

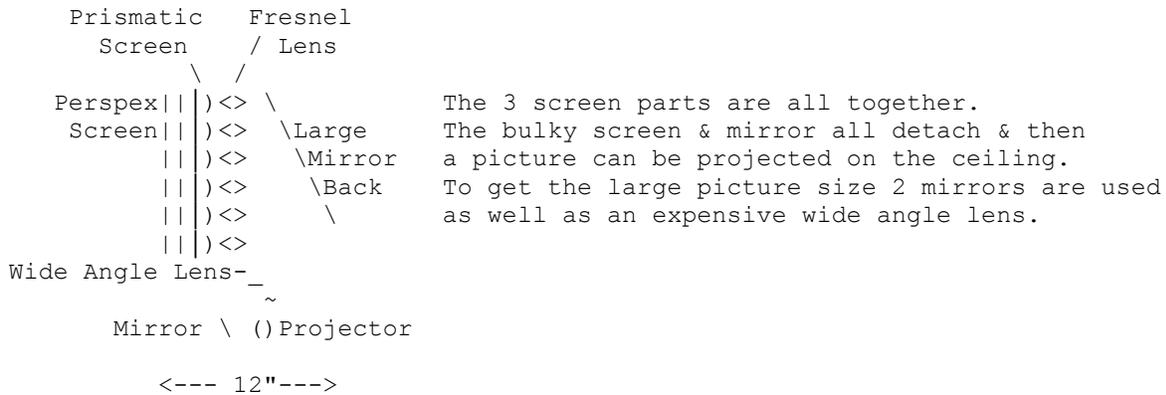
Odd projection TV fault

By G8MNY

(New May 07)

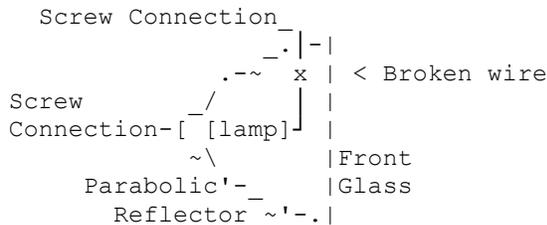
(8 Bit ASCII Graphics use code page 437 or 850)

I was asked by friendly TV dealer if I wanted a free non working 52" diagonal Sony widescreen rear projection LCD TV, that he had just replaced. These were 5k UKP retail only 4 years ago. The expensive Xenon arc lamps are the main cause for failure. Having worked on a smaller one before, I picked up the huge beast. (quite light actually & only 12" deep).



TESTING

I made a brief look at the lamp & it had not exploded or changed colour, so I tested the electronics, the lamp inverter ran OK (scope nearby to see the 5kV AC) for a few seconds but no light. So I re examined the lamp & spotted a broken wire inside the lamp sealed reflector, inside the lamp carrier system...



This hot steel wire goes through the glass reflector with a rivet to stop any the heat cracking.

LAMP REPAIR

To repair it I used a steel PAPER CLIP that had been shaped by spiralling it around another piece of thin wire. This was carefully wound through the rivet hole to pick up the broken wire inside, then attached to the screw connector. To my surprise this all worked & I saved the 200 UKP cost of a new lamp.

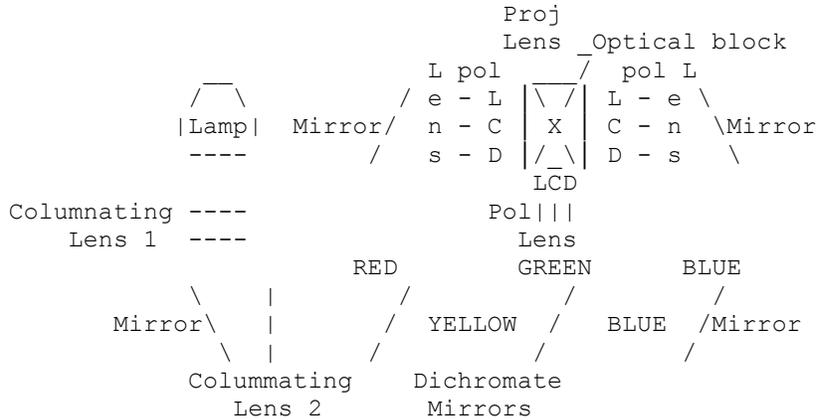
OTHER FAULTS

Unfortunately the picture was not perfect, there was a yellowish centre. So I stripped the optics down to find the cause.

OPTICS

Below is a simplified sketch of the optics (much the same for LCD projectors), there are further colour correction filters though.

The Optical block is 4 90° prisms making up a cube, with dichromate layers on the internal surfaces to reflect & superimpose the 3 colour light paths into the single projector lens.



UV BURN

Unfortunately I found the Polariser (glued on the rotatable lens) in front of the blue LCD tile has been UV damaged & has a dark centre. SONY obviously knew there was a design problem here as the cooling air flow is much bigger for the blue optics!

Nothing could be done for this problem, but most pictures (e.g. Faces, Football Cricket) do not have a lot of blue in the picture centre, so the colour fault is not as noticeable as U may think. The TV still does some blue, so blue skies are OK, it is just white & greys that show up the problem. Other than that, it is actually a brighter picture than my 1 year old 42" plasma!

SOLD

Anyway I after all that time & effort, I sold the set OK, for more than a few paper clips, as new one that size would still be 2-3k UKP!

Why Don't U send an interesting bul?

73 de John G8MNY @ GB7CIP