Lightguide transmittance measurement

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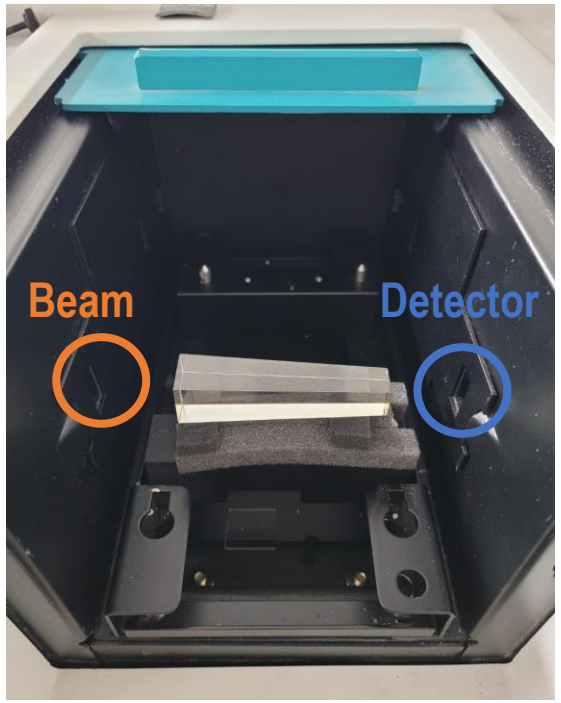
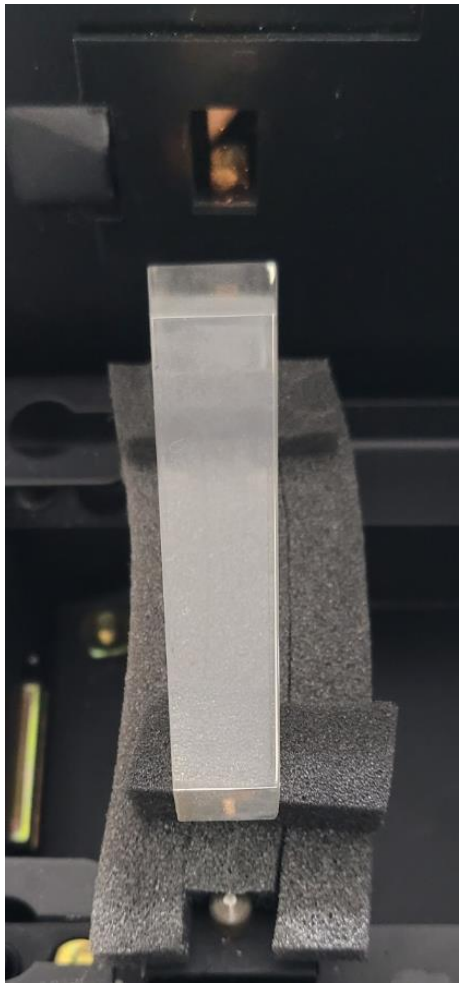
Lightguide manufactured

No.	Company	Material	Flamed
#1	BrainShift	Borosilicate Glass	
#1	BrainShift	acrylic	
#3	Ross Machine	Extruded acrylic	
#5	Ross Machine	Extruded acrylic	
#6	Ross Machine	Extruded acrylic	
#7	Ross Machine	Cast acrylic	
#8	Ross Machine	Cast acrylic	
#9	Ross Machine	Cast acrylic	Top and Bottom
#10	Ross Machine	Cast acrylic	All sides

Equipment setup

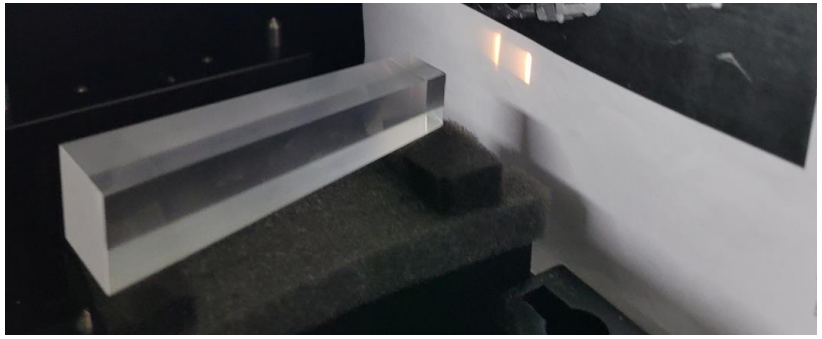


UV/Vis spectrophotometer (Cary 100)



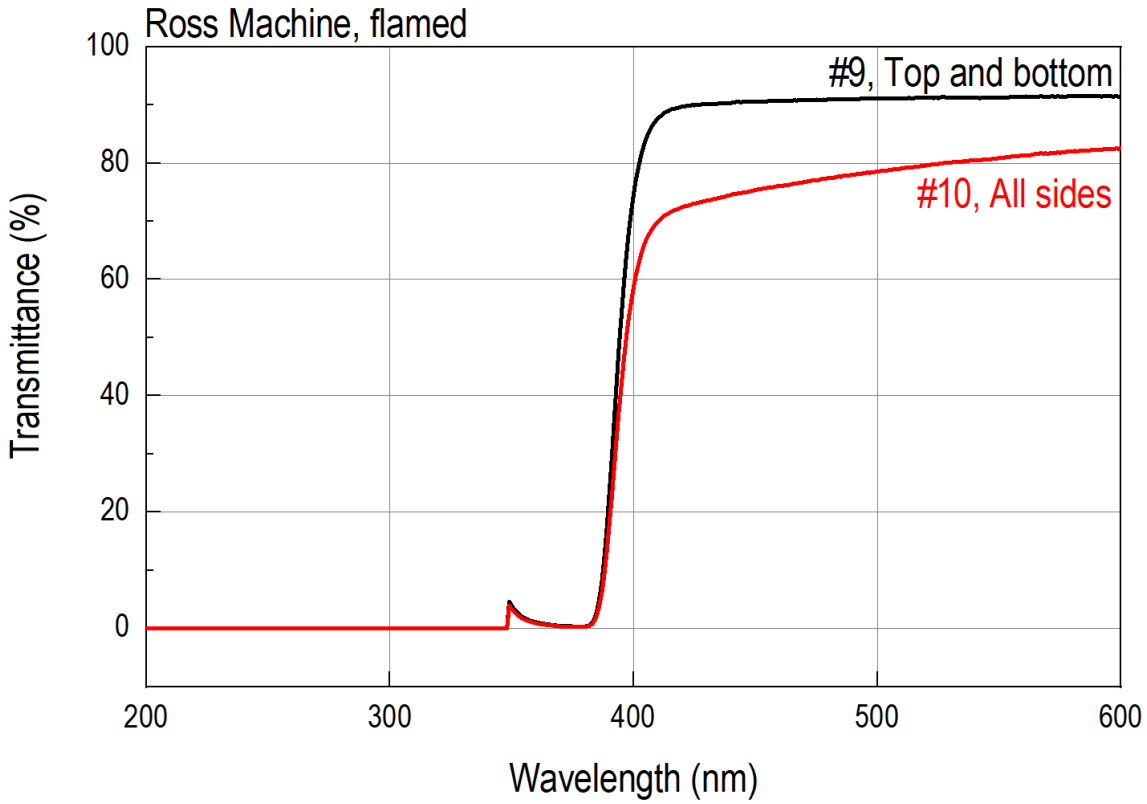
Beam allignment

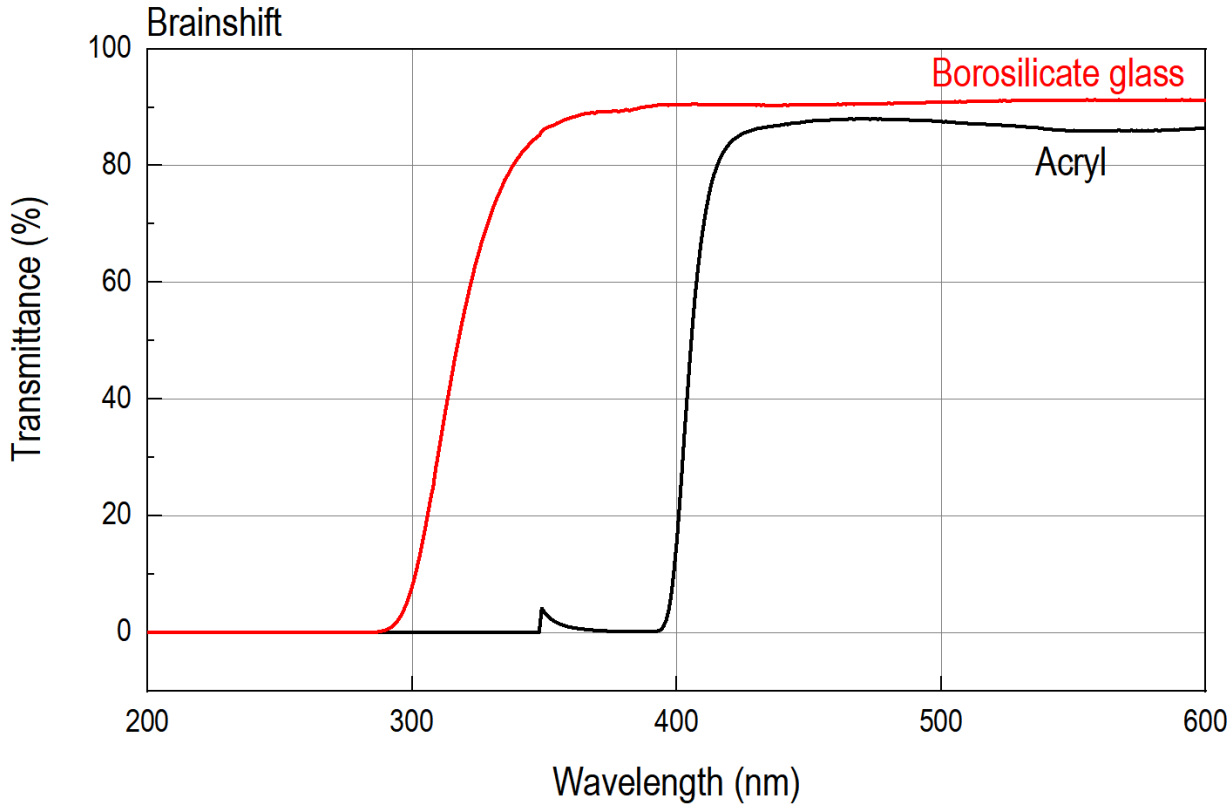
Good alignment



Bad alignment

UV/Vis

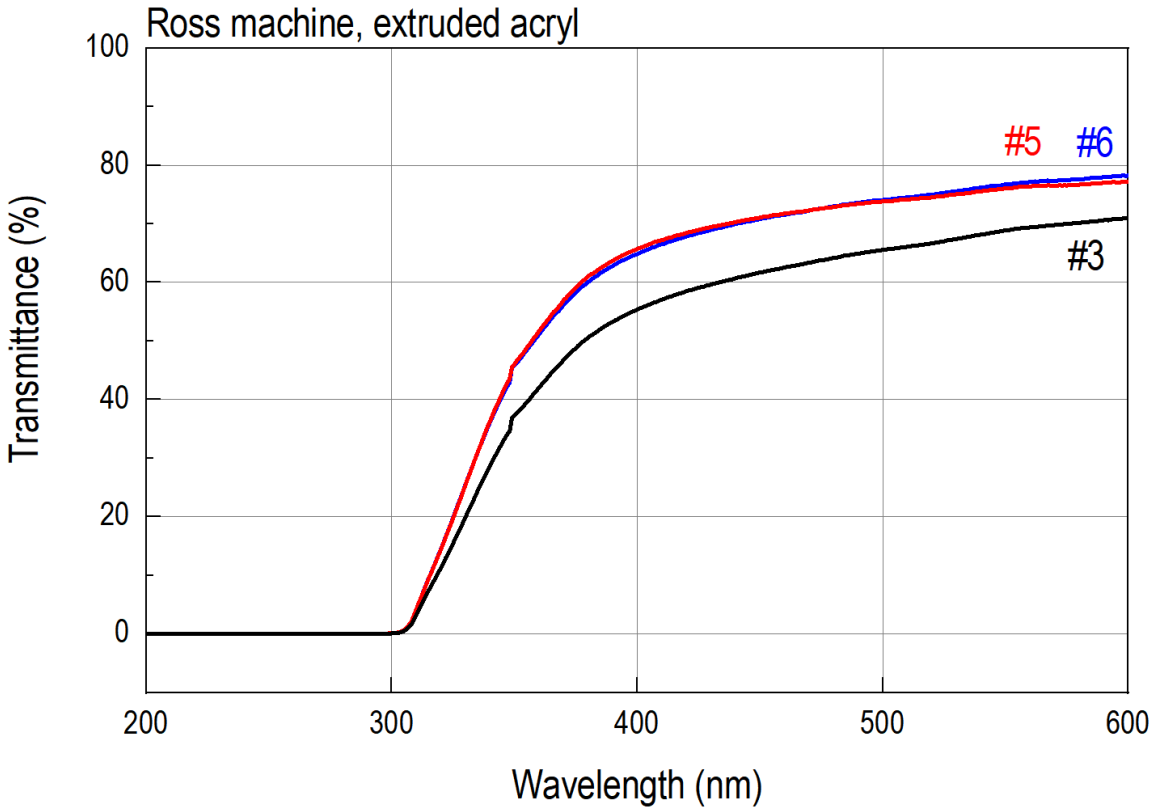


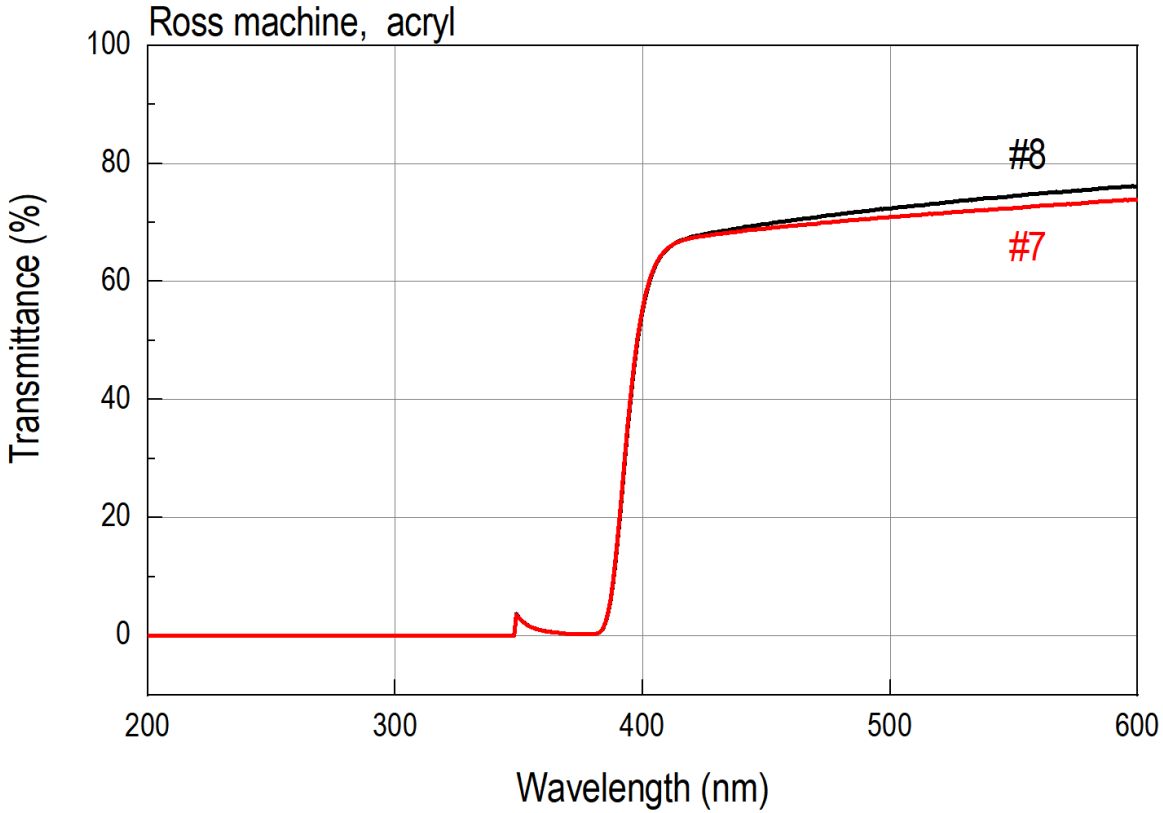


All sides

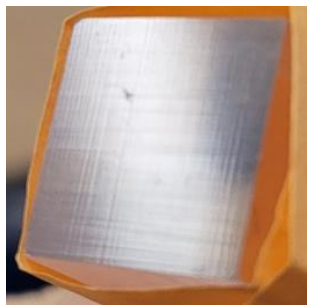
Top and bottom

UV/Vis

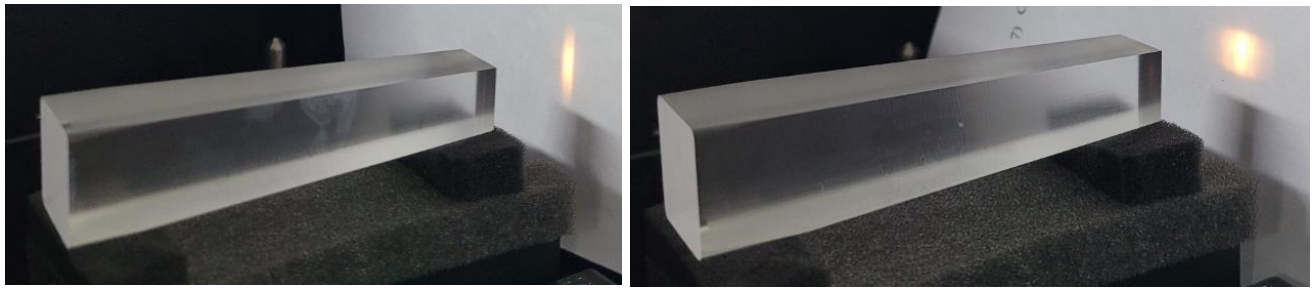




#3,
One-side
polished

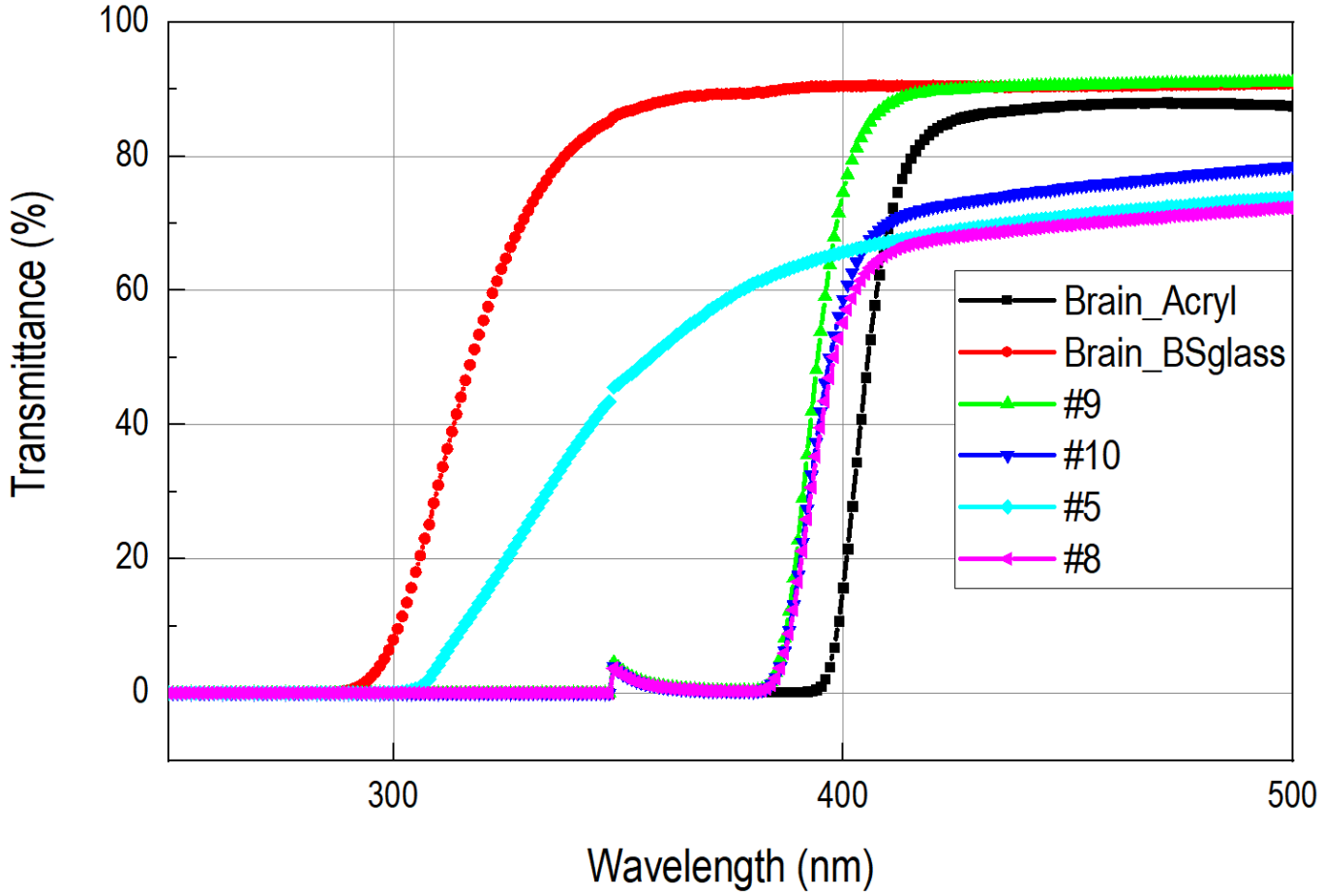


#5,
Double-side
polished



Different beam spread for one-side polished (#3)

Summary



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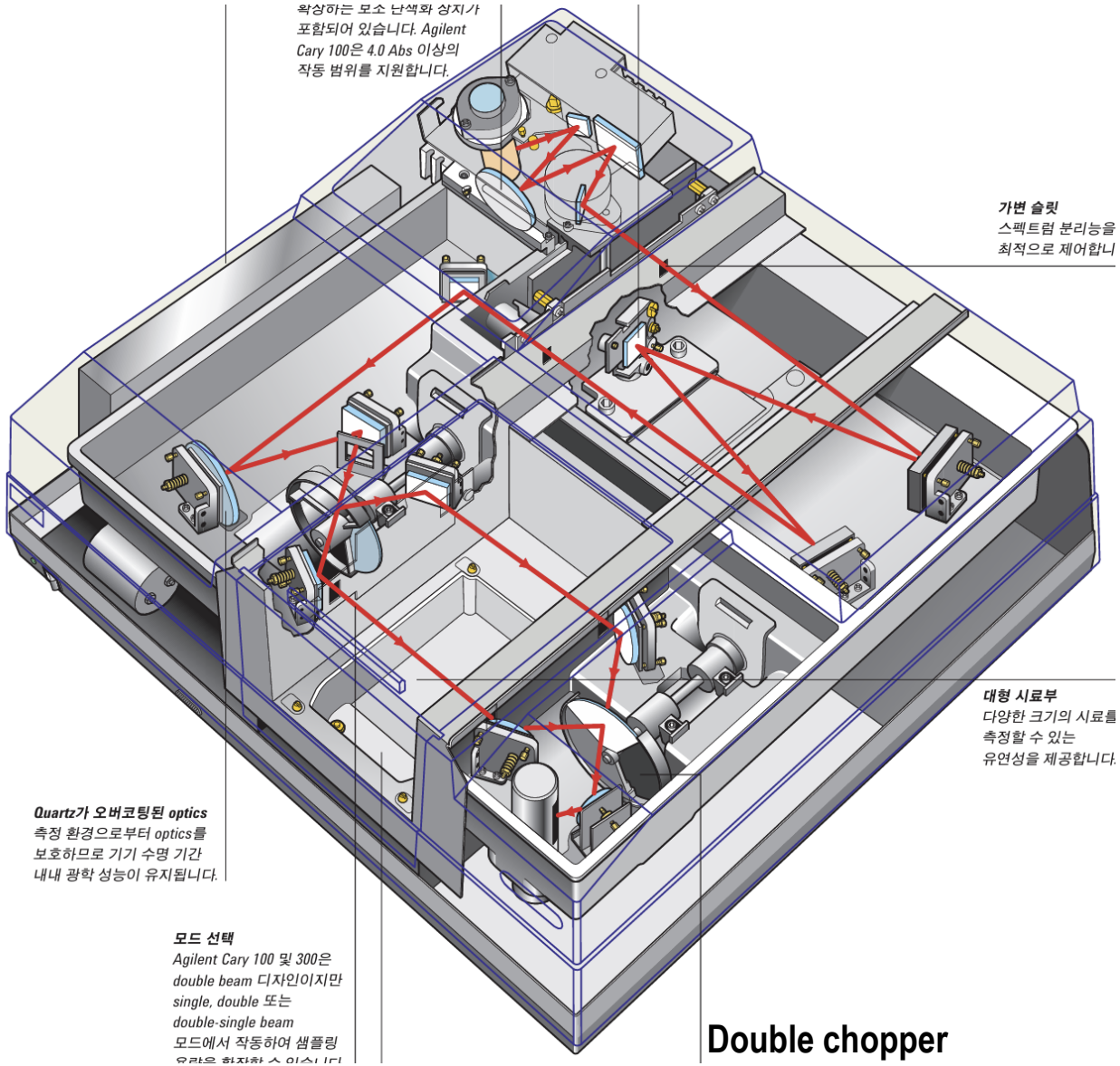
- We plan to measure the transmission of light guides with optical cookies
- Any comments are **welcome**!

Suppplementary

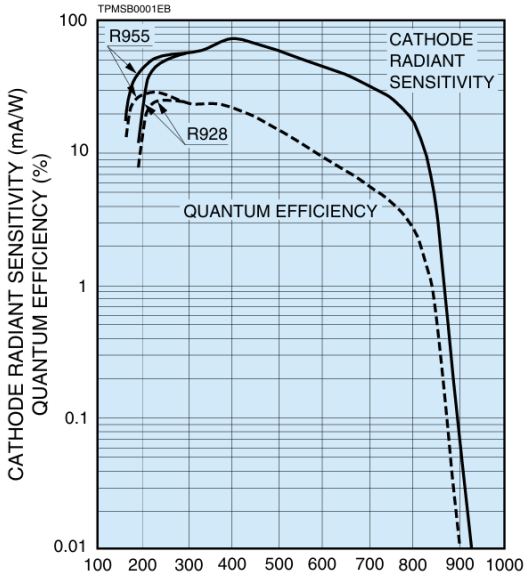


Double chopper

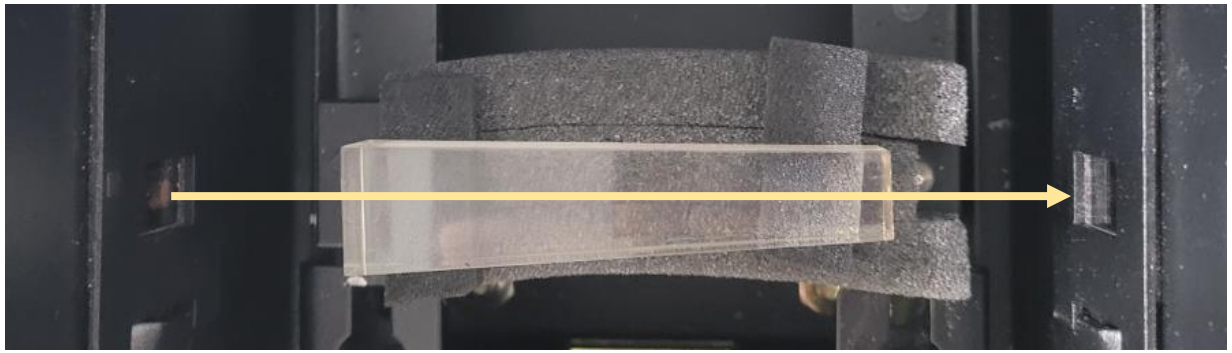
Internal structure

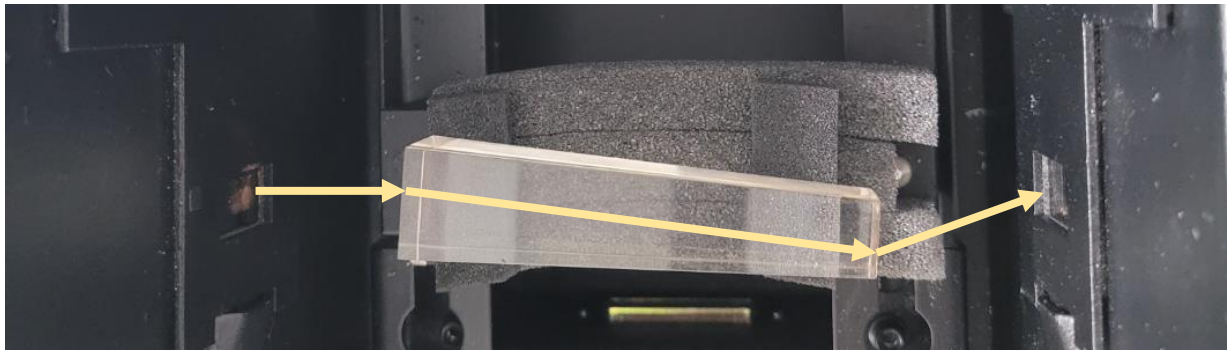
PMT : R928 (Hamamatsu)

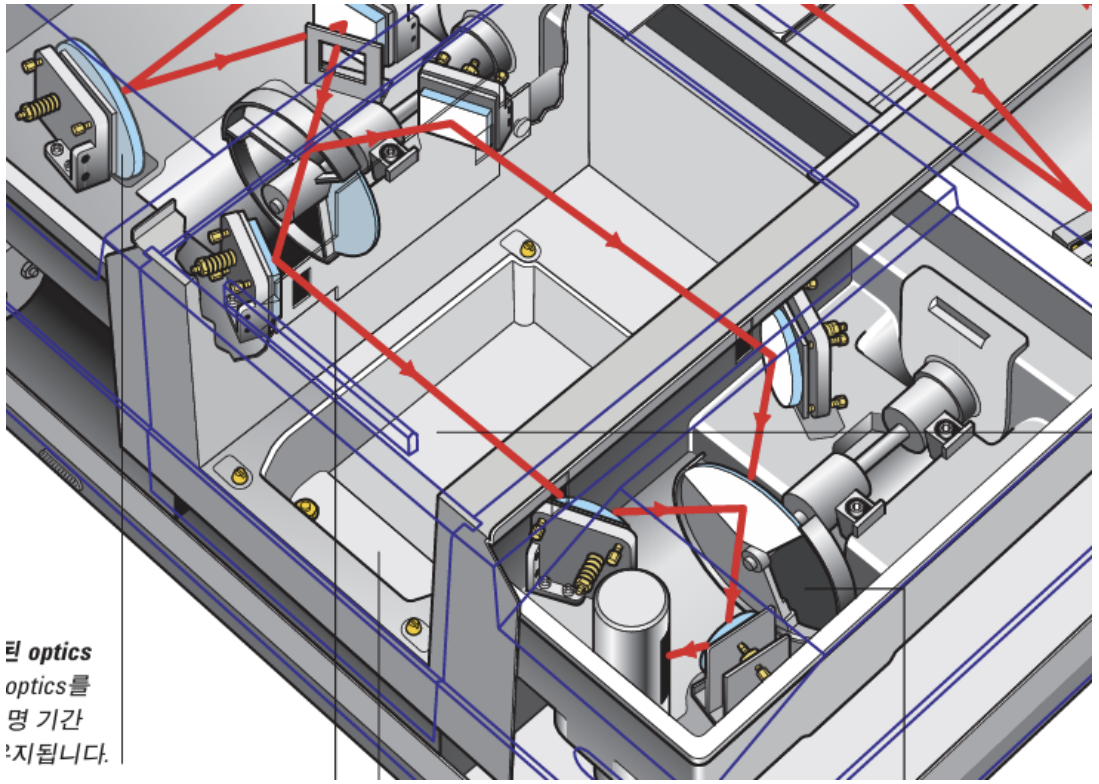
Figure 1: Typical spectral response



Suppplementary







Bigger light yield for distorted LG.
Hypothesis : distorted LG guide much light to PMT