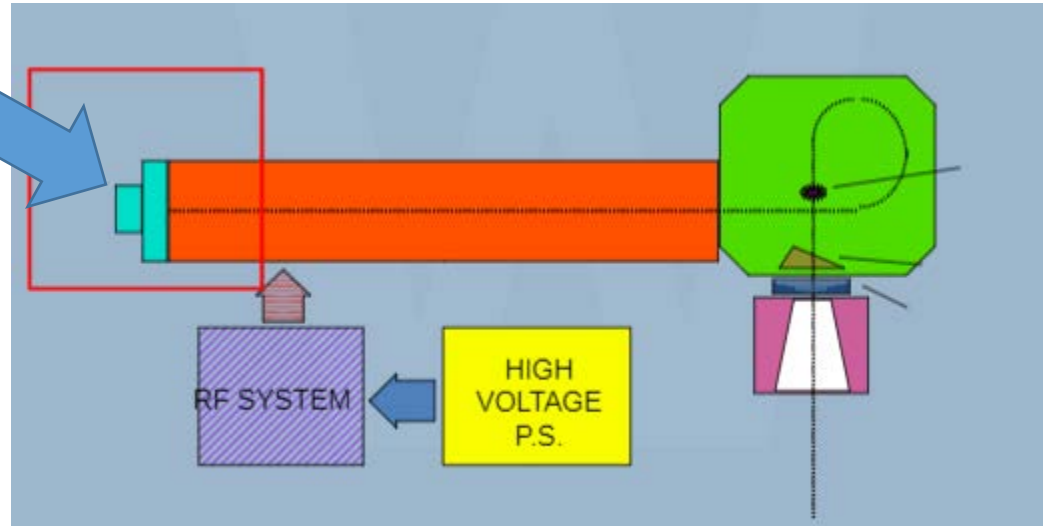
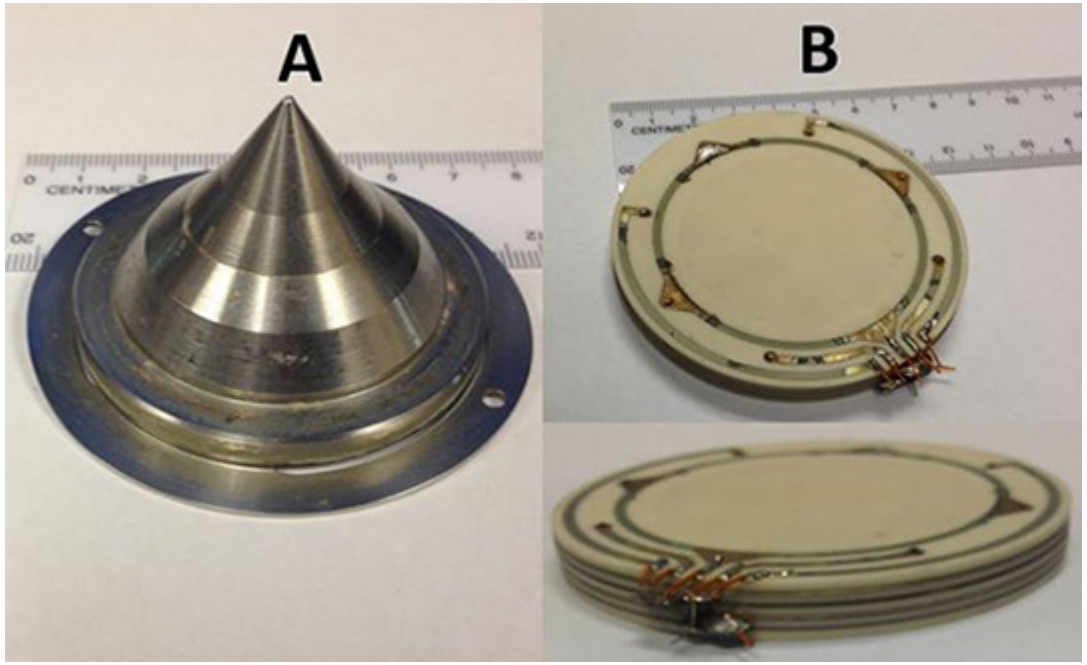
Name the Linac part identified in the schematic below;



Follow Up:

- What is the purpose of this part?
- How does this part work?
- Are there any variations to this part
- What are the types of cathodes?
- Describe the components of cathode?

Describe the two images below;

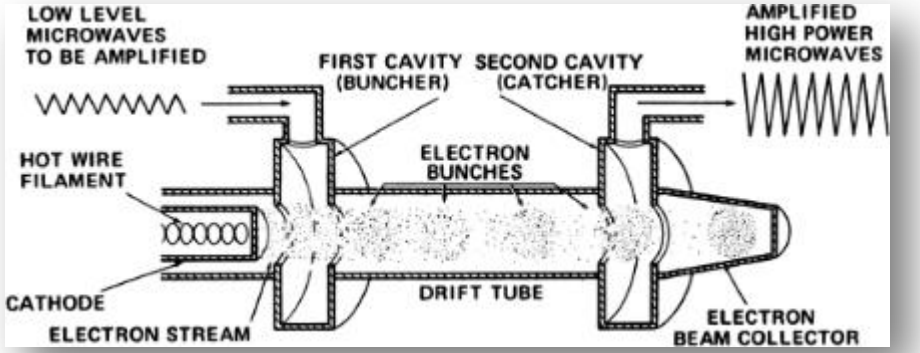


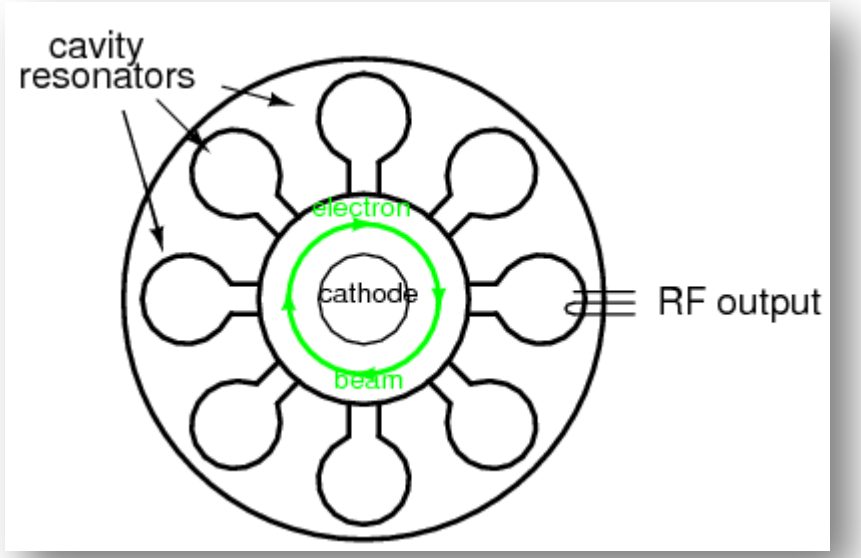
Follow up;

- Which of these components is traversed by a photon beam first?

Describe the image below, and what function it has;

Describe what the images below represent, how they work, and how they differ;

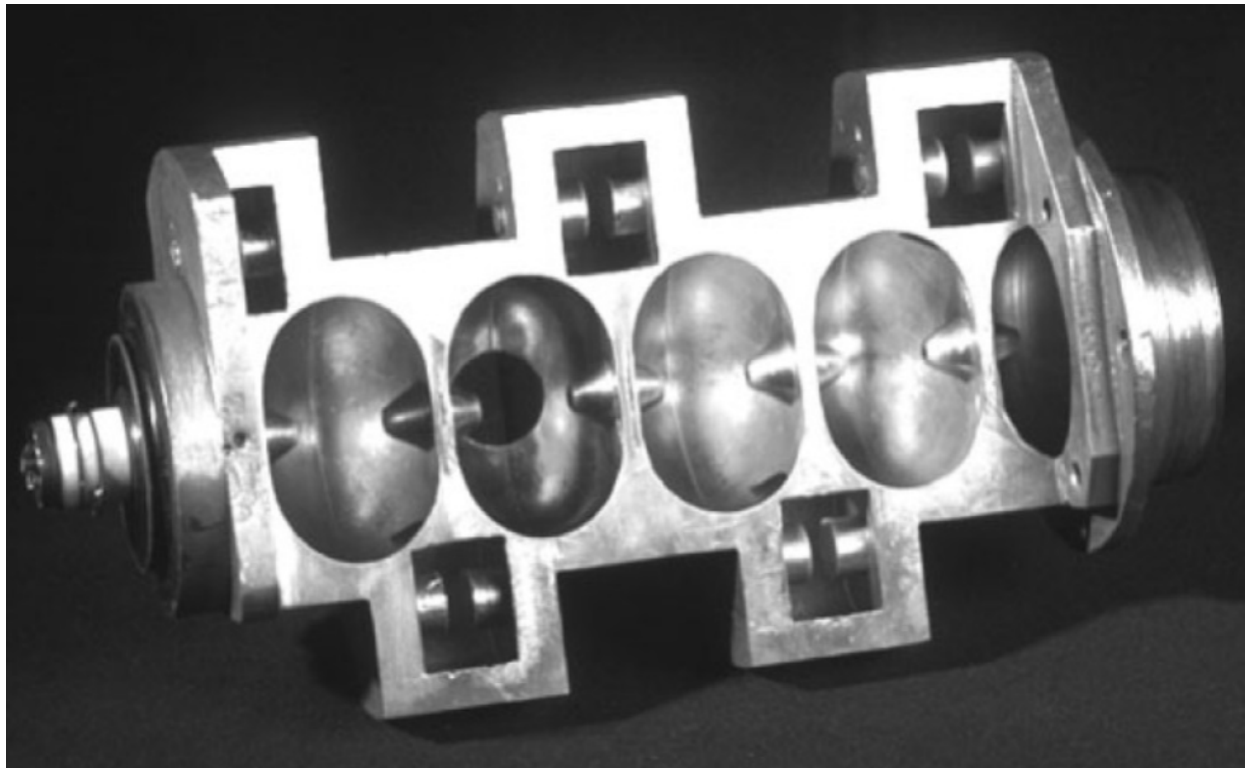




Follow-up;

- What are the advantages and disadvantages of one vs the other? (life-span, cost, size, energy)
- What does your linac use?
- What is the frequency, lifetime, output (MW)?

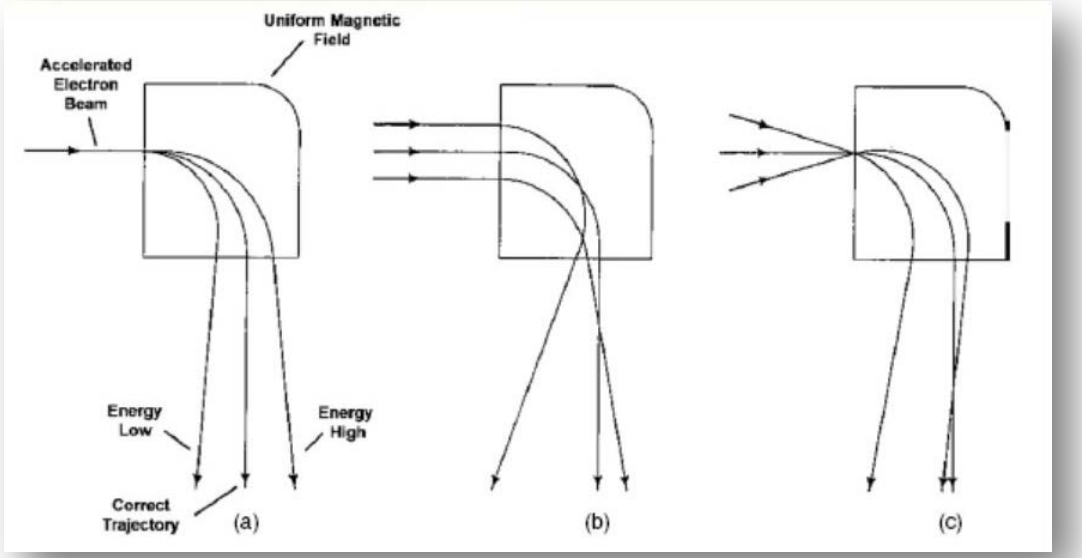
What is this structure and how does it work?



Follow up:

- Name the other main components of a therapy linac (following the beam from gun to patient) and discuss their functions.

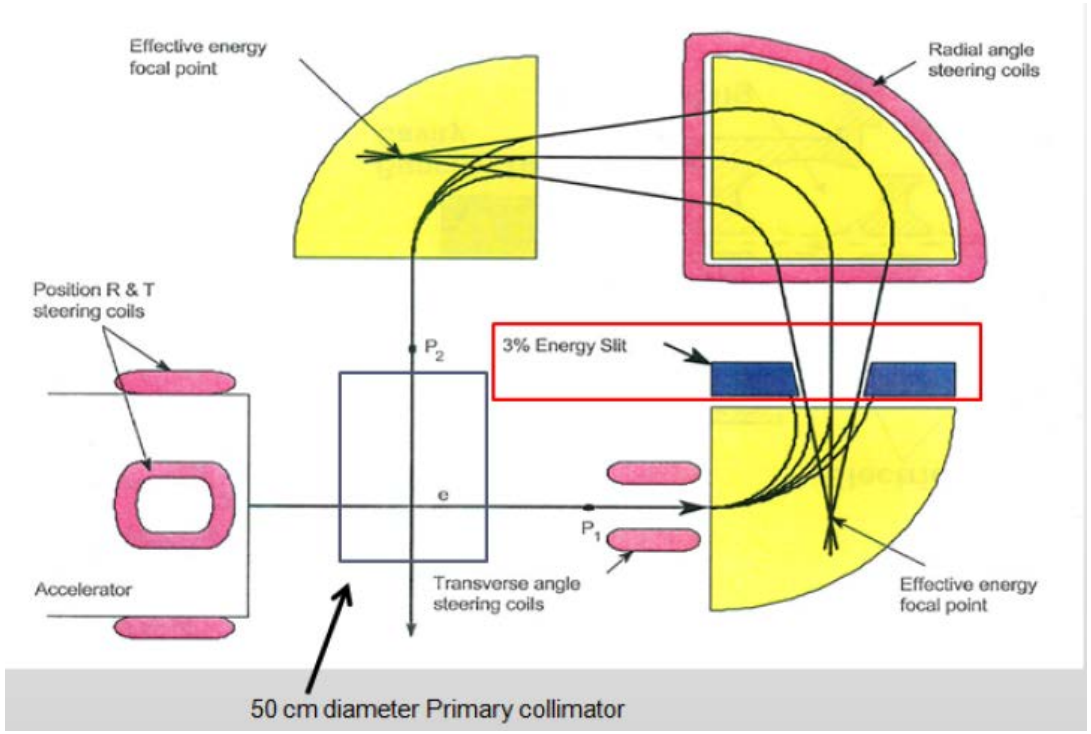
Describe the issue outlined in the figure below, and how this is avoided in your linac;



Follow up;

- What is an energy slit, and what is the typical tolerance used?
- How is the flatness and symmetry adjusted in your linac?

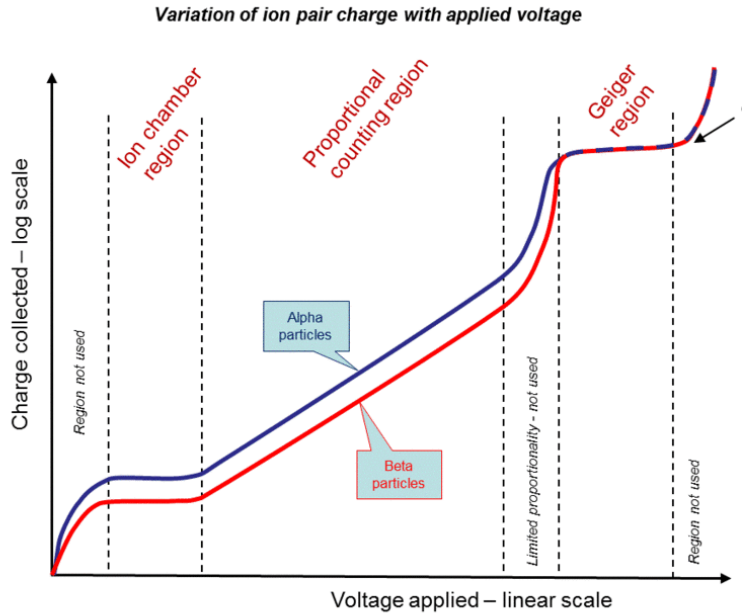
Explain what is being described in this figure;



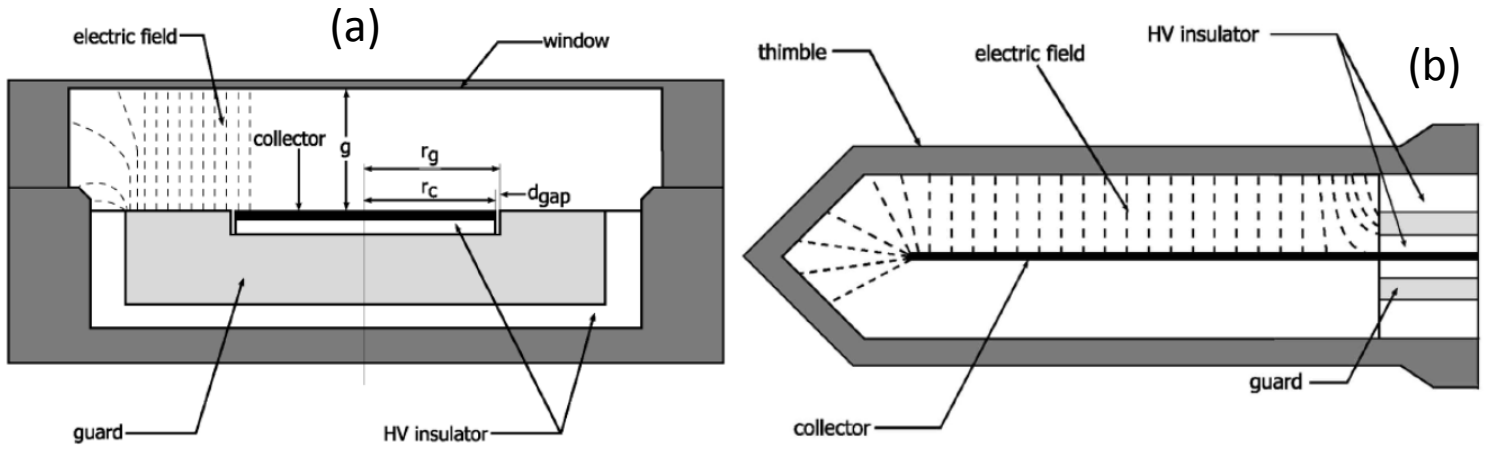
Follow up;

- How is the flatness and symmetry adjusted in your linac?
- How is the dose rate adjusted in your linac?

Describe the curve below;



Describe the two images below;



Follow-up;

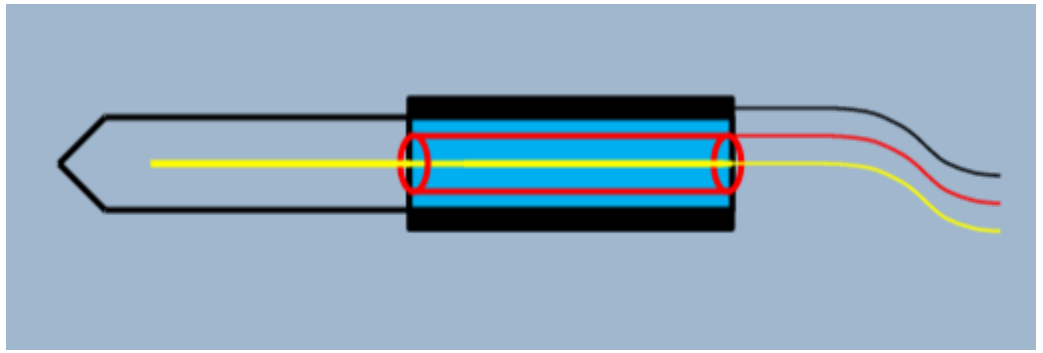
- Can you use (a) to calibrate photons? Should you?
- If you expose (b) to 1Gy, approximately how much charge would you expect to collect?

- Explain why the readings from an unsealed ion chamber must be corrected for temperature and pressure conditions?

Follow Up

- Does TG-51 address the use of sealed ion chambers and if so, what does it say?
- Why are the ion chambers in most commercially available medical linear accelerators sealed?

Describe the components of this instrument. Why does it use triax cable?

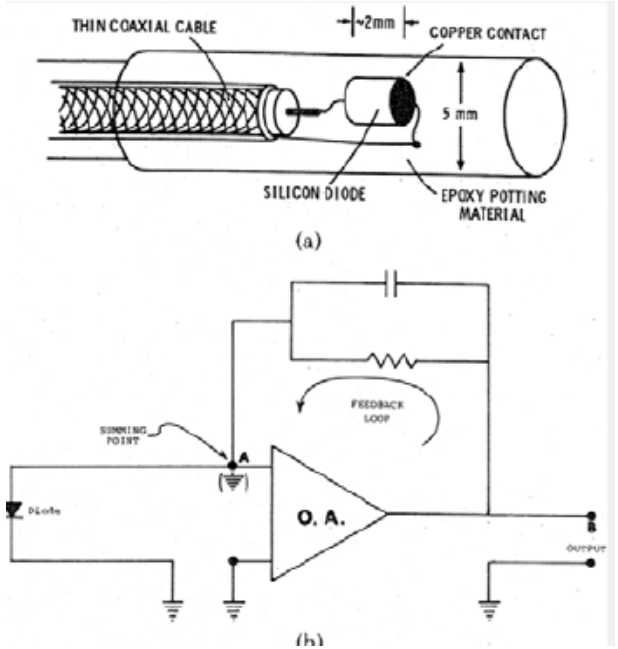


Follow Up

- What is the purpose of the guard electrode?
- What is polarity factor in an ionization chamber?

- What causes the polarity effect?
- How much leakage is too much?
- How much polarity effect is too much?

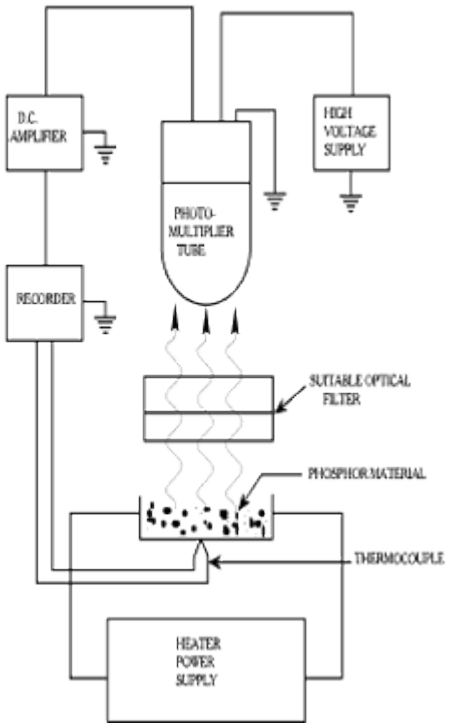
What is described in the figure below? Describe the advantages and disadvantages of such a device.

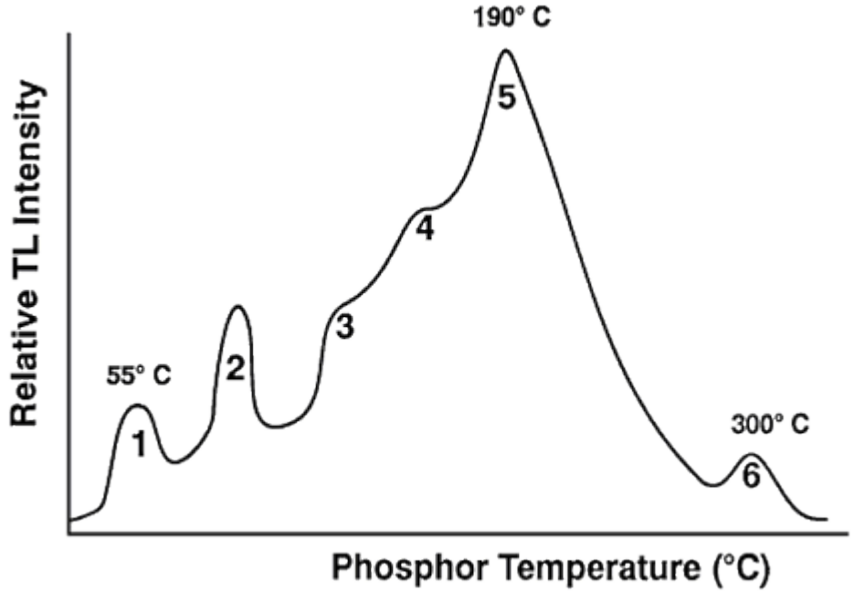


Follow up;

- How sensitive is the device, and why?
- Describe how the material of this devices effects its response to different energies?
- What (or why) makes diode better for electrons and not photon?
- When would you use a diode for beam measurements? Why?

Describe the two images below and how they relate to dosimetric measurements;

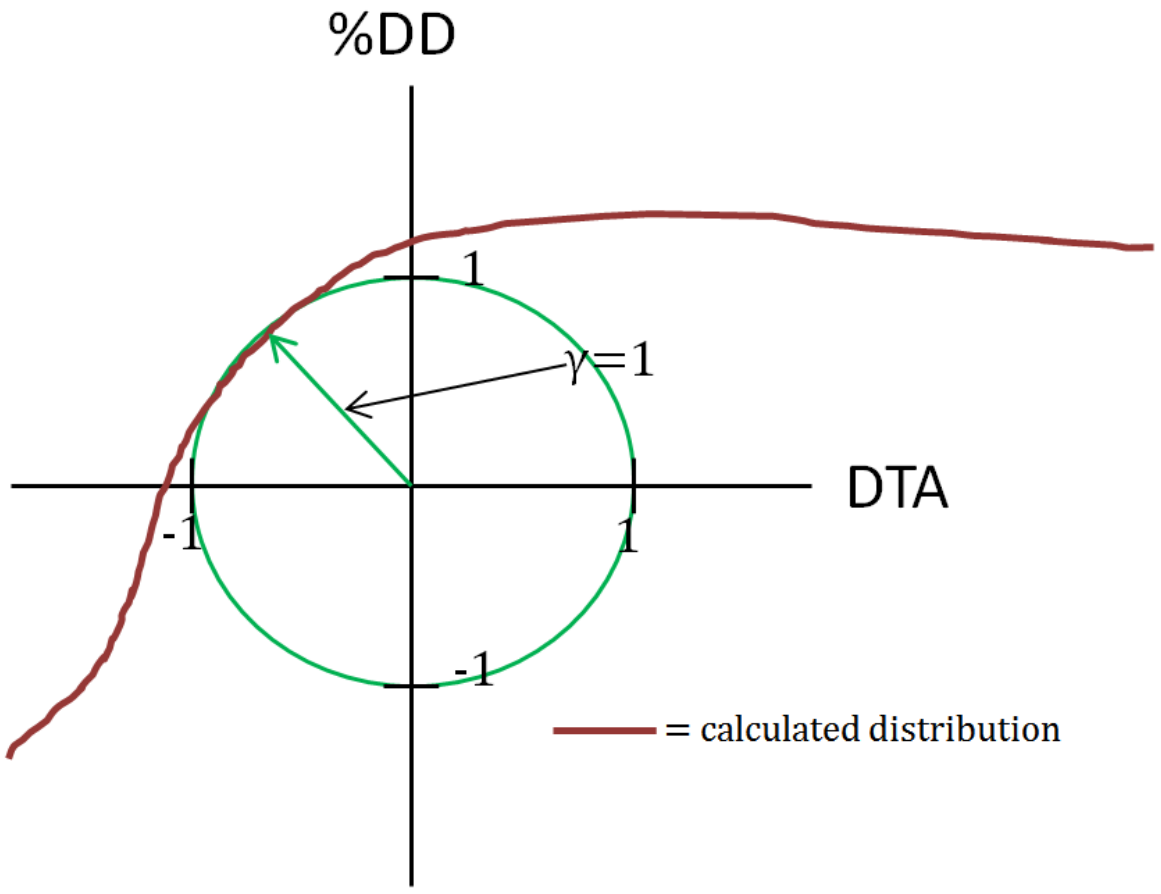




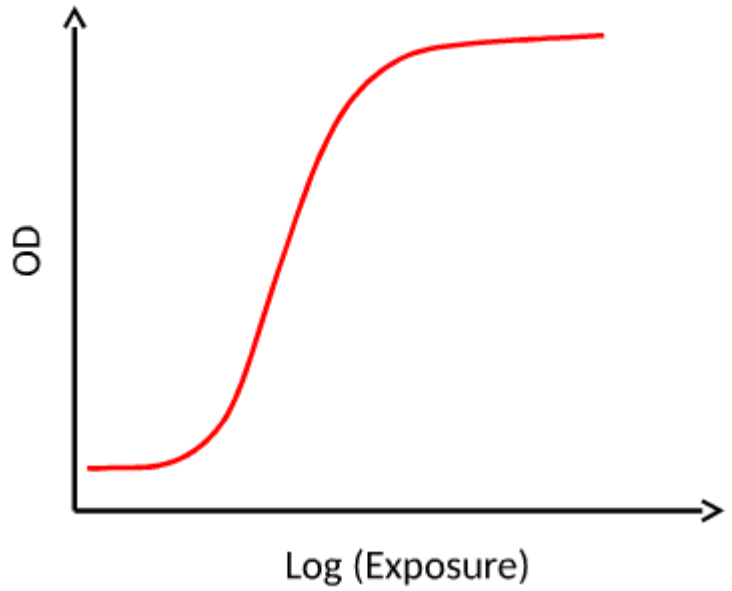
Follow up;

- What is the dosimeter made of?
- Does it have an energy dependence?

Describe the following graph; what test does it describe?
Discuss how you perform this test at your institution, and

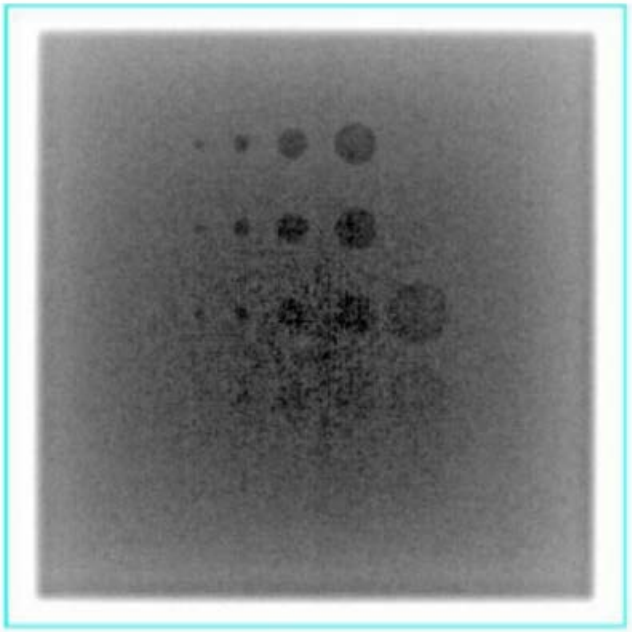


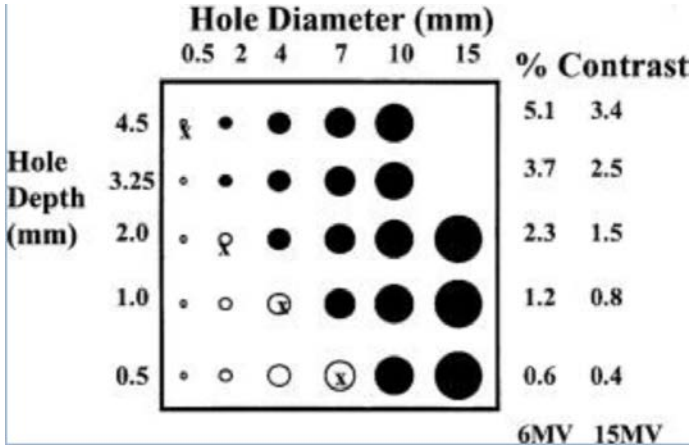
- What is this curve called?
- Discuss the characteristics of the curve, and discuss its use in Radiation Therapy.



What devices are pictured below, and what are they used to evaluate?

A)





B)