

D & B ORCHIDS
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Shade Cloth and Light Requirements

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Shade cloth is used to reduce natural sunlight into a greenhouse. Use shade cloth to shade the greenhouse and to control the temperature. Shade cloth comes in 30, 40, 50, 60, 70, 80, and 90 percent. To select shade cloth for your greenhouse, determine the amount of shade required for your orchids, how much light your greenhouse covering allows through and how much shade you need to keep the temperature under 90 degrees in the heat of the summer.

After building a greenhouse, you will soon discover different microenvironments in different parts of the greenhouse influenced by greenhouse's orientation to the sun, temperature, humidity, prevailing wind, trees and buildings. Place thermometers around the greenhouse to discover hot and cool areas. If you grow many different genera, zone the greenhouse for high, med and low light requiring plants using shade cloth.

High light requiring plants (25 to 30% shade), such as Cattleya and Cattleya intergenenic hybrids, Vanda and Ascocenda, can also stand higher temperatures. Place these orchids on the west side of the greenhouse or hang them high in the greenhouse where they will receive good light all day long. Low light or shade requiring plants (70 to 85 % shade), such as Phalaenopsis, Phaius, Paphiopedilum and Ludisia also need cool temperatures. Place these orchids near the evaporative cooler or wet wall. Medium requiring light plants (20 to 60 % shade), such as Dendrobium, Doritaenopsis and Oncidium, need good light all day but not the intensity of Cattleya orchids. Place these plants on the bench where they will receive light all day. For example, place a heavy shade cloth like 60 to 70 percent on the evaporative cooler end of the greenhouse and a lighter shade cloth on the opposite end of the greenhouse. Grow the low light orchids on the shady end, the med light orchids in the middle and the high light at the sunnier end.

Light is measured in foot candles. A foot candle is the amount of light produced by a candle on a surface one foot from the candle. You can use foot candle measurements to determine the amount of light that comes through your

greenhouse covering or the manufacturer's specification. Then use the shade cloth manufacturer's recommendation for the amount of shade cloth needed to create the right amount of light. Another very good source are the members of the local orchid societies who have greenhouses and have already been through this decision making process. Ask any orchid society member for their advice and recommendations. Orchid society members have many different kinds of greenhouses. Visit as many of these greenhouses as possible before making a decision about building a greenhouse. Contact an orchid society near you by finding contact information from the American Orchid Society, www.aos.org.

If you would like to measure the light, GE makes a light meter that measures foot candles. I see it advertised in gardening magazines. Foot candle recommendations from the American Orchid Society are:

Phalaenopsis - 1,000 to 1,500 foot candles

Paphiopedilum -1,000 to 2,000

Oncidium - 2,000 to 6,000 foot candles (thin leaf to thick leaf)

Dendrobium - 3,000 to 4,000 foot candles

Cattleya - 3,000 to 5,000 foot candle

Vanda - 3,000 to 6,000 (strap leaf to terete leaf).

Every greenhouse is different. Every landscape will influence the greenhouse. Prevailing wind, greenhouse orientation to the sun, trees and buildings will influence the sunlight and temperature. The temperatures should not go above 90 degrees for low and med light plants. High light plants can stand higher temperatures as long as the humidity is high. Evaporative cooler, wet wall, air circulation and exhaust fans are used in combination with the shade cloth to control temperature.