TECHNICAL BULLETIN

COSMEDICO TECHNICAL ADVISORY: End Darkening in Fluorescent Lamps

A fluorescent lamp contains wire coils, called electrodes or cathodes, at both ends and their purpose is to conduct current into the lamp. These coils are coated with an electron emissive material that enhances the release of electrons from the coils - especially during the starting process and less so during lamp operation.

During starting and operation, the electrodes heat up and the emitter material on the coils is gradually evaporated. Some of this evaporated material will precipitate onto the wall of the glass tube near the coils. This appears as gray or gray/black deposits inside the glass at the ends of the lamp.

The electrodes in high performance lamps (140w and higher) which achieve exceptionally intensive UV output, are greatly stressed by the high starting and operating currents. As a result, "end darkening" occurs more easily with these lamps, especially if the lamps are not operated under optimal conditions (i.e., inadequate cooling).

Also, starters for these lamps must endure very severe treatment during the starting process.

As these starters reach the end of their expected life - they can contribute to the stress placed upon the lamps' electrodes - thus increasing the rate of "end darkening".

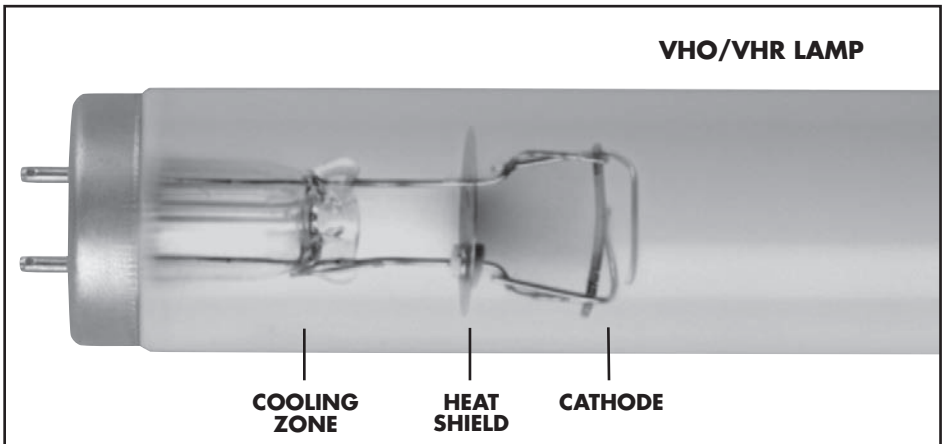

fig. 1 – VHO/VHR®-class sunlamp with extended mount cathode & cooling zone

FAST FACTS ABOUT 'END DARKENING'

- "End darkening" has virtually no influence on tanning performance or effectiveness
- Cosmedico has made every effort to reduce "end darkening" with specially designed lamp coils
- Salon operators can greatly reduce "end darkening" by changing their lamp starters at regular, prescribed intervals
- Hard and/or frequent starting, inadequate lamp cooling, and worn starters contribute to "end darkening"

Cosmedico has been able to reduce the severity of end darkening with the use of unique coil designs, although this phenomenon cannot be avoided completely.

However, it is important to understand that the dark deposits at the ends of the lamps do not reduce the tanning power of the lamp.

This is because they occur at the lamp ends in an area where little UV radiation is produced.

Even when the lamp becomes very dark at the ends - there is virtually no influence on tanning effectiveness.

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