

SDERC Lighting Display

Office Lighting: Philips high performance F32T8/ADV850/ALTO lamps

Location: SDREO open office space

Technology Description: Spectrally or scotopically enhanced lighting from a combination of high lumen, high CRI and long life T8s. The Philips F32T8/ADV850/ALTO is a good example, with a temperature of 5000K, CRI of 86, 3100 catalog lumens, and 24,000 hour rated life based on instant start ballasts at industry standard 3 hour cycles. High performance T8s, such as this Philips Advantage, are often called 3rd generation or super. Many basic grade (700 series) T8s have a CRI of 75 –78, 2800 catalog lumens, and 15,000 – 20,000 hour rating with instant start ballasts. SDREO's Solar Light Meter can show that light from the 3100 catalog lumens of the Advantage 5000K lamp is actually considerably higher, based on the way the human eye perceives light. 5000K is considered spectrally or scotopically enhanced, because it has more blue content, which is near the peak sensitivity of the human eye. Spectrally or scotopically enhanced lighting makes objects look brighter and improves contrast for tasks such as reading small print. SDREO's office area is lit by one 32W T8/ADV850 lamp per basket fixture with an instant start Advance Standard Electronic ballast (IS VEL-2P32-SC).

Applications: Offices, schools, and many other commercial and industrial facilities.

Energy Savings: In SDREO's office, one 32W T8/ADV850 replaced two 32W T8/741s per fixture. The same ballast was used with the new lights (originally 0.87 BF). Using the two lamp ballast to drive one lamp increases the ballast factor to 1.10. The T8/ADV850 lamp with a 1.10 BF saves 20W per fixture, or 45 kWh and \$6.75 per year (assuming 2,250 hrs/yr and \$0.15/kWh). Approximately 3 additional watts could be saved by using an extra efficient electronic ballast, such as Advance Optanium instant start 2 lamp standard BF ballast driving 1 lamp.

Costs: The current price for a Philips F32T8/ADV850/ALTO is approximately \$2.10-\$2.25 per lamp (when purchasing 500 or more lamps). The SDREO retrofit paid back in less than six months.

Donated Product: SDREO would like to formally thank Virginia Wilken of Philips Lighting Company for donating the lamps. For more information please contact Virginia Wilken at 760-634-5380 or virginia.wilken@philips.com.

Discussion: An F32T8 similar to the Philips 32W Advantage is the GE HL, which came out in a 5000K version. The Sylvania XP is available in a 5000K version, but XPs are only rated for 18,000 hours with instant start ballasts. Philips and GE just came out with 5000K 2ft F17T8s and 3ft F25T8s, so complete projects can all use 5000K lamps. With high lumen 5000K lamps, significant wattage can be saved by delamping and using lower BF ballasts. With the upcoming 0.6 BF T8 ballasts significant wattage can be saved even when fixtures cannot be delamped.