

# SEATTLE FACETOR DESIGN

March 1989

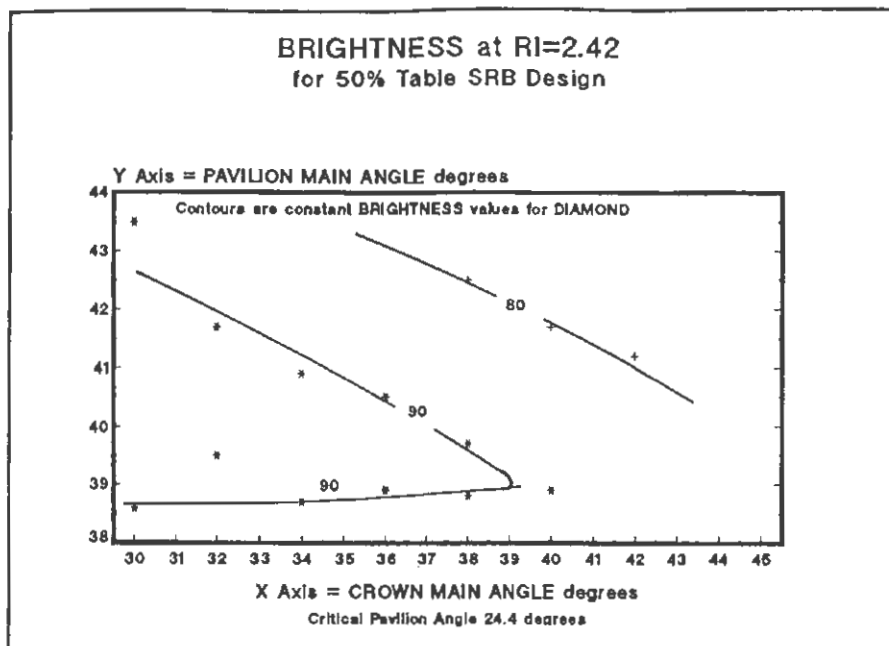


Figure 1 Summary Brightness Data for Diamond

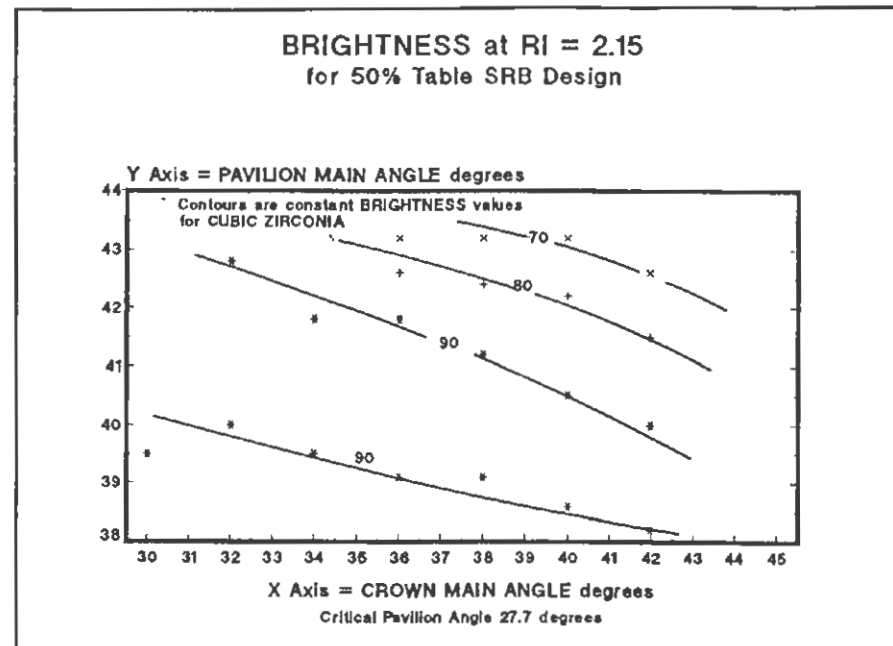


Figure 2 Summary Brightness Data for Cubic Zirconia

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

In this and the next several issues of Seattle Facetor Design we will be reporting the results of using BRIGHTNESS PLOTS to search for optimum angle conditions in gem designs. Using the latest Raytracing computer program, we conducted an experiment in which BRIGHTNESS was measured as a function of varying materials (refractive index), as well as crown and pavilion main angles for the Standard Round Brilliant with a 50% Table. Table 1 lists the parameters and Figures 1 thru 6 are some of the results. 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

With the exception of Diamond, the materials were selected to be typical of materials

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.