

2.6. Reflectors.

2.6.1. Reflector materials and coverings.

We will assume the mirror film has properties similar to 3M™ Cool Mirror Film 330.

We can compare this with other, cheaper alternatives. For example, we looked at turkey foil, which has a substantial paper backing. It has 90% reflectivity. The store B&Q supply mirrors.

To protect against birds settling on the reflectors, it is possible to use Tedlar – a plastic foil that resists pigeons. An alternative is Mylar sheet, which is like polythene but very thick. Its transparency is 95%, but it is more expensive.

2.6.2. Reflector characteristics.

3M™ Cool Mirror Film 330 has an average reflectance at normal incidence of 89% or greater. This reflects light that is useful for PV modules and transmits infrared light. When used in low-x concentrated photovoltaic systems, it can be used to increase the amount of usable light on the module while limiting the amount of heat-generating infrared light on the module. At normal incidence angles, it has low visible reflectance, which limits blinding reflections.

We will look at the effects of the reflector on temperature, and therefore efficiency, of the panel. We will also investigate the frequency of reflected solar radiation in terms of the characteristics of the panel.