

Syracuse University Saturday Morning High School Physics Teacher Workshop

Diffraction Grating Kits

You will construct one large demonstration grating and 25 slide mount gratings for class use.

Quantity	Item	Part number and supplier
1	5" square grating	PS-08B Holographic Diffraction Grating Learning Technologies, Inc.
1	10" x 5" grating	Same as above (see: www.starlab.com)
2	Lexan squares	McMaster-Carr
4	Screws, nuts, washers	#4 stainless hardware Rumetco (Bear St., Syracuse)
50	GEPE 35 mm slide mounts	GESM35AN1000 B&H Photo (www.bhphotovideo.com)

Caution: handle grating material by edges or with gloves to prevent damaging the surface. The grating material supplied has 750 lines/mm and is blazed with a sinusoidal profile. The blazing places most of the light in the first order.

Do either **A** or **B** first, then complete the other.

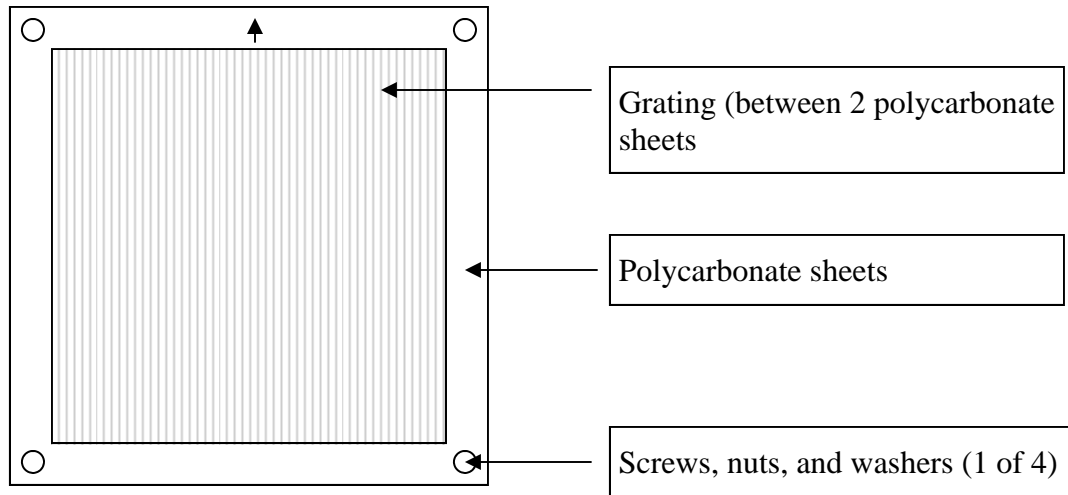
A

- Carefully remove the protective paper from the polycarbonate squares
- Trim the 5" square of grating to fit within the screw holes
- Sandwich the grating between the polycarbonate squares and secure together with screws, nuts, and washers
- Look at the vertical filament through the grating. Rotate the grating until you see a bright continuous spectrum to the left and right. Draw an up arrow near the top edge of the grating to indicate the up position.

B

- Carefully cut the large grating material into twenty five 35 mm squares
- Insert a square centered on the metal surface of a slide mount so the spectrum of a vertical source aligned with the short side is visible to the left and right
- Snap the top slide mount so that the windows are aligned. Yes, they will snap together with a 90° rotation, so try to avoid this! If you do, unsnap the mounts and fix it.
- Make 25 of these.

Demonstration Grating



Student Grating

