

# Resource Efficiency Solutions, Inc

## Induction Retrofit Installations

### List of Retrofit Places

Here is a list of places RES has completed retrofits or demo retrofits. For more detailed information please visit our website at [www.resisaves.com](http://www.resisaves.com).

City of Celebration	Progress Energy HQ
City of Ft. Myers	Santa Fe College
City of Punta Gorda	Sivance Chemicals
City of St. Petersburg	Southwest Regional Airport
City of Tampa	St. Petersburg College
City of Winter Park	State of Florida
Florida State University	Tropicana Field
Florida VA Medical Centers	University of Florida
General Growth Properties	University of South Florida
Lee County Government	University of Tampa
MIT	Vinoy Hotel
Momentive Chemicals	Waste Management

### Types of Retrofits

Here are some of the types of fixtures RES can retrofit for you:

#### Fixtures:

High Pressure Sodium, Metal Halide, Wall Pack, Explosion Proof (for chemical companies)

#### Lamps:

Incandescent, Cobra Head, Acorn

#### Luminaries:

High/Low Bay, Roadway, Shoe Box, Flood, Architectural, Tunnel

**..And many more**

### St. Petersburg Retrofit Projects



Approximately 2,000 of the City's Acorn style lights were **retrofitted** with custom made induction retrofit kits as pictured above. The retrofit kits were installed on city streets, neighborhood streets and in city parks.

Existing metal halide and high pressure sodium systems ranging from 120 watts to 290 watts were replaced with 55 watt to 165 watt induction retrofit kits. The project has an average **energy savings of 60%**. Also, the induction retrofit kits have a rated life five to ten times longer than the systems they replaced and are expected to **last for over 20 years** when operated 12 hours per day.

## Florida Utility Headquarters



The 210 watt metal halide components of the existing fixtures at the Florida Utility headquarters building were replaced with 85 watt induction **retrofit kits**. The kits were designed and heat tested specifically for the existing fixtures and came with a full 5 year manufacturer's warrantee.

By re-using the existing fixture housings and replacing the inefficient components, this Florida Utility benefits by preserving its initial investment in the relatively new fixtures while helping the environment by reducing landfill waste.

The new fixtures represent an **energy savings of 59%**. Also, the induction lighting has a much higher Color Rendering Index (CRI) than the existing metal halide lighting and provides a whiter light with less glare, helping to improve security.

## Santa Fe College Retrofit Projects

### Sidewalk Pole Light Retrofits:

The existing cube style walkway fixtures pictured to the left originally used a 100 watt metal halide system (120 watts with the ballast).

The metal halide system was retrofitted with a 23 watt screw in induction system resulting in an **energy savings of 80%**.

David Diefendorf, SFC Supervisor, remarked that the light provided by the induction retrofit looked "cleaner" than the old metal halide system.



### Racquet Ball Court Retrofit Kits:



The existing 400 watt (480 watt with ballast) metal halide fixtures were retrofitted with 200 watt induction retrofit kits. The retrofit has an **energy savings of 58%**. The photo to the left shows the induction retrofit next to the existing metal halide fixtures.

Since induction lighting turns on instantly, there is also the opportunity to save significantly more energy by turning off the lights when the courts are not in use. This was not possible with the metal halide lighting that had a 10-15 minute warm up time.

## **Parking Lot Retrofit Kits:**

The College's parking lot lots originally used 390 watt pulse start metal halide lamps and ballasts. The existing fixtures were heat tested and a custom 200 watt induction retrofit kit was developed for the existing fixtures.

The induction fixture retrofit kits represent an **energy savings of 48%** when compared to the original metal halide system. Also, the induction lighting has a much higher Color Rendering Index (CRI) than the existing metal halide lighting and provides a whiter light with less glare, helping to improve security.

To see how this retrofit earned SFC rebates from Gainesville Regional Utilities please see our case study on ([link](#)) [Santa Fe College](#)



## **The City of Sunrise Racquet Ball Court Retrofit Kits**



RES supplied 12 specialty induction retrofit fixtures to the Athletic Club. These kits were especially designed for lighting in racquet ball courts. This will greatly reduce maintenance costs over the years, since these fixtures have a 100,000 hour rated life.



Lamp Assembly



Ballast Housing

## The University of Florida in Gainesville

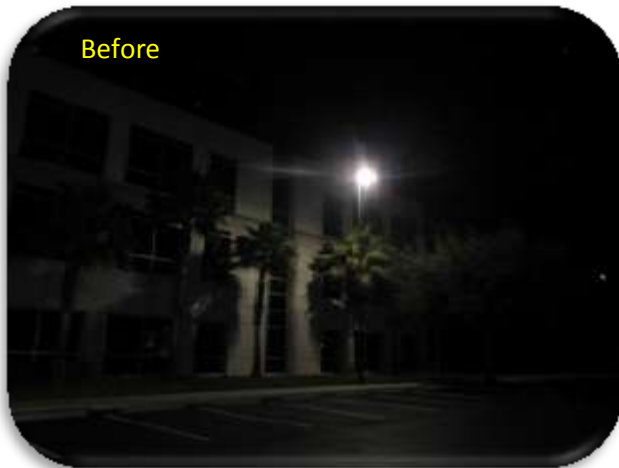


The 180 Watt high pressure sodium components of the existing fixture were replaced with 85 Watt induction retrofit kits. That's **an energy savings of 53%** per fixture. The kits were designed and heat tested specifically for the existing fixtures and come with a full 5 year manufacturer's warranty.

By re-using the existing fixture housings and replacing the inefficient components, the customer benefits by not losing their initial investment in expensive fixtures while helping the environment by reducing landfill waste.



## Highwoods Preserve



In this parking lot induction retrofit project **Resource Efficiency Solutions, Inc (RES)** supplied 13 retrofit fixtures, reducing the wattage from 460 watts to 250 watts induction. **Thus gaining 46% in energy savings.**

As can be seen in the pictures the color rendering index (CRI) was increased from .62 to .85. A CRI is the measure of a light source's ability to reproduce colors compared to day light. This greatly improves a security camera's ability to record images and color at night, as well as improving security for pedestrians walking to their cars.

# Parking Lot Fixture Retrofit

**500 watt induction retrofit kit** light levels are just as good as many of the existing\* 1000 watt metal halide (1180 with ballast power included), single pole fixtures and yet we **save 680 watts per fixture and have 5 times the rated life**. Additionally our 500 watt induction retrofit kit is an easy installation.

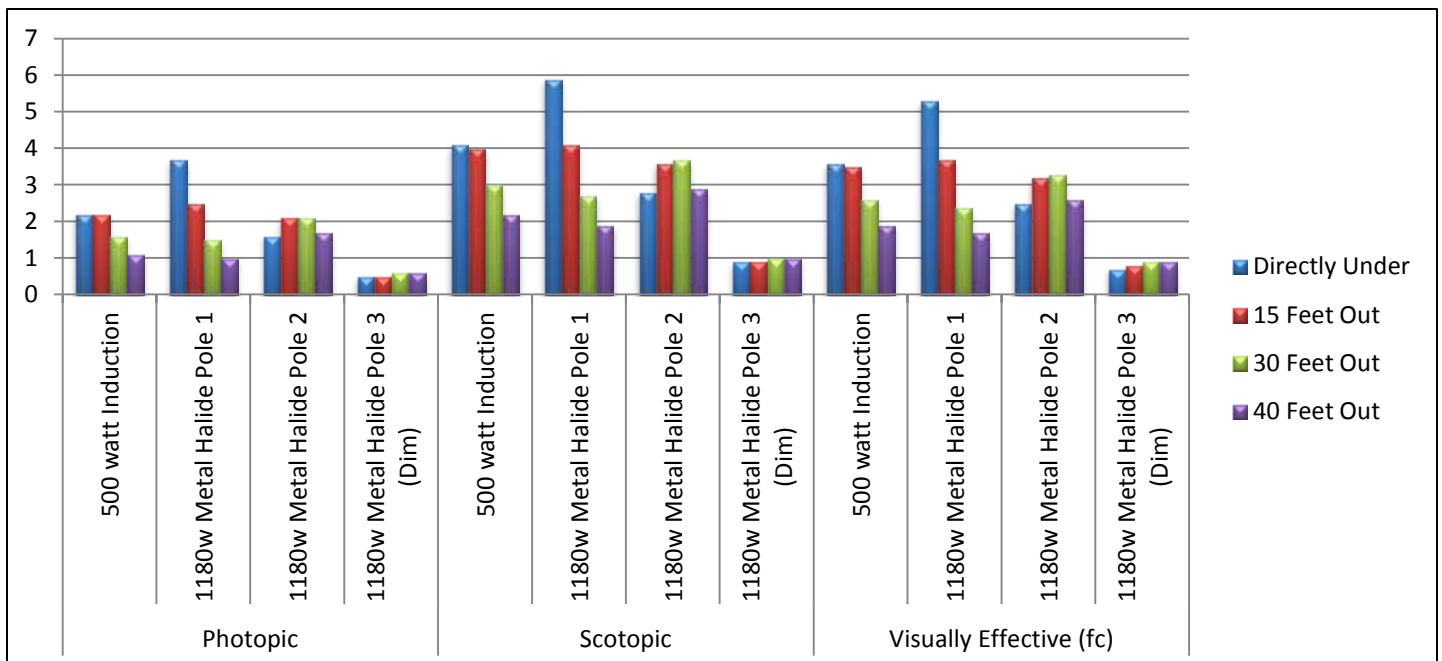


\*Many fixtures in the parking lot are out. Since the 500 watt induction light output is comparable to the 1000 watt metal halide fixtures that have been in use for a few thousand run hours, when all lights are changed to 500 watt induction, the light levels in the parking lot will be greatly improved. The CRI (color rendering index) of metal halide is .62 compared to .85 for induction. The higher CRI will provide better light for security cameras and have less glare to the human eye.



1000 watt metal halide (1180 with ballast power include)

## Light Levels Comparison:



**Energy Savings Per fixture:**

Existing 1180 watts metal halide

Runs 4380 hours per year

Divide by 1000 = 5168.4 kwh per year

Times a blended rate of 11 cents = \$568.52 per year in energy cost

Induction 500 watts

Runs 4380 hours per year

Divide by 1000 = 2190 kwh per year

Times a blended rate of 11 cents = \$240.90 per year in energy cost

***Savings of \$327.62 per fixture annually in energy***

**Maintenance Savings:**

The rated life of induction is 100,000 hours with a lumen depreciation of 30-35% at 100,000 hours. The rated life of 1000 watt metal halide is 20,000 hours with a lumen depreciation of over 50% at 10,000 hours.

The 1000 watt metal halide fixtures lose lumens rather fast so after only a few years of use, the light output is less than half of what it was when new. Metal halide lamps and ballasts will need to be changed at least 5 times (most likely more) more than the induction systems. When you factor in the cost of replacing lamps (using a lift) the maintenance savings may turn out to be more than the energy savings on an annual basis. Plus with induction, the manufacturer provides a 5 year warranty on the induction components.