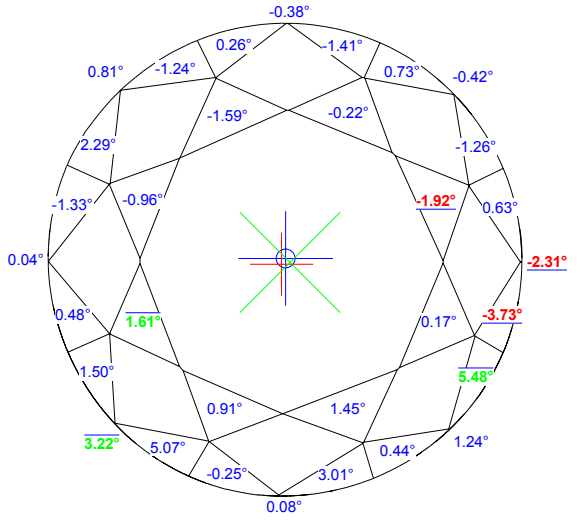
Pavilion and crown views of the diamond with indication of deviation of facets' slope angles
from the average values





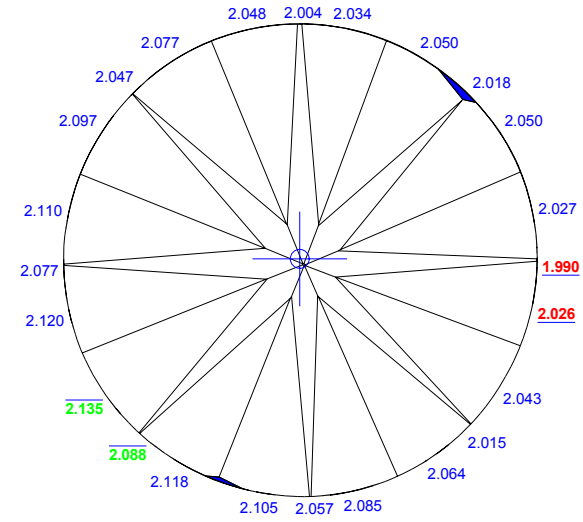
Pavilion and crown views of the diamond with indication of facets' azimuth angles

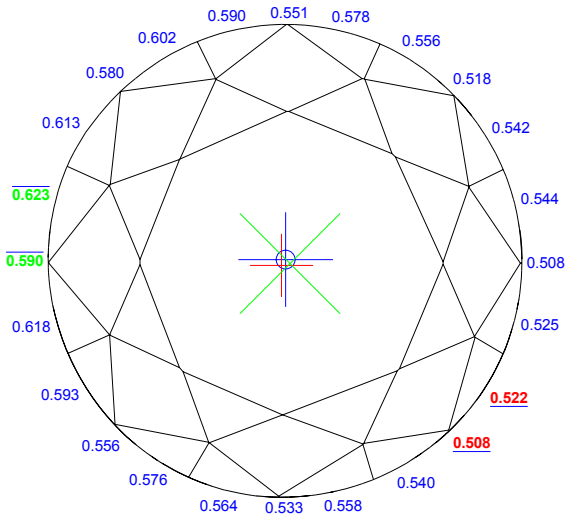




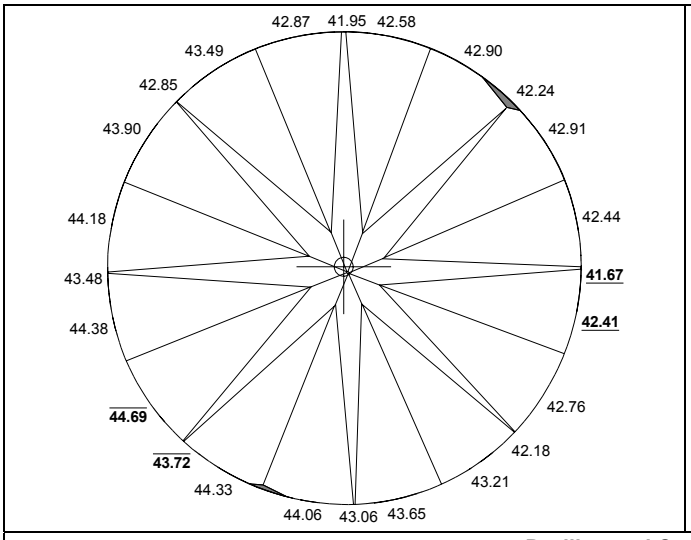
Pavilion and crown views of the diamond with indication of deviation of facets' azimuth angles from their ideal positions for the round brilliant

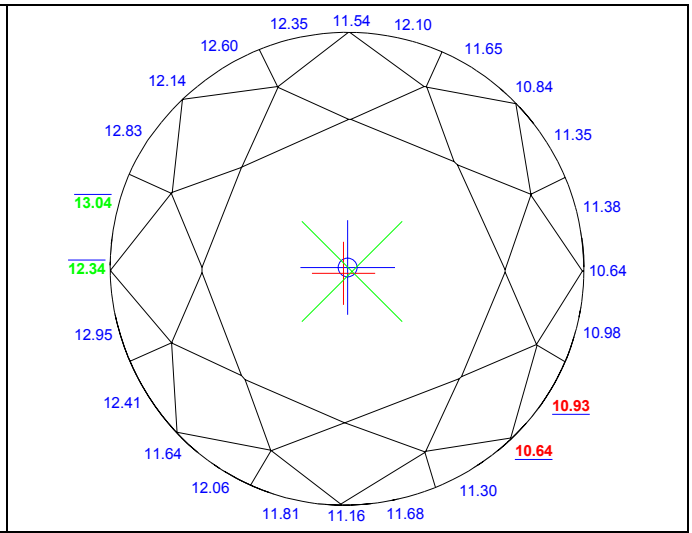
Pavilion and Crown heights



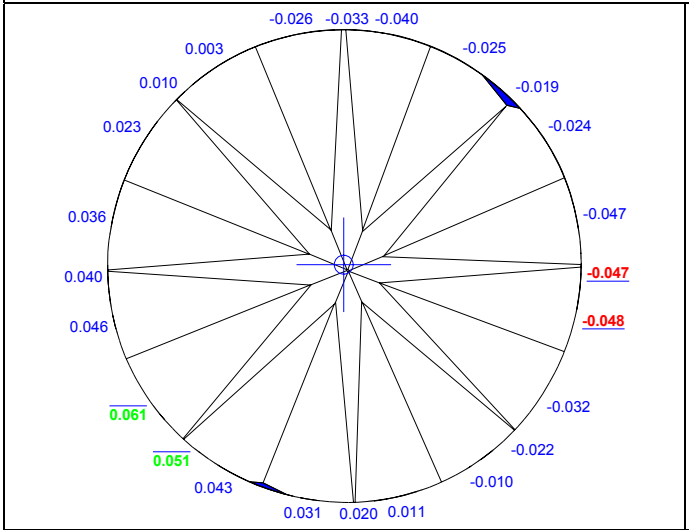


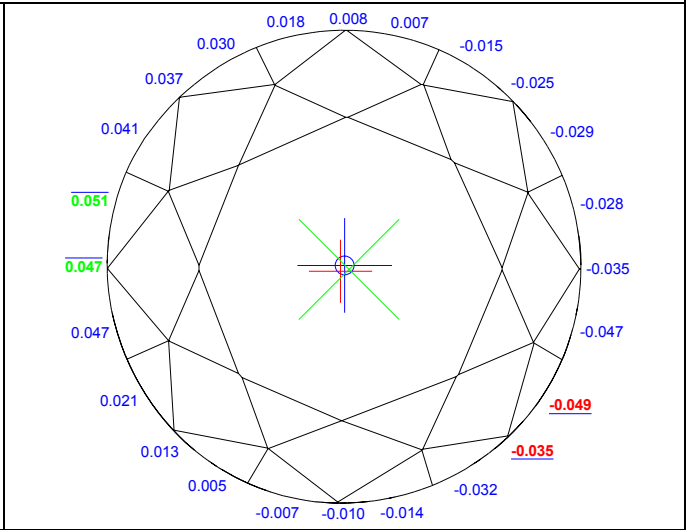
Pavilion and Crown heights (mm)



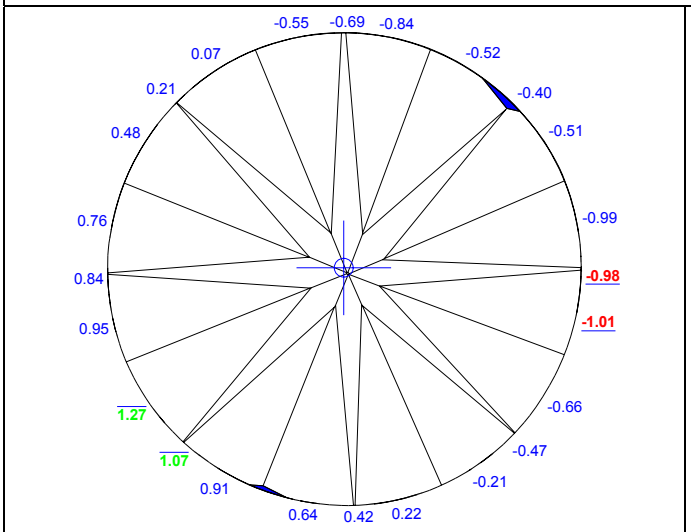


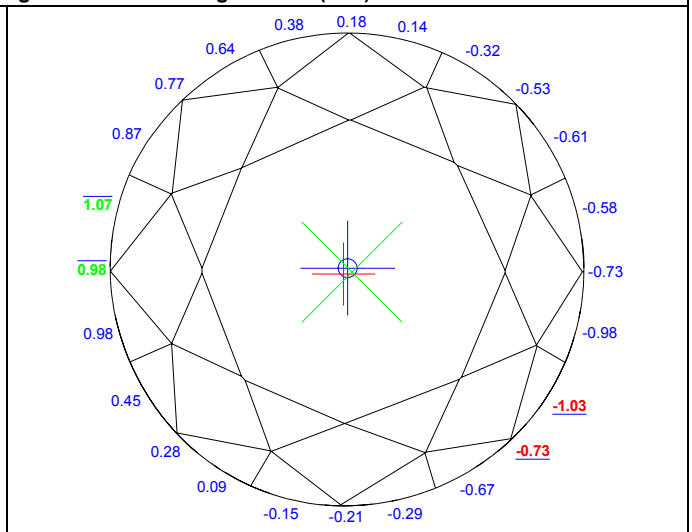
Pavilion and Crown heights (%)





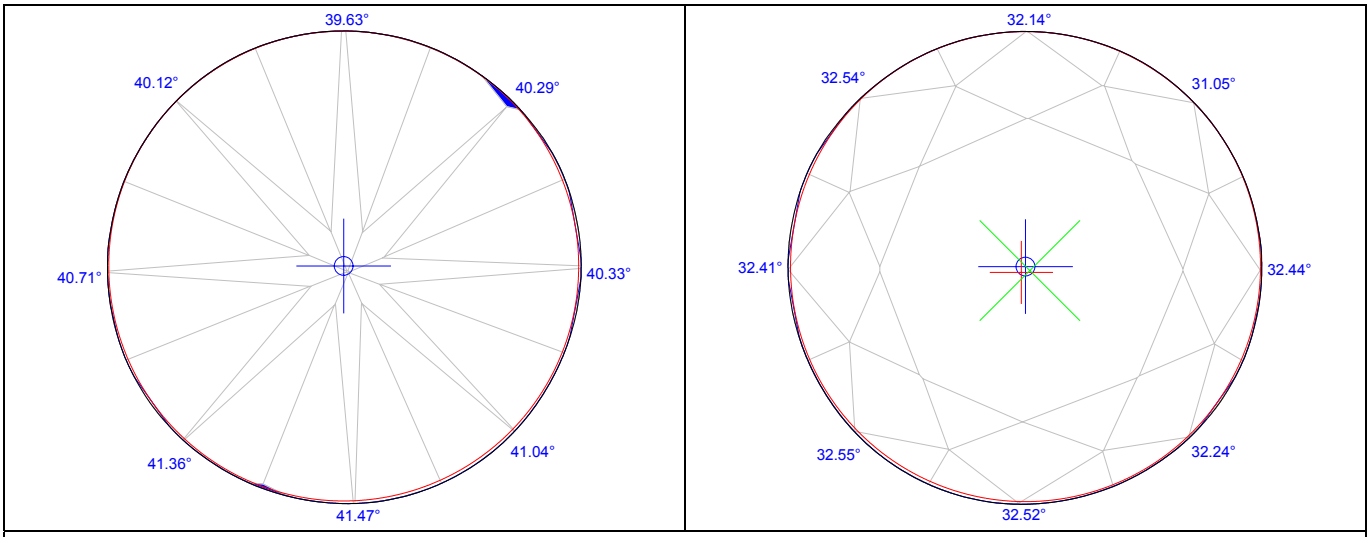
Deviations of Pavilion and Crown heights from the average values (mm)



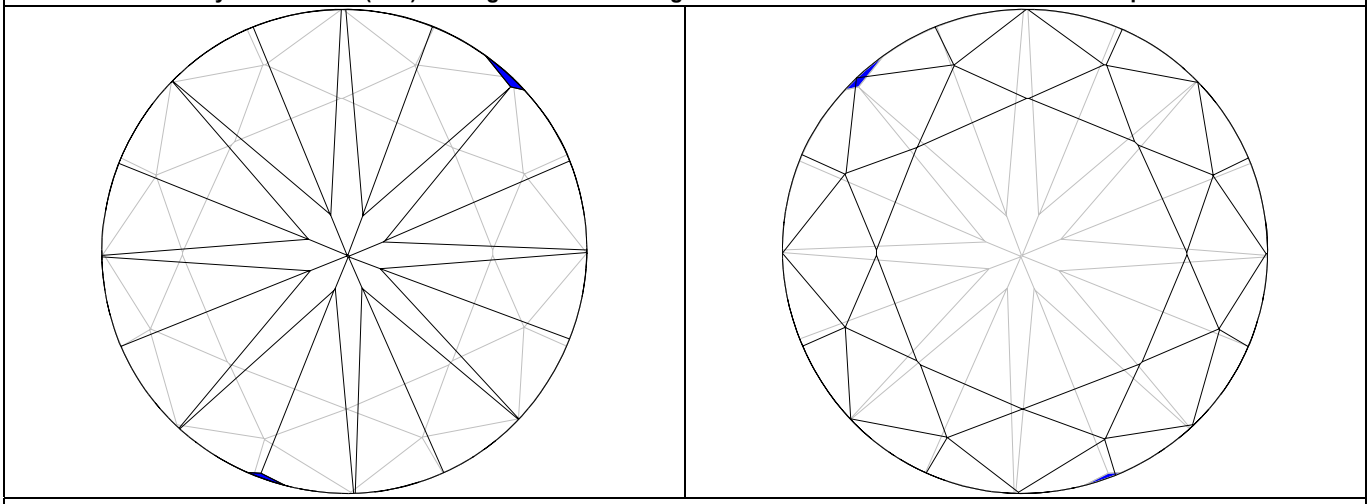


Deviations of Pavilion and Crown heights from the average values (%)

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**