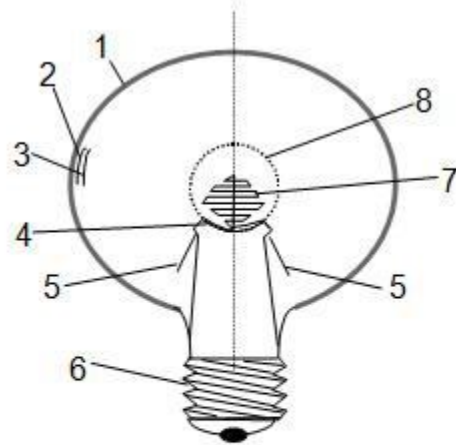


A 'cool' lamp to enhance visible radiation is designed below. Exercise consists in finding ideas and scheme to manufacture it cheaply and easily. If this is not achievable, design must be abandoned.



Electrical lamp.
1 - balloon, 2 - rough structure, 3,4 - reflecting IR shields, 5 - element for current delivering, 6 - socle., 7 - body of glow, 8 - oxide grid

Structure: Body of glow is encircled by grid absorbing IR-radiation while radiating visible one. Ratio of the volume of grid to balloon is 1:4 to 1:3 and ratio of volume of body of glow to grid is 1:3 to 1:1. The dimensions of openings in grid are 35-80 microns. Grid is made of metals oxides and has in IR-range blackness of 0.4-1.0.

Working: The body of glow heats up to the 2600-3000K, radiates 4-9% visible and more than 90% IR-rays. Encircling gas, for example, xenon transmits heat to the grid (2). Grid is made of zirconium, thorium oxides or hafnium with cerium which absorbs IR and radiates visible light. If openings in grid are less than 35 microns UV increases and in dimensions more than 80 microns IR increases. Rough layer on inner surface of bulb is for the dispersion of light.