

In the spirit of international cooperation and similar interests Mr vanZanten has made his work in (what we are calling RAY TRACING) available to us in the form of this article and details of his computer program which is written in PASCAL. Robert Long has translated this program into a compiled BASIC version which we have been able to implement on our IBM equipment. In addition to applying the "Brightness" information such as shown in the charts in this article we now can plot essentially "Brightness Maps" for different designs which correlate well with the other methods for evaluating facet designs we had been using. For example, the "Back Reflection Pattern" and "Thru Transmission of Light" which were published in previous SEATTLE FACETOR DESIGN NOTES.

By using a Camcorder we have video taped the computer screen while it was running the ray tracing program so that it produced a video animation of simulated light rays entering and passing through various combinations of facet designs (this is in combination with the dynamic plotting routine). This program has been used at one symposium and several Club meetings already, but will no doubt go through many changes before it is ready for a wider distribution.

Mr vanZantens computer program is based on a combination of sound theoretical physics and practical application. We think it is and will continue to be a very important contribution to the art of Faceting.

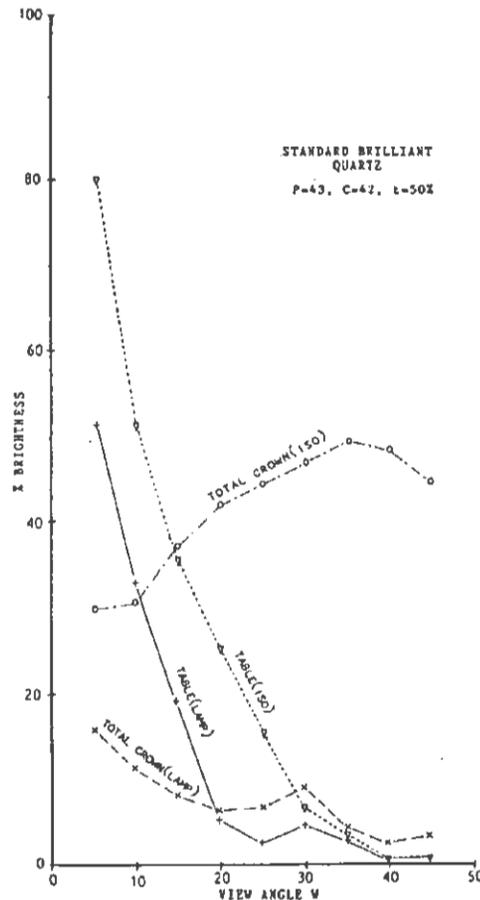


Figure 2 Calculated brightness values for a Quartz Brilliant with P=43, C=42, and t=50%

At view angles "W" up to 15 degrees, the viewer's head may cast some shadow on the stone (causing decreased brilliance).

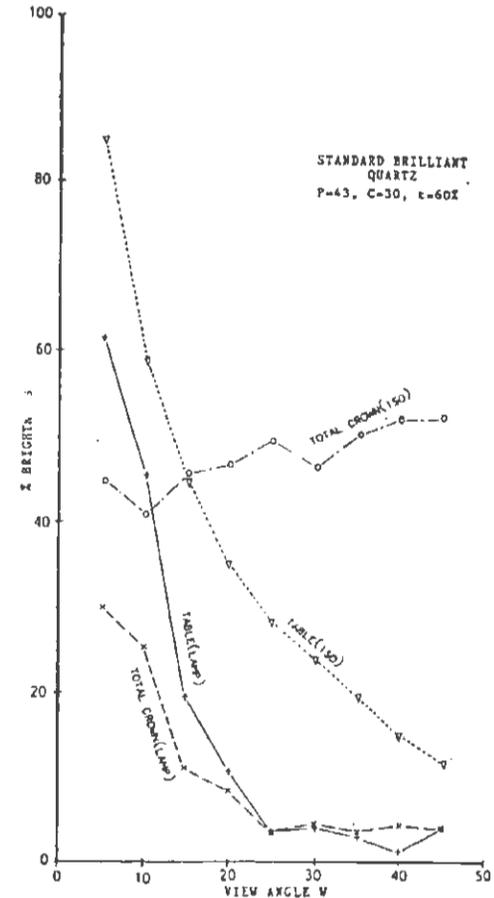


Figure 3 Quartz Brilliant same as Fig. 2 except C=30 and t=60%. This is the condition for a lower crown. It is an improvement over the C=42 and t=50% crown.