SolaLighting Limited
Sola House, 17 High Street, Olney, MK46 4EB
Tel: 0845 4580101 (local rate) or 01234 241466
Fax: 01234 241766
Email: solatube@solalighting.co.uk

Seeing the light

As an architect or specifier you'll be aware of a myriad of products and services but not necessarily fully informed of their differences and merits. There are just too many products and simply not enough hours in the day to follow up on all of the manufacturers' claims to see if these products really do deliver as advertised.

Never has this been truer than with 'sun pipes', or as we like to call them, tubular daylighting devices. That is why we've asked the Building Research Establishment to produce a report to test the two leading 530mm diameter products on the market today; the Monodraught SunPipe and the Solatube® 330 DS daylighting system.

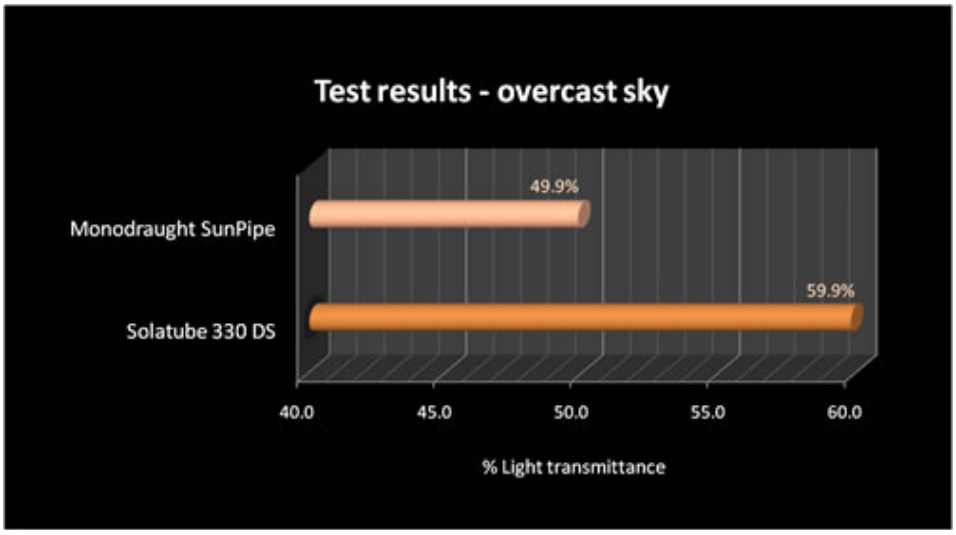
"The Solatube® 330DS Daylighting System had a significantly higher transmittance than the Monodraught one."

BRE Report No248038

The BRE tests

The BRE ran two tests to evaluate the efficiency of both systems to deliver light across a 2.4m length of tubing. The first test was carried out to see how the two systems performed under simulated sunlight conditions, with light projected at the system domes to replicate the sun at different times of the day. The second test was done to show how the systems perform in overcast conditions.

In the sunlight tests the Solatube's superior dome & tube technologies gave it a clear advantage of around 30% more light over the Monodraught SunPipe in the morning and afternoon with the advantage narrowing to around 10% at midday. In the overcast test the Solatube was consistently around 20% more efficient than the Monodraught SunPipe.

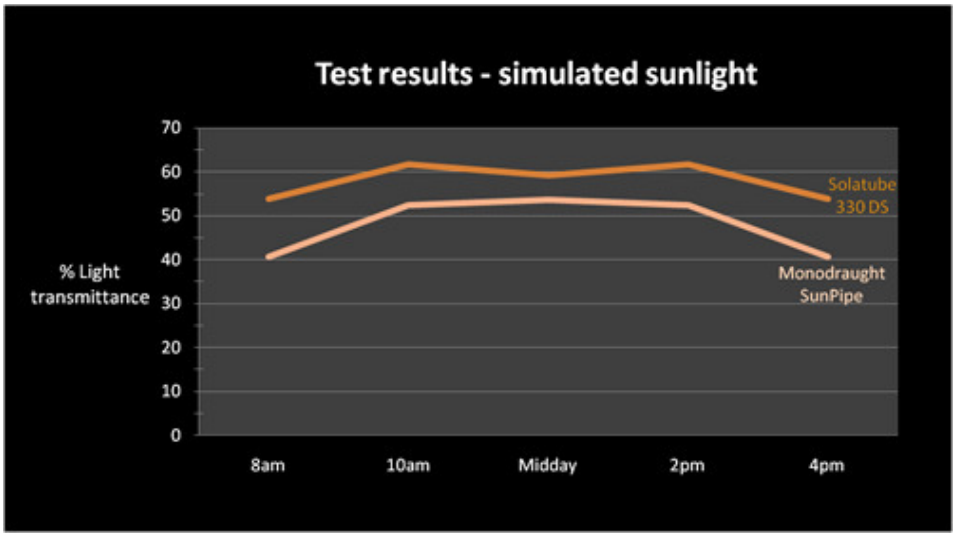


The table (left) shows the performance of both systems in overcast conditions.

On average, the Solatube 330 DS is delivering 20% more light than the Monodraught SunPipe.

Why the big difference?

Starting at the dome, the Solatube dome technologies, including the unique LightTracker™ reflector, actively capture low-level daylight and direct it into the tube. This gives the Solatube a clear advantage in the morning and afternoon with the performance of the two systems becoming closer at midday.



The table (left) shows the performance of both systems in simulated sunlight conditions.

Because of its dome technology, enabling the capture of early morning and late afternoon sun, the Solatube® 330 DS is able to deliver an even spread of light throughout the day, avoiding the midday peaks of the Monodraught Sunpipe.

However, the major factor in the efficiency of the Solatube, and the reason for its substantial class-leading performance, is the tubing material. The Solatube uses a material called Spectralight® Infinity which, at 99.7% reflective, is the most reflective tube material in the world. This compares with a reflective value of only 98% for the Monodraught Sunpipe. The difference between these two values doesn't sound particularly significant but it's clear to see that a difference of only 2% in reflectivity can make a substantial difference to the overall light delivery levels of this type of system. The use of Spectralight®Infinity ensures that whatever the application, Solatube® Daylighting Systems set the standard for all other tubular daylighting devices to try and follow.

bre - click to see the full report from the BRE.

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