

Diamond Evaluation: the Cutting Edge

Last month the first in this three-part series discussed the importance of consumer knowledge of color in diamonds. This month's installment addresses the importance of cut

BY PETER GOLLON AND UDI LEDERER

You probably have an easy time explaining the carat weight, color and clarity of diamonds to customers. The fourth C – cut – can be another matter.

One straightforward approach is to show an on-screen representation of the actual diamond using a diamond proportion analyzer from OGI Systems or Sarin Technologies. Then you can explain more easily why a diamond with a symmetrical cut is more expensive than a poorly cut one of the same weight.

Educating customers in this manner is an easy way to get them to spend more for higher quality merchandise – the more they know, the harder they find it to buy an inferior product. And for customers who aren't ready to buy, you can at least gain credibility by sending them home with a printed report. They will appreciate the knowledge, even if they're unsure what it all means.

This latter point is important. While it's harder to explain such subtleties as crown and pavilion angles, it's easy with a diamond proportion analyzer to show why a customer wouldn't want to buy a diamond with crown facets that don't line up with pavilion facets.

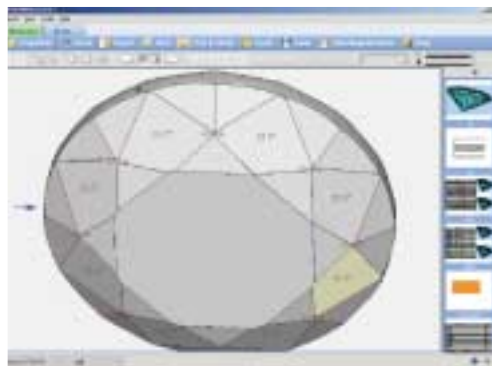
Still, you won't have an easy answer for every aspect of cut. Factors used in grading cut differ from lab to lab, may not be public knowledge and change with time. Even in-depth studies designed to answer complex questions can yield equally complex answers. Recent studies by the Gemological Institute of America and others show that some brilliant cuts with angles significantly different from those of the Tolkowsky Ideal cut have the same brilliance (amount of light returned) and fire (dispersion of white light into colored spectra).

As a result, GIA researchers have undertaken an empirical evaluation of hundreds of different round brilliants by many people – consumers as well as professionals – under a variety of lighting conditions.

Alternatives

Some in the industry, including GemEx, have stopped talking about cut and now discuss how a diamond looks to the eye under well-defined viewing conditions. GemEx uses sophisticated, expensive equipment in a fee-based service that evaluates the light performance of their clients' diamonds; retailers can show the light performance in their stores with a BrillianceScope Viewer. All this is designed to eliminate what the GemEx Web site (www.gemex.com) describes as the fifth C, "confusion."

Others in the trade use simple viewers such as the Holloway IdealScope, EightStar's Firescope and the Eroscope to evaluate light return, with the claim that deviations from symmetry or exacting cut proportions will lead to "dead" areas with poor light



DiaVision 3D software, which works on larger Sarin platforms, measures virtually any shape, displaying accurate information on major and minor symmetry to help evaluate light performance.

Views of well-cut (left) and poorly cut stones using a hearts-and-arrows viewer.

return. Advertising for these brands reflects this point of view.

How should you respond to demanding consumers and possibly conflicting data? Be open and present enough information to maintain your credibility. The danger is that too much information can confuse consumers and cause them not to buy at all.

Peter Gollon is president of Kassoy and has a doctorate in experimental physics. Udi Lederer has been a product manager at Sarin Technologies since early 2001 and has worked at ClickSoftware Technologies and Tetra Technologies.

Measuring Proportions & Symmetry

Here are some details about equipment used to measure the effectiveness of diamond cut

Proportion Scopes (distributed by GIA GEM Instruments) have been used for years to compare a round brilliant cut's proportions with those of the Tolkowsky Ideal cut.

They work by projecting an enlarged silhouette of the stone on a translucent screen with the Tolkowsky proportions. They permit easy measurement of crown and pavilion angles and other parameters relevant to cut quality. Computerized diamond proportion analyzers measure the shape by rotating the diamond while photographing its profile every few degrees.

Powerful computer programs then reconstruct the shape in three dimensions, including facet angles, girdle thickness and table percentages.

For tasks the Proportion Scope cannot perform – such as evaluating symmetry of the crown and pavilion facets of a brilliant cut or providing information about the weight loss resulting from recutting an old or poorly cut diamond – machines from OGI Systems and Sarin Technologies can be used to measure length, width, total depth, table size, crown height, pavilion depth, crown angles and pavilion angles of most round and fancy shapes.

They also indicate what cut grade a stone is likely to receive if submitted to labs with published cut standards. Examples:

- ◆ The Megascop by OGI Systems comes in one-, two- and three-channel units, The multichannel units provide flexibility for measuring diamonds of different sizes – from .01 to 45 carats.
- ◆ Sarin machines (sold by Kassoy) include the Brilliant Eye (0.35 to 5-ct. rounds, maximum diameter 11.5mm) and DiaVision 3D software, which works on larger Sarin platforms. The new software measures virtually any shape with any facet arrangement, displaying accurate information on major and minor symmetry (upper and lower girdle halves), generating a photorealistic model of the measured diamond to help evaluate its light performance.

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