

BIORESIN - AGEING TESTS

Sample description:

Grade	No	Details	Additional information from brochures
2MD 775	2	Both circular (11.5cm & 9.5cm diameter approx.)	Transparent Casting Resin with the highest UV stability
2MD 780	2	One circular (12cm diameter approx.) One rectangular (13cm x 5 cm)	Transparent Casting Resin
2MD 782	2	Both rectangular (13cm x 5cm)	
2MD 782/LV	1	Circular (12cm diameter approx.)	
2MD 784	2	Both rectangular (13cm x 5cm)	Transparent Casting Resin; temperature stability
2MD 785	2	Both rectangular (13cm x 5cm)	

Experimentation:

Following ageing tests were carried out:

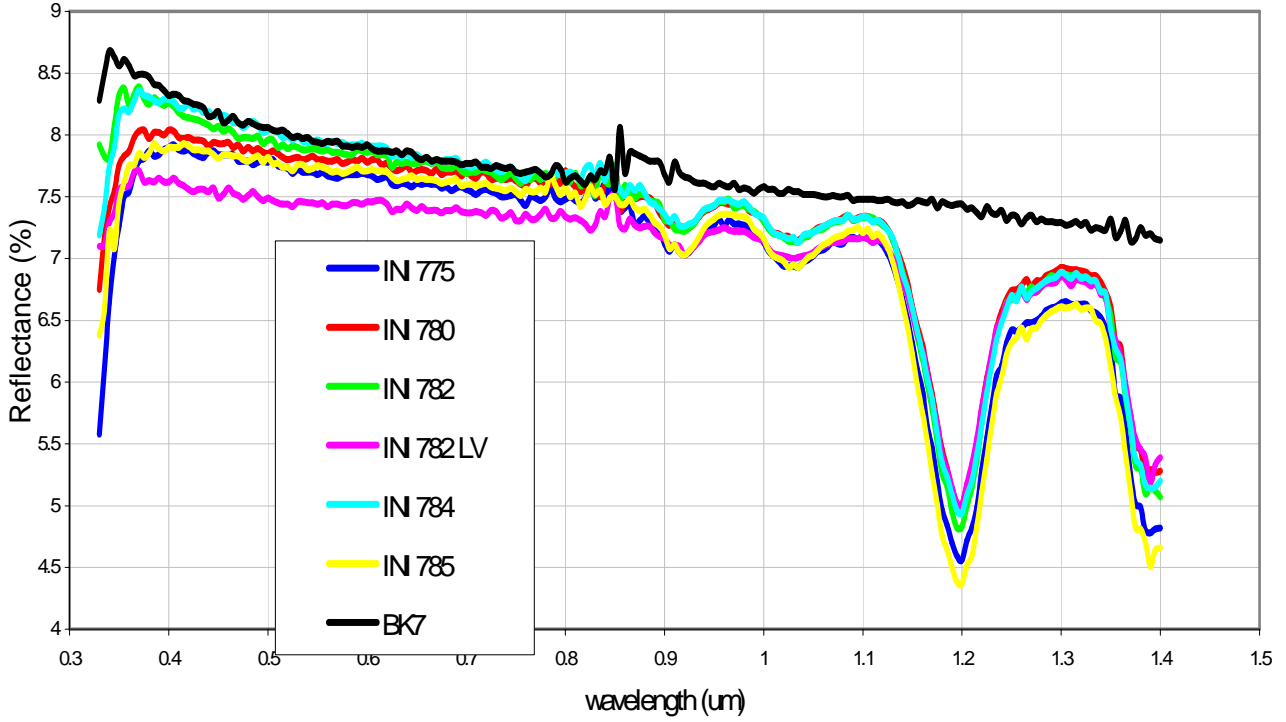
- A) Heat ageing @ 85°C for 500 hrs.
- B) UV ageing in Heraeus suntester for 500 hrs.

Reflectance and transmittance of samples were measured before and after ageing. A decrease in transmission values is seen after ageing in all samples albeit to different extents.

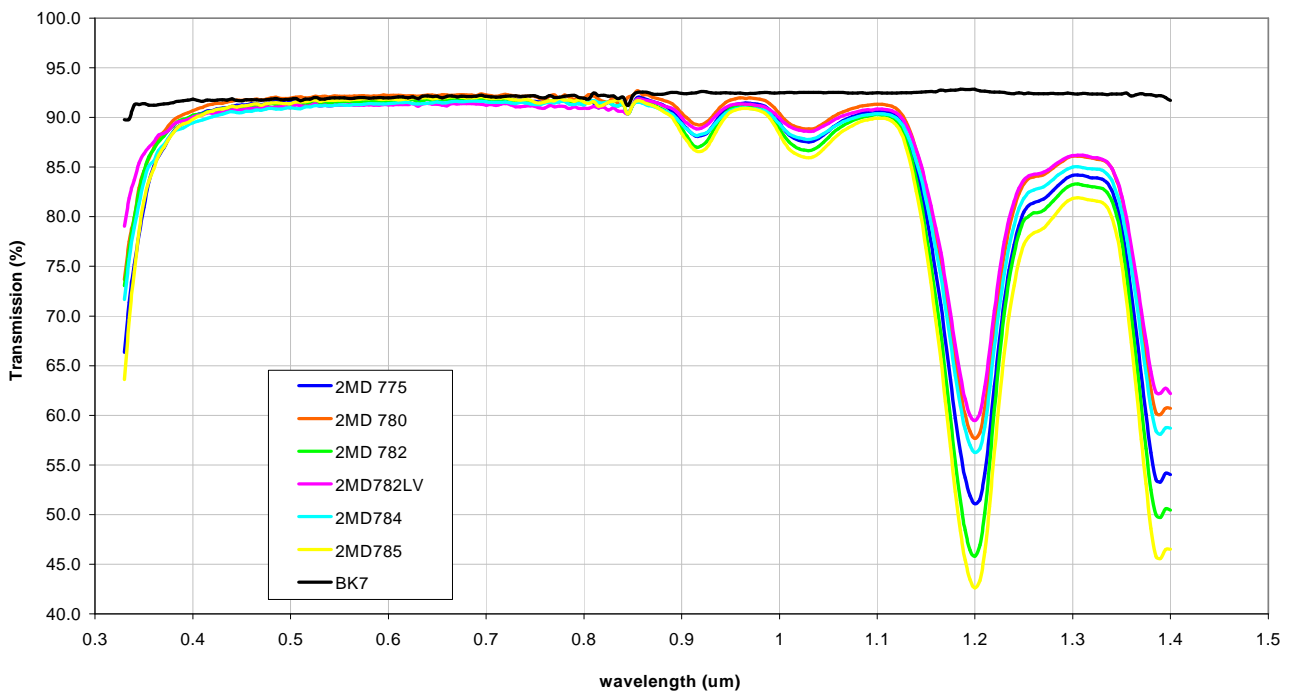
Initial Measurements:

- Initial reflectance is in the range of 7% to 8.5%.
- All samples show initial transmittance values comparable to BK7 in the 0.45µ to 0.85µ region (91-92%). It ranges between 85-91 % in the 0.35µ to 0.45µ region.
- 2MD 780 shows highest transmission followed by 2MD 775 and 2MD 785.

Reflectance Initial

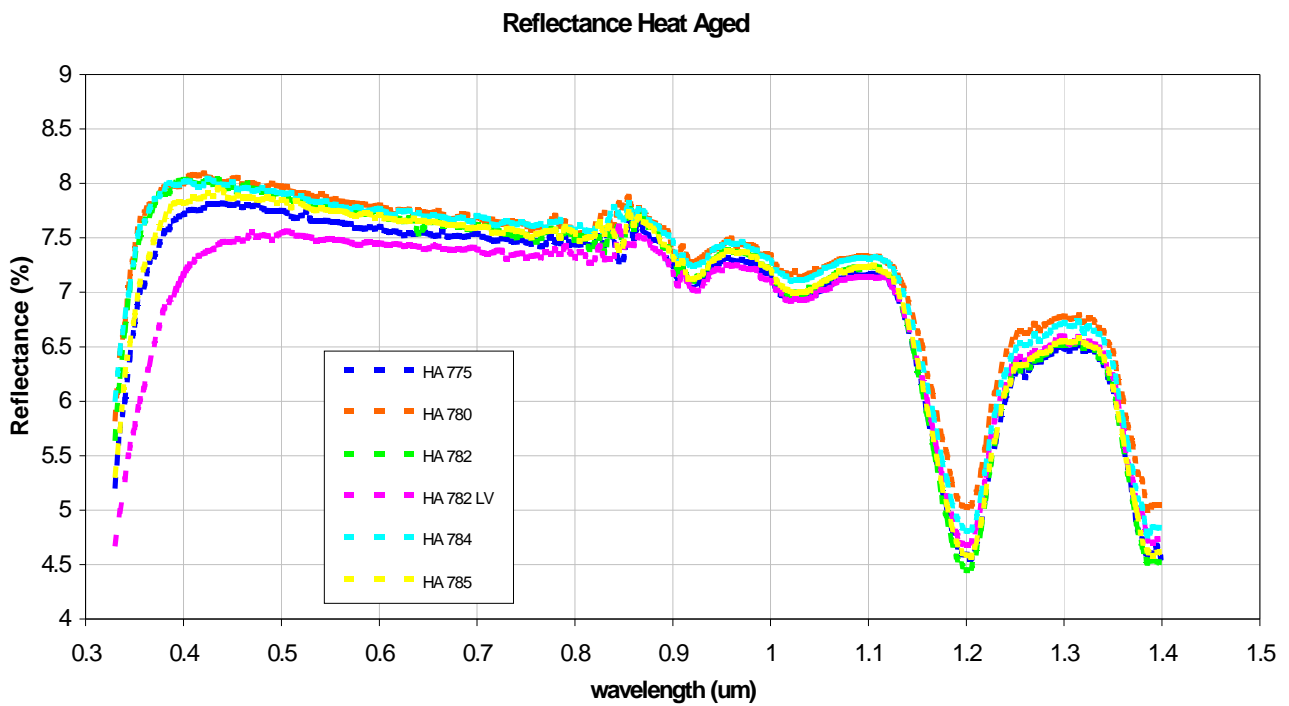


Transmission Initial

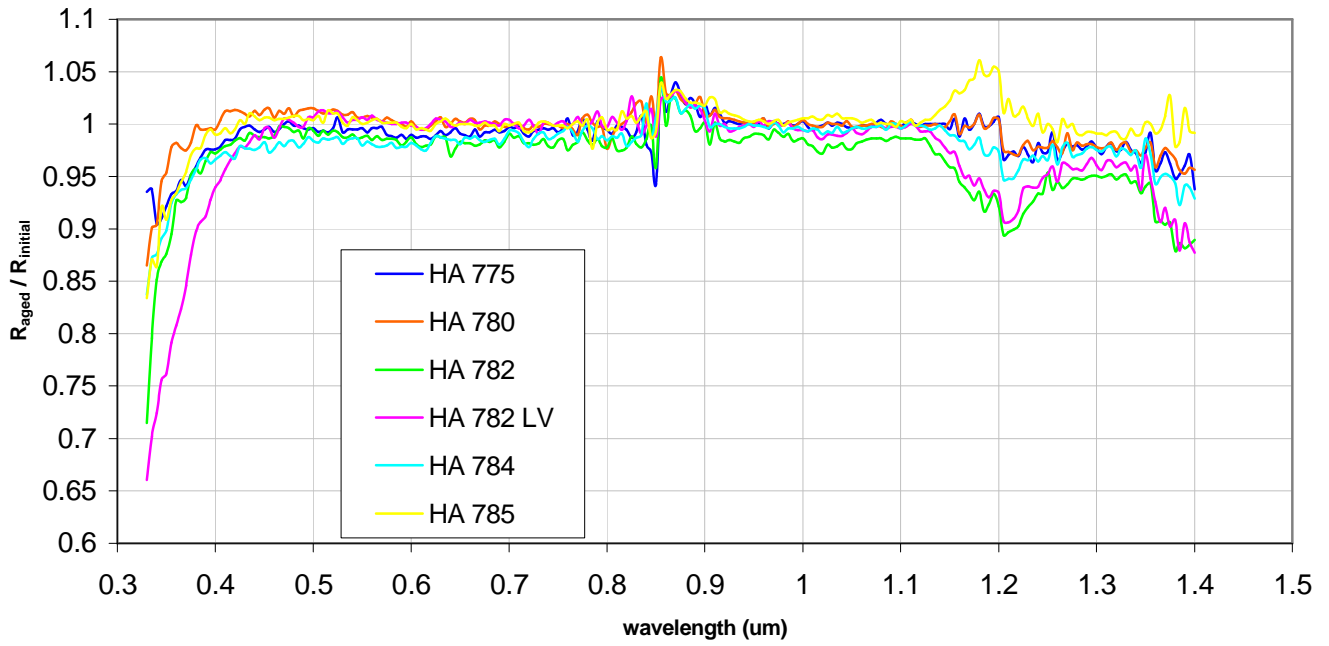


Measurements after Heat Ageing:

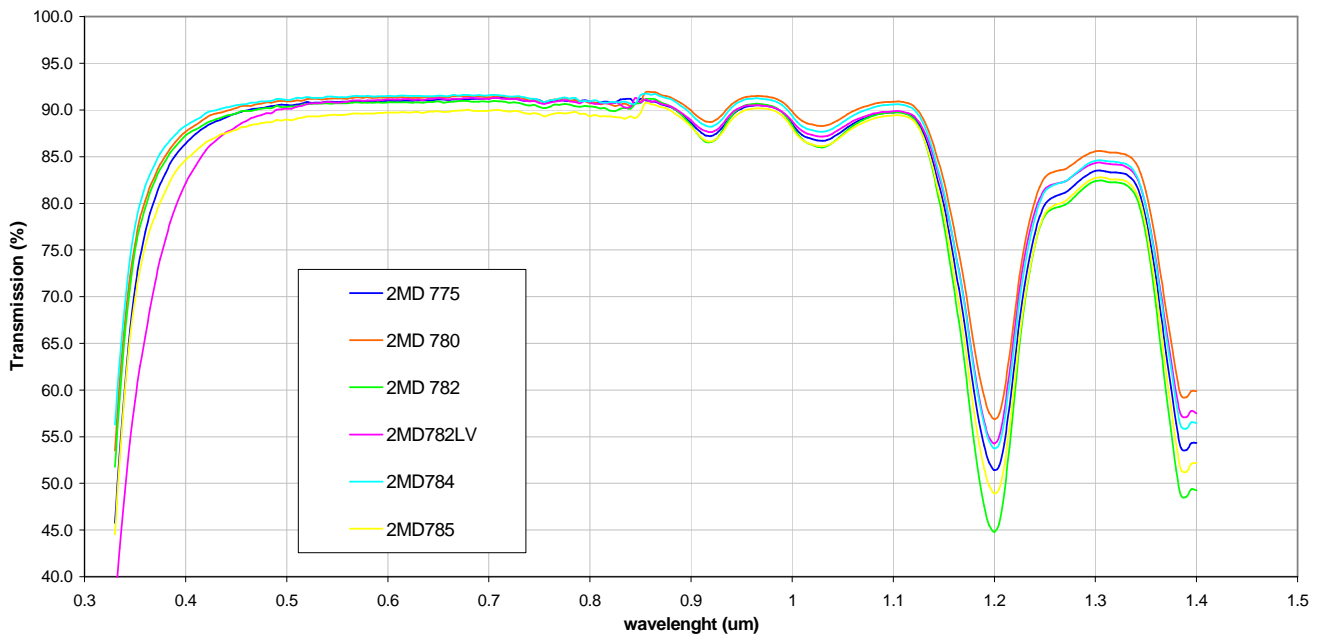
- 2MD 784 is the only grade that is mostly unaffected by heat ageing.
- Decrease in transmittance is more pronounced in the 0.35 μ to 0.45 μ region (even with 2MD 784).
- Transmittance of 2MD 785 falls below 90%. Transmittance of 2MD 782LV below 90% upto 0.5 μ .



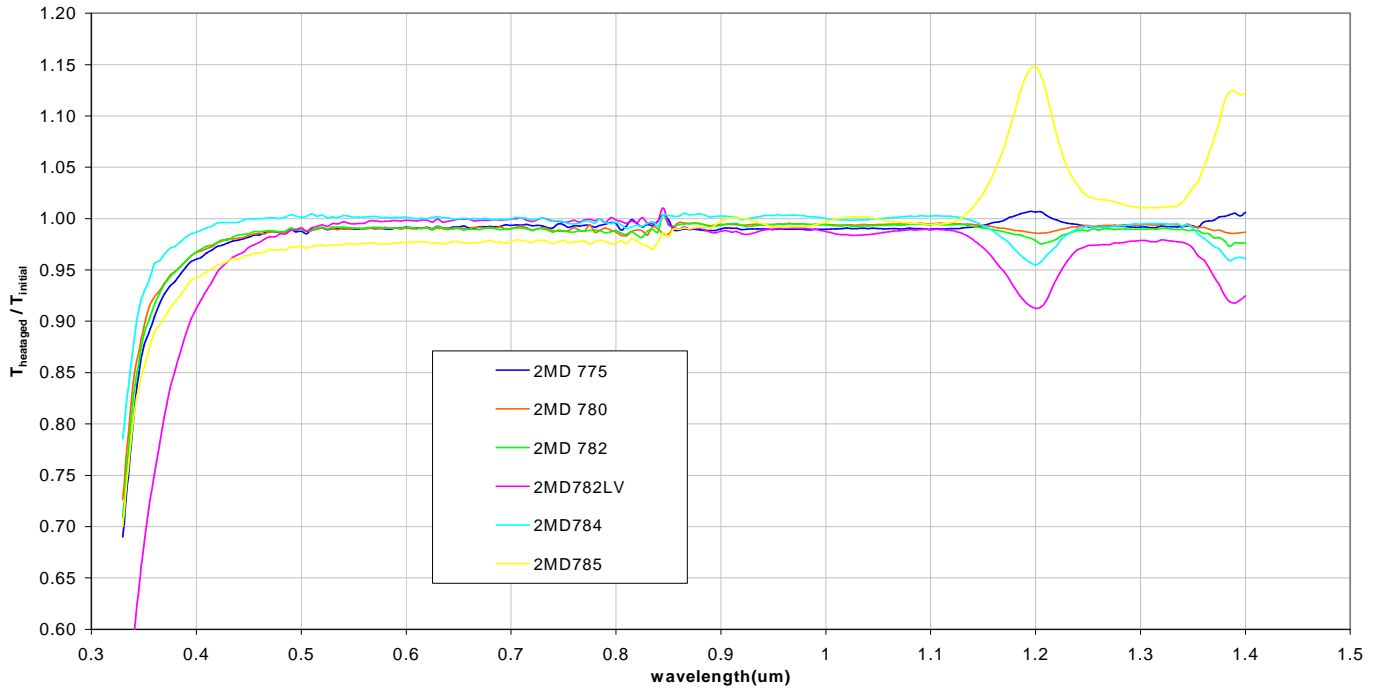
Reflectance Heat aged (change)



Transmission Heat aged



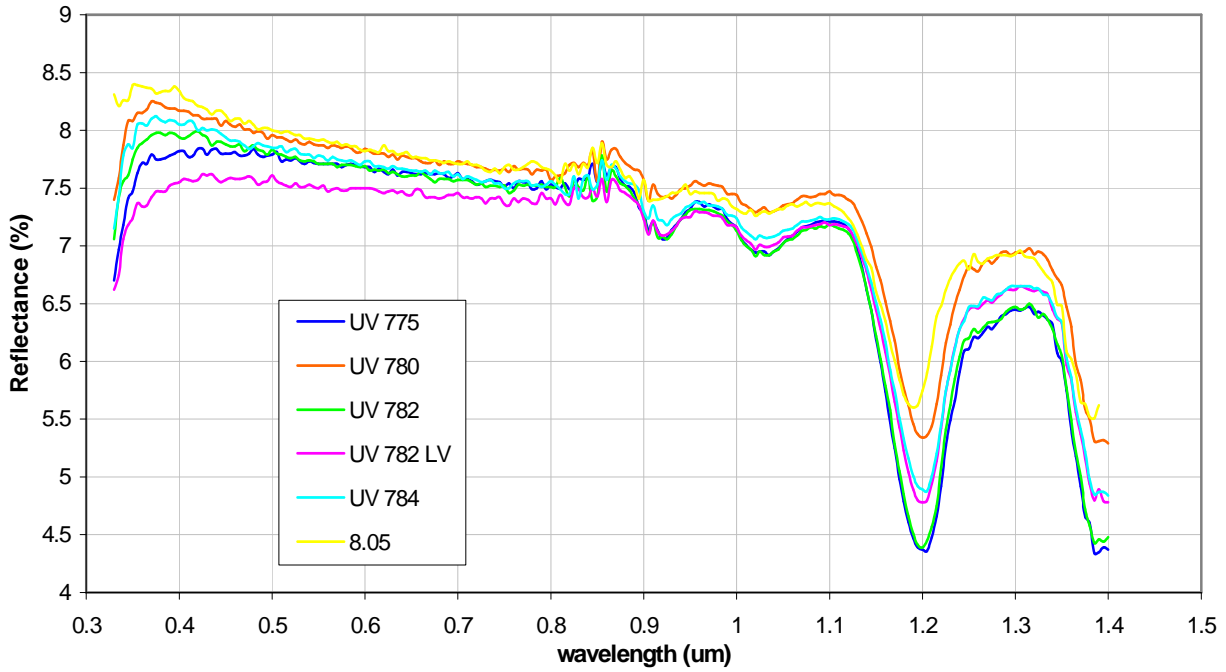
Transmission Heat aged (change)



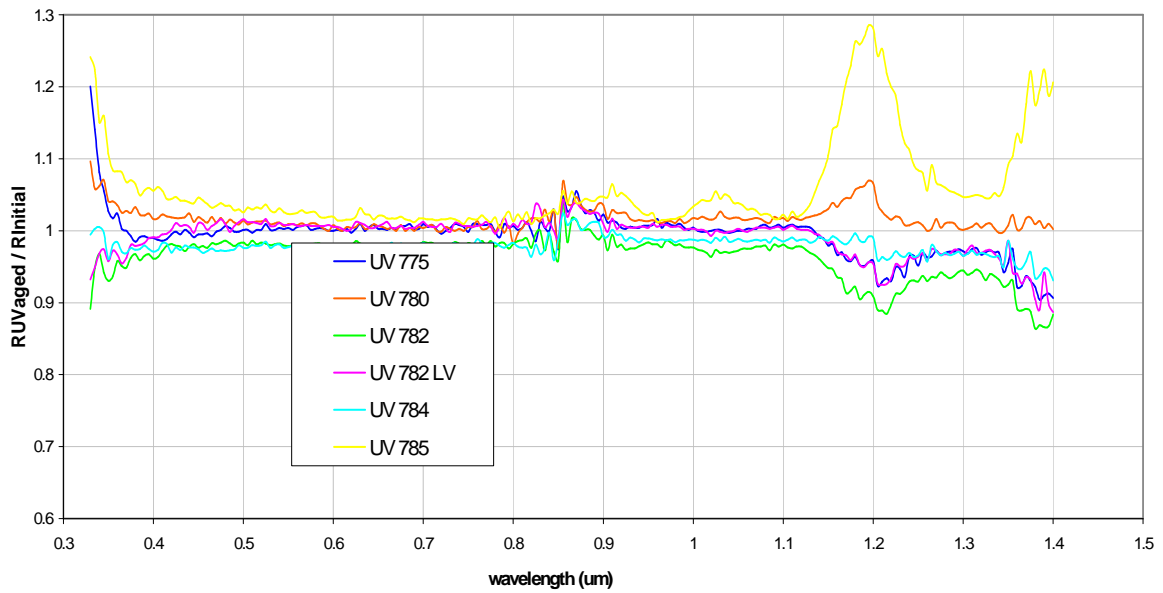
Measurements after UV Ageing:

- All grades show decrease in transmission after UV exposure.
- 2MD 775 shows highest transmission after 500 hrs UV ageing.

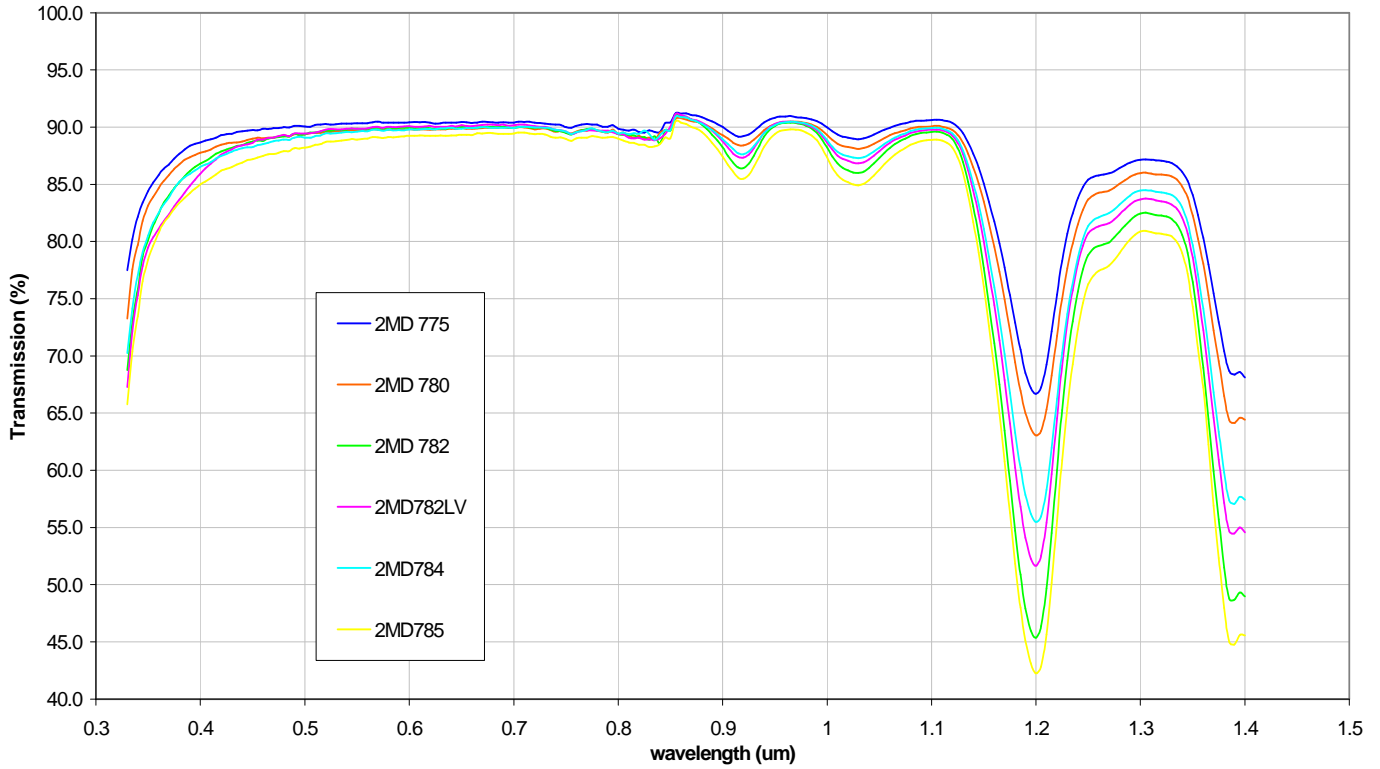
Reflectance UV aged



Reflectance UV (change)



Transmission UVaged



Transmission UV-change

