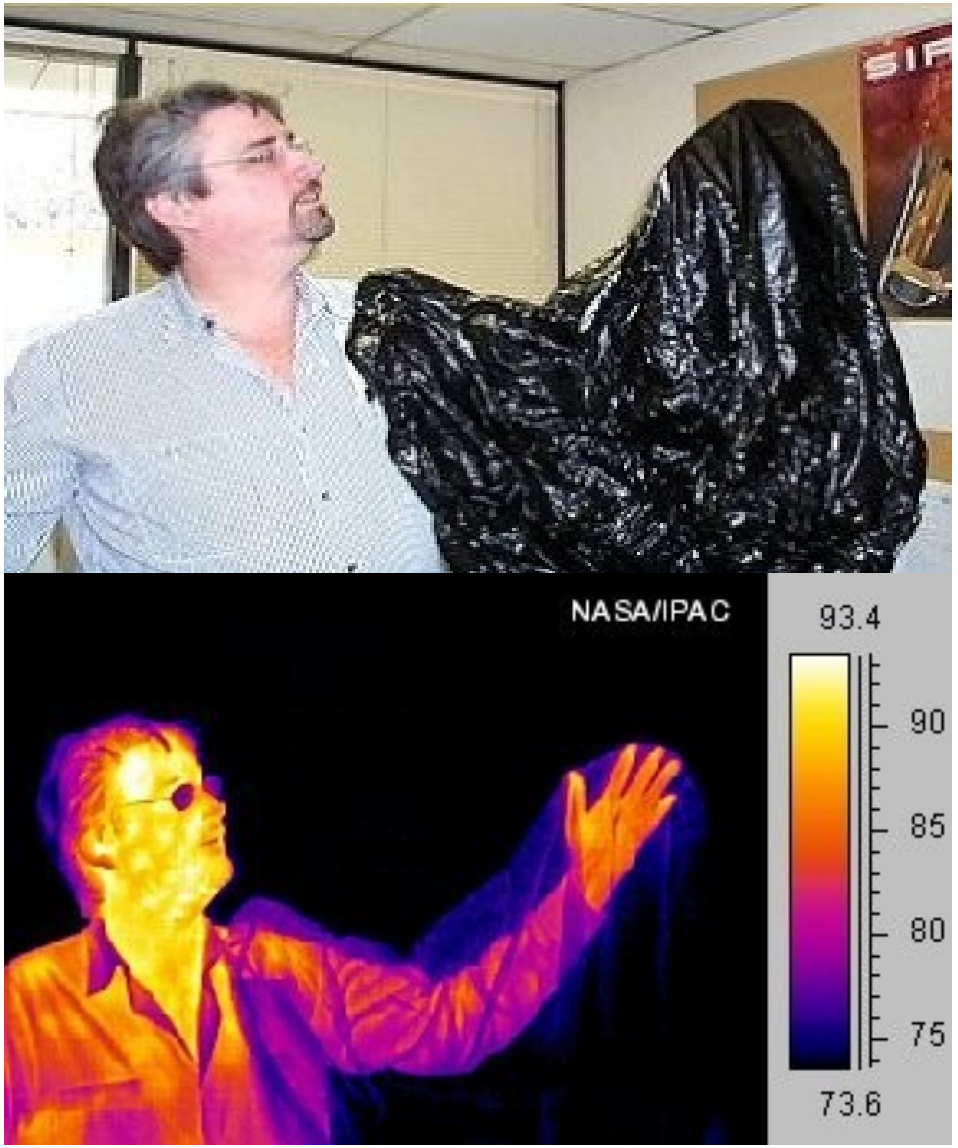
In the IR picture, false colour corresponds to temperature (in Fahrenheit). Why does the man appear to be wearing a pair of purple shades in the bottom picture?



A) The lenses are opaque to IR

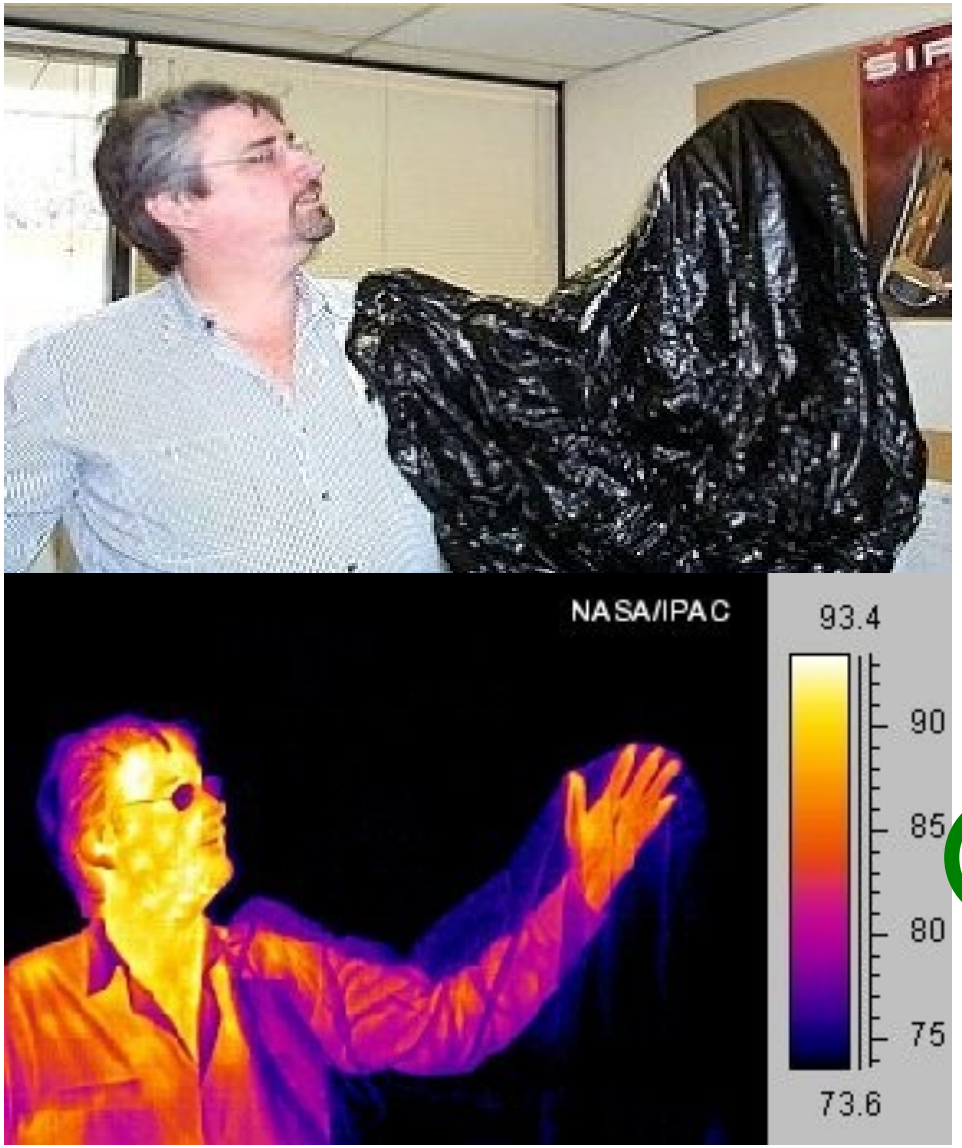
B) The lenses are warmer than his face

C) The lenses are colder than his face

D) A and B

E) A and C

In the IR picture, false colour corresponds to temperature (in Fahrenheit). Why does the man appear to be wearing a pair of purple shades in the bottom picture?



A) The lenses are opaque to IR

B) The lenses are warmer than his face

C) The lenses are colder than his face

D) A and B

E) A and C

You can't see through the lenses - they are opaque. Also, cooler than the face, and therefore purple.

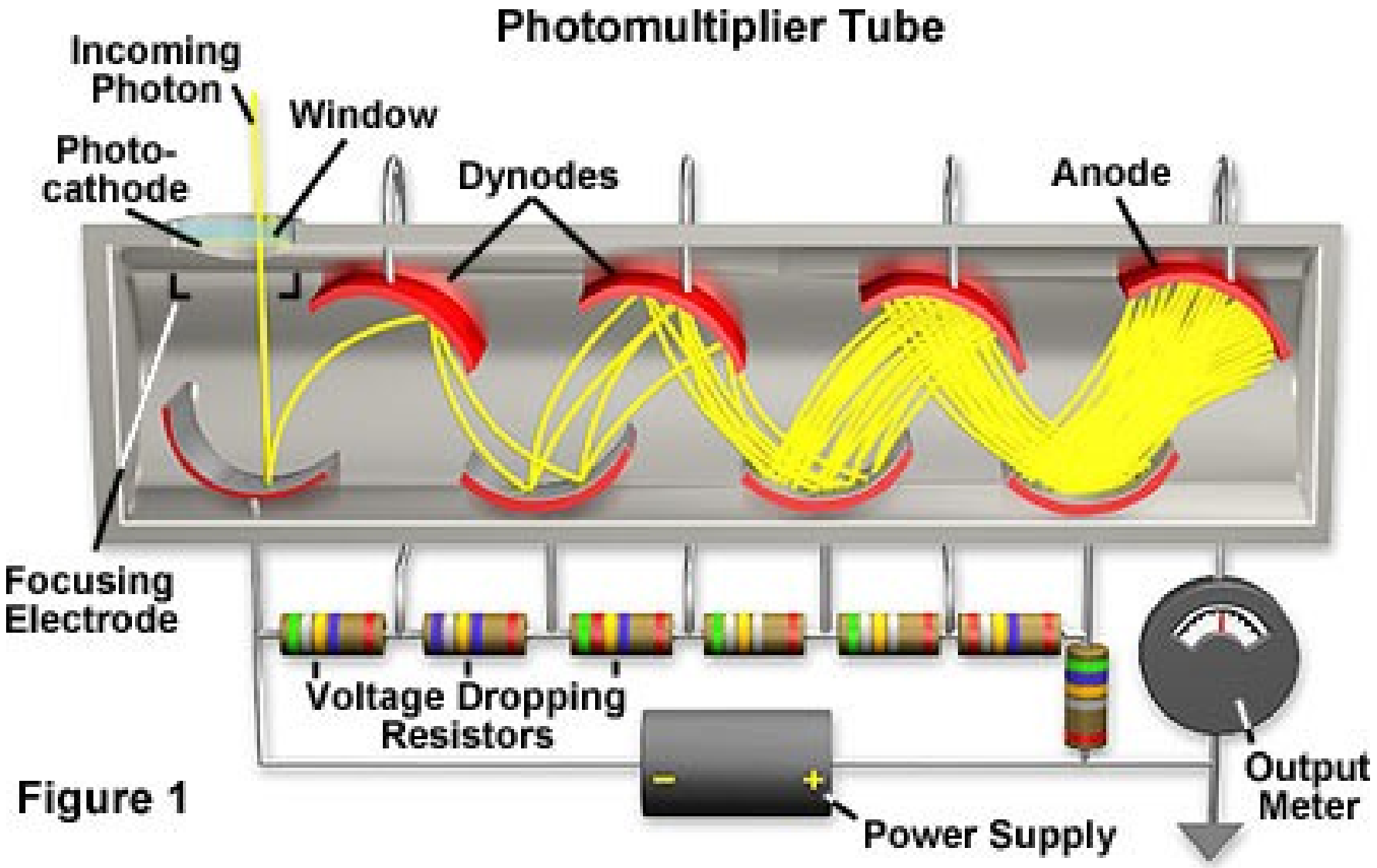

Photomultiplier Tube
Incoming Photon
Window
Photo-cathode
Dynodes
Anode
Focusing Electrode
Voltage Dropping Resistors
Power Supply
Output Meter

Figure 1

Linearly polarized light is incident on a polarizer. The angle between the light polarization and the polarizer is 45 deg.

What fraction of the light's **intensity** gets through?

A) $1/\sqrt{2}$

B) 1/2

C) 1/4

D) none

E) 1/45

Linearly polarized light is incident on a polarizer. The angle between the light polarization and the polarizer is 45 deg.

What fraction of the light's **intensity** gets through?

A) $1/\sqrt{2}$

B) 1/2

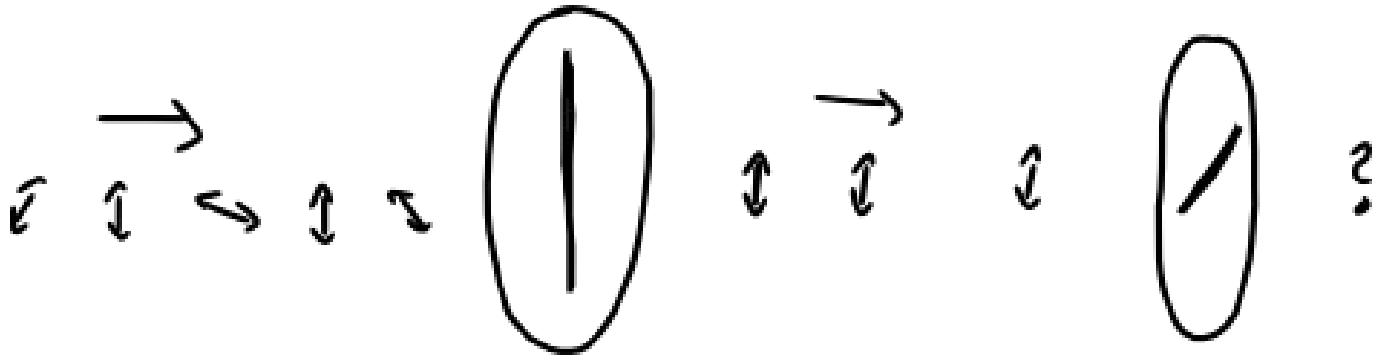
C) 1/4

D) none

E) 1/45

The electrical field component is $E/\sqrt{2}$
The intensity goes like field squared, though,
so it gets diminished by $(1/\sqrt{2})^2 = 1/2$

Photons coming out of one polarizer are incident on another one, at a 45 deg angle to the first. What percentage of photons goes through?



A) none, since none are aligned with the polarizer

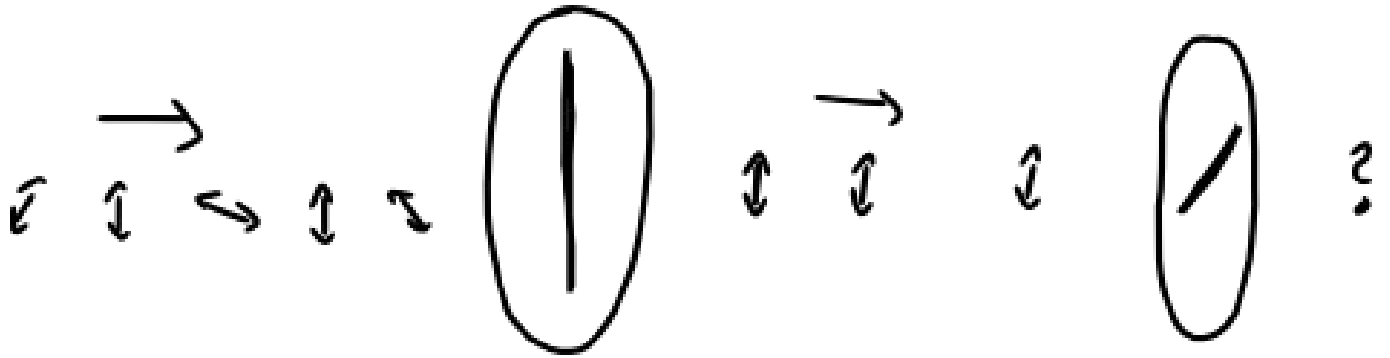
B) either none or all, since they are all identical

C) half the photons go through

D) each photon splits in half

E) Trickery!

Photons coming out of one polarizer are incident on another one, at a 45 deg angle to the first. What percentage of photons goes through?



A) none, since none are aligned with the polarizer

B) either none or all, since they are all identical

C) half the photons go through

D) each photon splits in half

E) Trickery!

The photons can't change frequency (colour), so their energy is the same as it was. Last question said that intensity decreased by a factor of 2, so only half the photons can go through

More on this in next two lectures!!