

SOFTWARE PLOTS DIAMONDS, HELPS IDENTIFY GEMS

by Michael Thompson and Robert Weldon, senior editors

The new Adamas Advantage software is designed to help gemologists and appraisers identify and analyze gemstones. It also has color graphic capabilities to represent gemstone proportions and to plot inclusions and can cross the gap between commonly used color systems such as the Gemological Institute of America's ColorMaster and GemDialogue.

The software features a vast database of gem nomenclature and properties, including color, specific gravity, refractive index, heft, pleochroism, fluorescence, luster, fracture and many other parameters. A trained gemologist simply enters the observed measured values (which include rarely used ones such as two-V angles, optic character and optical dispersion). Adamas helps to narrow the possibilities, arriving finally at a gemstone selection.

The database covers more than 500 gem and mineral materials (with their varieties) from amber to zoisite, including such obscurities as hauyne, sordianite and jeremjevite. More than a dozen major gemological tomes and treatises were referenced to help create the database, including *Color Encyclopedia of Gemstones* by Joel Arem and *Encyclopedia of Minerals* (second edition) by Roberts, Campbell and Rapp.

The software automatically draws a gemstone to correct proportions in up to three dimensions based on pa-

The plotting, dimensions and reporting of a diamond can be simplified and easily generated by entering the gemstone's data into the Adamas Advantage program.

ADAMAS GEMOLOGICAL LABORATORY
Developers Of The Adamas Advantage

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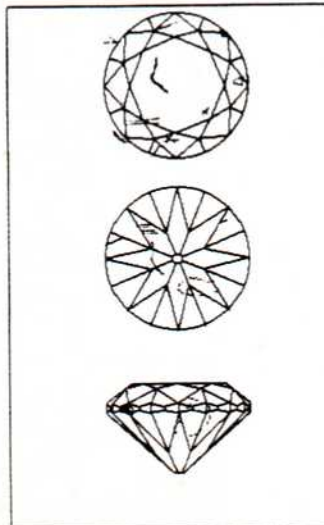
◇ ACCUPLLOT™ DIAMOND QUALITY ANALYSIS REPORT BIGROCK 7/29/94

DIAMOND SHAPE IS ROUND BRILLIANT
 MAXIMUM DIAMETER (MM) 10.25
 MINIMUM DIAMETER (MM) 10.25
 DEPTH (MM) 6.35

MEASURED WEIGHT (CT)	4.28
CLARITY GRADE IS	I1
COLOR GRADE IS	J
MAKE (CUT) GRADE IS	CLASS 4

PROPORTIONS SHOWN ON GEMSTONE DIAGRAM
 TABLE PERCENTAGE IS 66.00
 CROWN ANGLE (DEGREES) 39.16
 CROWN HEIGHT PERCENTAGE 13.85
 AVERAGE GIRDLE PERCENTAGE 6.71 FACETED
 GIRDLE EXTREMELY THICK
 PAVILION PERCENTAGE 41.40
 CULET PERCENTAGE IS 7.00
 CULET SIZE MAY EFFECT CUT GRADE

TOTAL DEPTH PERCENTAGE 61.95
 PROPORTION GRADE IS POOR
 PROPORTIONS MAJOR SYMMETRY FAULTS
 T/∞ C/∞ OR T/G VG
 PROPORTIONS SHAPE APPEAL FAULTS
 C/∞ K/∞
 FINISH GRADE IS FAIR
 FINISH POLISH FAULTS
 Abr BG Hk S Pit PL PM RG
 FINISH MINOR SYMMETRY FAULTS
 T/∞ C/∞ OR Pit Ain T/∞ Fac T/G VG N indM EF
 LONG WAVE FLUORESCENCE COLOR IS BLUE
 NO SW FLUORESCENCE NOTED



IS ITEMS PLOTTED

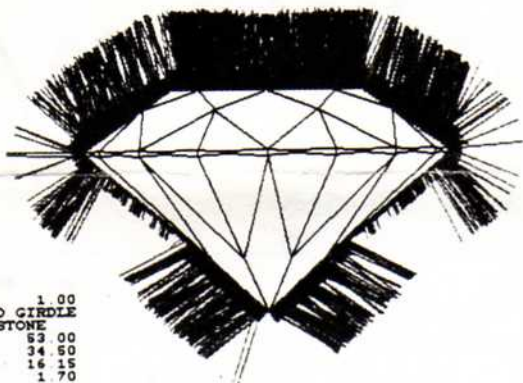
N
 Abr
 Hk
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 Ktl
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 Clv
 GrCnt
 Mdl
 indM
 Cv
 Ch
 K
 LDH
 EF

WARNING FRACTURE FILL OF GEMSTONE MAY NOT BE STABLE UNDER HEAT
 COMMENTS

REPORT FORMAT WITH ACCUPLLOT™ CREATED BY THE ADAMAS ADVANTAGE (C) 1993-1994

ACCUPLOT(™) QUALITY ANALYSIS

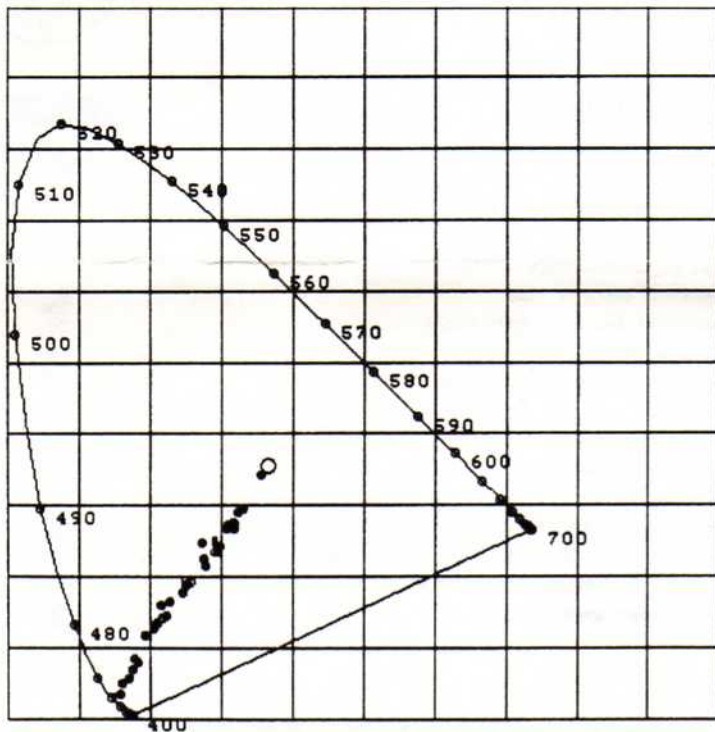
AVERAGE BASED ON 999 SAMPLES +/- 45 0 DEGREES FROM TABLE NORMAL
 AVERAGE % RETURNED LIGHT IS 75.2
 AVERAGE LIGHT LOST IS 24.8 %



WEIGHT 1.00
 FACETED GIRDLE
 CLEAN STONE
 TABLE 53.00
 CR ANG 34.50
 CR HT 16.15
 GIRDLE 1.70
 PAV 43.10
 CULET .00
 TOTAL 60.95
 EVALUATES AS A CLASS 1 IDEAL MAKE
 ESTIMATED DIAMETER OF 1CT STONE 6.53MM

COLORMASTER HUE 2 bluish Violet

GIA CIE CHROMATICITY COORDINATES (x,y) ref 0.365, 0.367



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rameters such as table size and crown height.

It also may be used to generate a diamond or colored stone quality-analysis report or a gemstone identification report. Adamas includes a universal color language (Commission Internationale D'Éclairage) chromacity diagram that plots and serves as a conversion for ColorMaster notation. This conversion has never been published before.

The high-resolution plot capability generates a unique ray trace display that illustrates light loss in diamonds as a function of cut parameters. Jewelers can use this feature as a marketing tool to sell fine cut diamonds. The software reportedly also is the first in the industry to incorporate automatic brilliant and fancy-cut diamond diagrams in accordance to the proportions entered.

Retailers can use the resulting report, called Accuplot, to improve sales by inviting customers to comparison shop.

The developer of the program, Martin D. Haske, is a GIA graduate gemologist and a designated member of the International Society of Appraisers. He operates an Accredited Gemologists Association Certified Gem Laboratory.

Adamas Gemology Laboratory,
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Top: Curious as to how the gem's cutting dimensions affect its return of light? Plug in the gem's values to see where and how the light entering a gem is lost.

Bottom: Would you like to see where the GIA ColorMaster coordinates lie on the CIE chart? Enter the values and see.