Silescent® 2 x 2 LED Troffer

Case Study IV

Miami Country Day School

First Grade Classroom

Fixture Replacements

Miami, Florida

Featuring Silescent's Circle-Lit™ LED Troffer 23.75 inch, 40 watts/fixture

Project Objectives...

Replace existing 3-tube, 2x4 troffer fixtures with the specific goals of:

- **Reducing energy consumption;**
- **Improve lighting quality and distribution - overall;**
- **Addition of 2-zone dimming control (existing single-zone ON/OFF);**
- **Reduce maintenance costs of ongoing re-lamping, cleaning and fixture replacements.**

Silescent® combines LED technology with patent protected thermal management, electromechanical assembly and the industry's most advanced drive circuitry.

Project Performance...

Total Savings achieved $1,200/year
($1200/year/classroom) ($75/fixture/year)

(Detailed analysis on reverse side)

SILESCENT® Lighting

SUPER EFFICIENT, LED LIGHTING PRODUCTS

Project Scope...

EXISTING 3 -Tube, 2x4 Troffer Fixtures

Fixtures.....Fluorescent 2x4 Troffer fixtures, 120VACin
Lamp .....32 watt tubes x 3 = 96 watts/fixture
Ballast (Factor) .....10% (10 watts/fixture)
Number of Fixtures.....16 fixtures
Total existing Wattage.....1,696 watts
Controls .....Single Zone, ON/OFF

REPLACEMENT Silescent Fixtures

Replacement Fixture .....Silescent 40 watt Circle-Lit LED Troffer
Wattage .....40 watts/fixture
Number of Fixtures.....16 fixtures
Total replaced Wattage .....640 watts (62% reduction)
Controls .....Two Zone, Dimming (Silescent 4-wire digital, SimpleNet dimming)

Summary of Savings...

Energy Savings:

Considering Equal Usage:

Energy Savings: (105.6w – 40w) x16 x12 hrs/day x 5 days/wk x 45 wks/yr x $.15/1,000watts =.....$425/yr.

Additional Savings for HVAC Cost Reductions:

Energy Savings: 30% savings (est.) of energy used to be realized from A/C = ...$128/yr.

Added Savings from Dimming and Zone Control:

Energy Savings: estimated 100 watts/hour x $.15/1,000 x 2,700hrs/yr = ...$40/yr.

TOTAL Energy Savings: $425/yr + $128/yr + $40/yr = ...**$597/year/classroom**

Maintenance Savings*: *Bulb/Ballast/Lens part replacements + Labor to replace these items.*

1-½ Bulb replacement/year x 16 fixture x 3 lamps/fixture $3.50/bulb =$13.50/fixture x 129 =.....$252/yr
Bulb replacement Labor: 6 min./bulb at $30/hr (estimated) x 72 bulbs replaced/yr = ...$216/yr
Using 15%/yr Ballast failure rate x 16 fixtures x $16/Ballast = ...$38/yr
Ballast replacement Labor: 15 minutes/ballast at $30/hr (est.) x (.15x16) fixtures/yr = ...$18/yr
Each Diffuser replaced on average every 3yrs @ $12/diffuser x (16/3) diffusers/yr = ...$64/yr
Lens replacement Labor: 6 min./diffuser at $30/hr (est.) x (16/3) diffusers/yr = ...$16/yr

*****All replacement parts and labor costs provided by Miami Country Day School, Facilities Manager*

TOTAL SAVINGS: $597 (energy) + $354 (parts) + $250 (labor) ≈ $1,200/year/classroom ($75.00/fixture/yr)

Additional Benefits...

- Full spectrum array based LED - improves visual acuity;
- Wide dispersion beam spread – provides even illumination with no dark shadows;
- Sanitary design allowing it to be easily cleaned;
- Extra-long 100,000 hour life rating – maintenance free operation.

Silescent® Lighting Corporation 954.766.8448
1417 SW 1st Avenue 877.766.8448
Fort Lauderdale, FL 33315 Fax: 954.206.0071
www.silescent.com