

SEATTLE FACETOR DESIGN April 1989

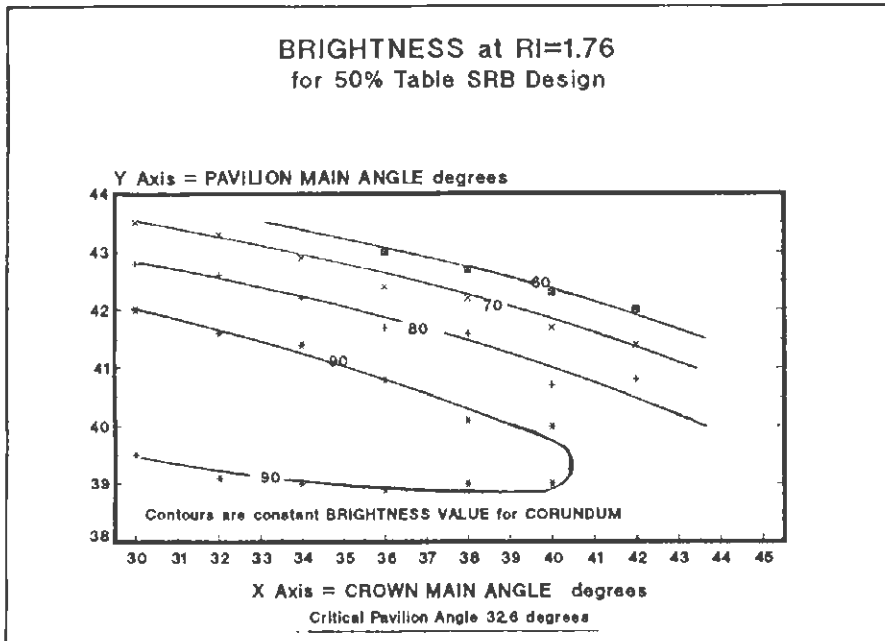


Figure 1 Summary Brightness Data for Corundum

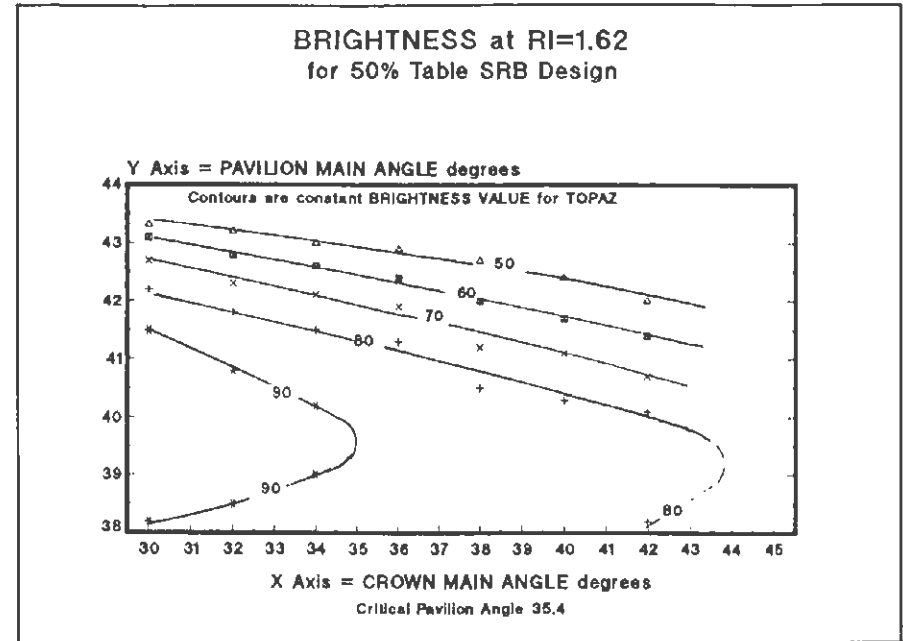


Figure 2 Summary Brightness Data for Topaz

BRIGHTNESS PLOTS TO DETERMINE CONDITIONS FOR BRIGHT GEMS Robert Long & Norman Steele

Part 2

This article is a continuation of the SFD March 1989 discussion of the Brightness Plot Experiment with the Standard Round Brilliant design (SRB) using Raytracing and BRIGHTNESS PLOTS to search for optimum angle conditions. Table 1 lists the parameters for the whole experiment and Figures 1 thru 6 are some of the results for Topaz and Corundum. These results should apply not only to the SRB Design itself, but also to most designs that depend on a symmetrical placement of facets about the design center.

Figure 1 is a chart summarizing the results for Corundum and Figure 2 a similar chart for Topaz. In each chart Crown main angles are shown on the horizontal scale, pavilion main angles on the vertical scale, and corresponding Average Brightness in the form of "contour

Table 1 EXPERIMENT PARAMETERS

Design: Standard Round Brilliant
 Table Size 50% PP
 Crown Main Angle variable (26 - 42 degrees)
 Pavilion Main Angle variable (39 - 43 degrees)

Material:

Quartz	(RI 1.54)
Topaz*	(RI 1.68)
Corundum*	(RI 1.76)
Cubic Zirconia	(RI 2.15)
Diamond	(RI 2.42)

Note *:Materials featured in this article. The others will be considered in future articles.