



THE HEALTHCARE PROFESSIONALS

GUIDE TO BETTER LIGHTING



Your staff is well-trained, the office is spotless, and the care is top notch.

You go a long way to give your patients the best in service, and the details matter to you. You understand that all of these little things can add up to make a lasting impression on your patients. One detail you might be overlooking, though, is the lighting in your office or facility. Light and its quality are vitally important to getting off on the right foot with everyone who walks in your door.

Before your patients even sign in for their appointment, wow them with your leading-edge workspace by upgrading to new LED fixtures.

The good news is that all of these concerns can be addressed, and that it isn't difficult to take control of the patient experience as it relates to your lighting. Better lighting technology is more affordable than ever. Coupled with the energy savings you will realize, and the noticeable improvement of the patient experience, **the question ceases to be can you afford to upgrade your lighting? It becomes, how can you afford not to?**

Here are five ways that better lighting can improve the patient experience for your practice.



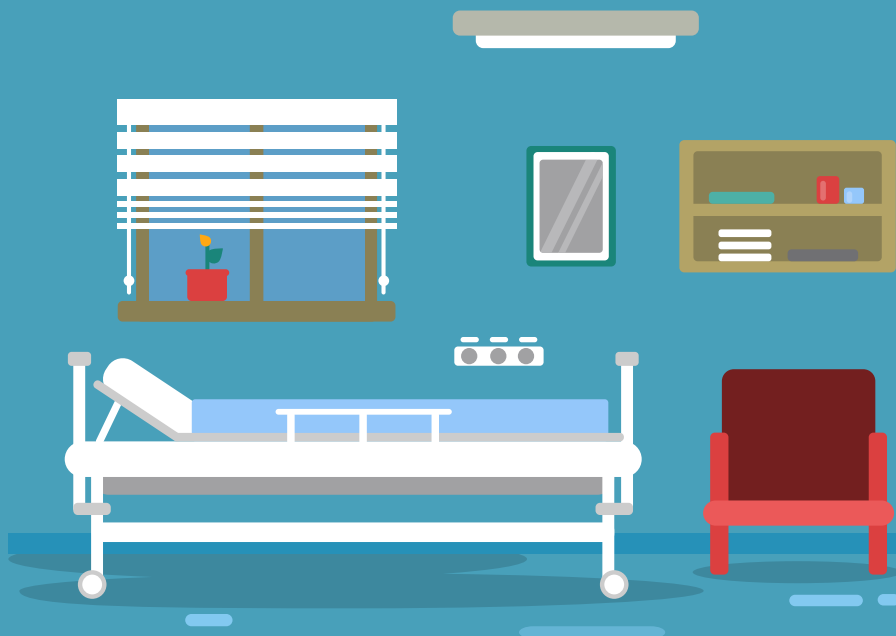


Less Money on Lights, More on Patients

At first glance, this might seem more important to your bottom line than it is to your patients, but take another look. Old, outdated lighting systems are inefficient and cost more to operate, leading to higher bills. New, more efficient technologies – such as LED – have longer lifetimes and are cheaper to run. They save you money on your energy and maintenance expenditures, allowing you to re-invest in more patient-centric perks. Take the money you save on new lights and use it for coffee in the waiting room, or candy for the kiddos.

New Lighting is More Comfortable

Your current, outdated lighting system is a headache – literally! If you use fluorescent fixtures, you are unwittingly subjecting your patients and employees to a phenomenon known as a strobing effect. A study by the Salk Institute has shown that this effect is directly linked to headaches and eye fatigue. Upgrading to LED lights, which do not produce a strobing effect, can greatly increase the comfort level of both patients and employees alike.



Show Off Your Practice in the Best Light

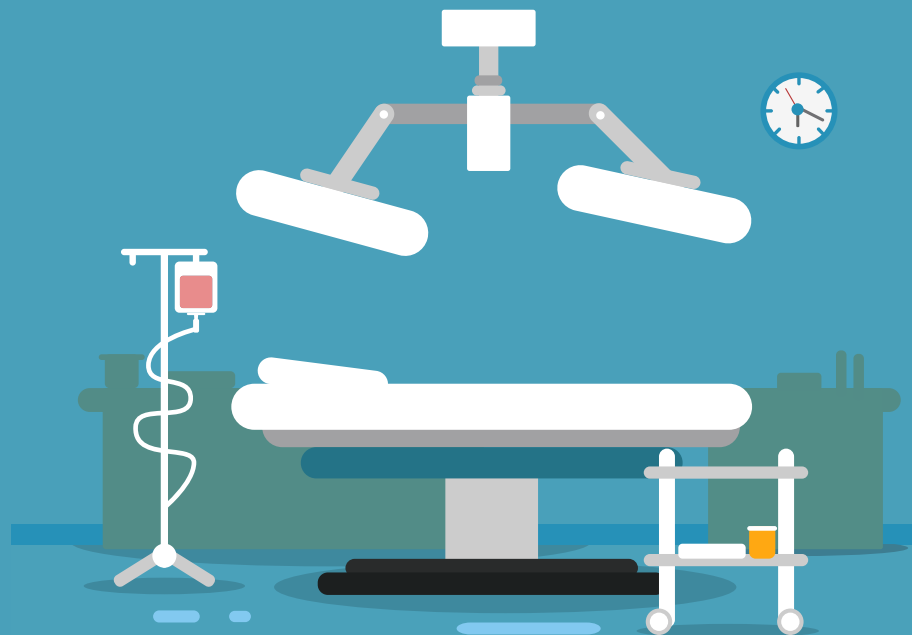
You've gone to great lengths to make sure your practice is modern and new, with the best equipment and furnishings. However, your old lighting could be sabotaging your best intentions. Fluorescent lights have what is called a low color rendering index (CRI). This means that the light they produce can make even the newest, shiniest things appear old and dingy. LED lights have a much higher CRI, allowing you to show off your office and really make things shine for your patients.

Better Lighting, Better Care

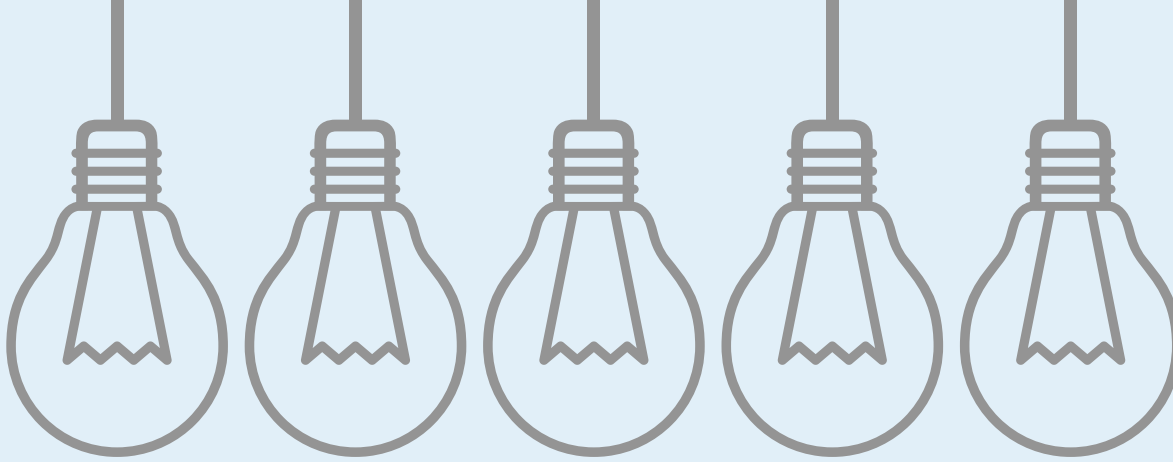
The patient experience largely begins and ends with their interactions with your staff. That's why you've hired the best, and why you train them so well. But even the best employees can make mistakes. However, a recent study has indicated that there is a link between better job performance (fewer mistakes made) and better lighting. When your employees are working in well-lit spaces, they are better at their jobs, which naturally leads to a better overall experience for your patients.

Stay on the Leading Edge for Your Patients

We all know that first impressions are crucial. One of the first things a new patient will notice about your office is how modern it appears to be, and lighting plays a huge role in getting you off on the right foot. The LED revolution has spread to businesses and industries of all shapes and sizes, and if you aren't riding that wave it could make you look like you're stuck in the past.



So now that we've talked a little bit about how lighting can help improve the patient experience, let's talk about how you can actually go about getting better lighting.



STEP 1

LIGHTING SNAPSHOT



The first step in any lighting project is to conduct a Lighting Snapshot.

From this Lighting Snapshot we will determine what type of lighting you currently have, how many you have of each type and what the energy savings can be when you retrofit to LED lighting. This snapshot will also serve as a guide when ordering lights in step 2.

In addition to this guide, we've provided a Lighting Snapshot Worksheet for you to follow along and create a Lighting Snapshot for your facility.

We're always here to help. If the facilities you manage have unique requirements, are too large or are spread out across multiple locations and you need FSG to conduct a complete audit for you. Reach out to us and we will work with you to create a lighting upgrade plan.

What types of lighting do you have?

For you to love your new lights, the process to upgrade needs to be easy. In order to make sure that your new lights fit, we're going to discover exactly what you currently have.

The lighting industry has been around since the early 1900s, and like any industry over time the technical description of products has grown in complexity as new products and innovations make their way into the marketplace. We'll briefly describe some of the ways we describe lamps so that upgrading your lighting is as smooth a process as possible.

Although the majority of your lights will fit into a few categories, we'll identify your current lights by:

Environment, Look, Shape, Wattage, Color, & Base

TIMELINE OF TECHNOLOGY

Over the decades, lighting has improved dramatically as we invent more efficient ways to turn electricity into light.



INCANDESCENT

Energy: *100w
Lifespan: 750 hrs



HALOGEN

Energy: *77w
Lifespan: 1000 hrs



CFL (Compact fluorescent)

Energy: *23w
Lifespan: 10,000 hrs



LED (Light-emitting diode)

Energy: *20w
Lifespan: 20,000 hrs



* energy required to produce 1,600 lumens

Lamp Environment

What type of environment does your lamp live in? There is a big difference between a lamp that is designed for an office, a kitchen or an oxygen-rich environment. If your facility has locations with have these or other special requirements, let us know when you speak to us and we will make sure that you get lighting that fits your specific needs.

Look

The overwhelming majority of lamps that you will need will either be frosted or clear. There are though, special situations where a blue, red or another color might be necessary for the task at hand. FSG isn't locked into any specific vendor or manufacturer so if it is out there, chances are we can find it for you.

Shape, Size & Base

Although shapes and sizes can vary, most of the lamps in your facility will either have a screw in base (medium or candelabra) or, in the case of fluorescent tubes, standard pins. If you do run across fixtures that are outside of these standards, we have provided a complete chart in the appendix that will allow you to identify your lamps.

LAMP SHAPES AND APPLICATIONS

 A LINE	 GLOBE	 BT	 DECORATIVE	 REFLECTOR	 TUBE
DECORATIVE 	     				
HANGING 	     				
CEILING 	     				
RECESSED 	     				

Color Temperature

In simple terms, “color temperature” is a method of describing the color characteristics of light. In the past, when we created light by heating a filament, as it got hot enough to glow, the light it emitted would shift in color from deep reds, to yellows, to blues. We came to describe the character of the light based on the temperature at which it was produced.

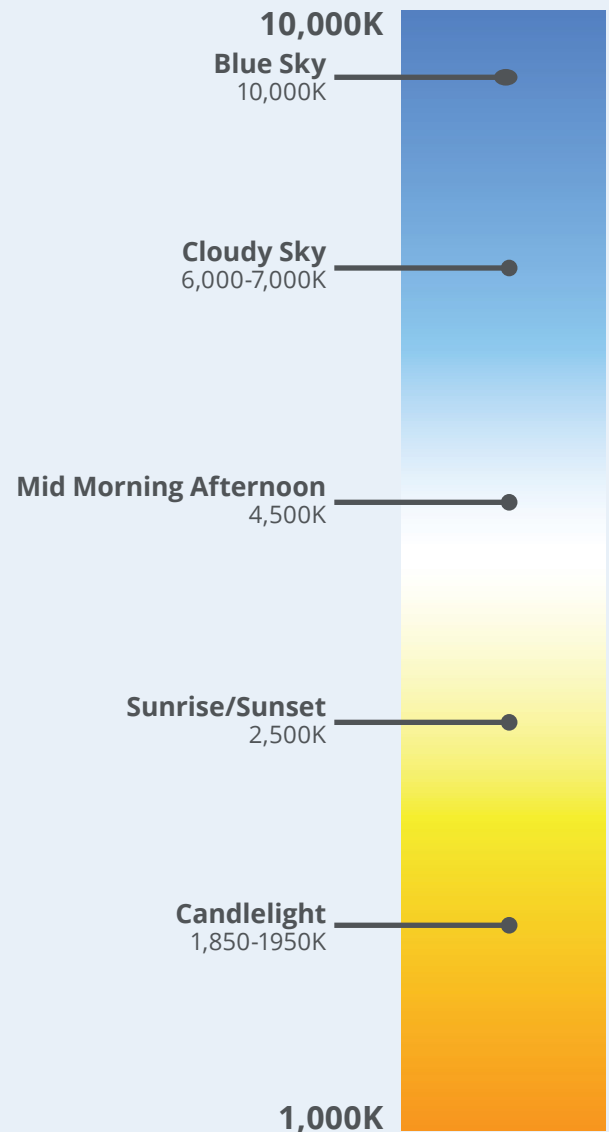
The scale goes from 10,000K (a bright blue sky) to 1,000K (Glowing Embers). **Light above 5,000K is considered ‘cool’ and light below 5,000K is described as ‘warm’.**

Your current lights will most likely not have a color temperature designation, they will likely say “cool white”, “daylight” or “warm white.” LED lamps are offered in a variety of color temperatures. When you upgrade to LED you will need to pay attention to the temperature of the new light if you want to match the feel and aesthetic of your current lights.

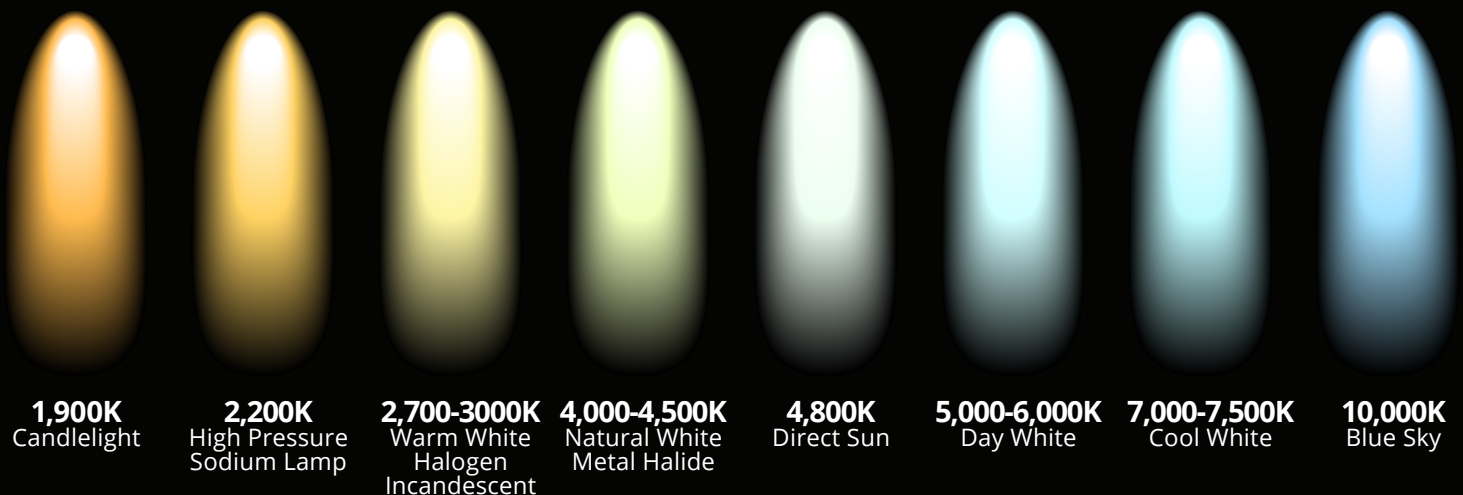
Another color term that you might see is CRI (Color Rendering Index). A light’s CRI rating describes how accurately it displays color. A higher CRI signifies that the light displays color more accurately and a lower CRI signifies that the light will shift the way it illuminates some hues.

When comparing lamps and fixtures, a higher CRI will provide light which is easier on your eyes, and aid accuracy in environments where distinguishing between subtle changes in color is important.

Have you ever had difficulty distinguishing between dark shades of blue and black? If you have, then you’ve seen the differences between lamp’s CRI in action.



THE TEMPERATURE OF THE LIGHT EFFECTS HOW WE SEE AND FEEL



CREATE YOUR LIGHTING SNAPSHOT

Now that you understand the types of lighting, we are going to use our new knowledge to create a snapshot of each room of your current installation.

When you upgrade to LED you'll have more options to choose from when it comes to brightness and color and you'll want to make sure the new LED lighting is going to be perfect for the task or workspace it's lighting.

Not only will this insure that your new lighting can be installed easily, but if you speak with FSG, we can use this information to calculate the energy savings that you can expect with your newer, energy efficient lighting. Depending on the size of your facility and your daily usage, your energy savings will not only be better for the environment, but could offset the entire cost of your project.

So, not only will your new lighting look better, perform better and improve your facility, but over time, it could pay for itself.

Let's meet Sally and Bob. We will follow along with both of them as they go through the process of upgrading their lighting. Sally and Bob are both excited about what new LED lighting can do for their facilities. Although both of them are in the healthcare field, they have very different needs.





"I'm going to need some help to complete this project. We can't do this on our own."

Sally

Position: Office Manager of a large medical practice

Task: Lower the operational costs of her practice by 15%

Sally is an office manager of a large medial practice in Denver. She has worked to streamline office supply ordering, janitorial services and copy machine maintenance. However, she still needs to lower her operational spending by another 15-20%. She's heard that upgrading the office lighting to LED could provide the savings she is looking for. The efficiency of LED combined with potential rebate opportunities in the Denver area would give her the 15-20% operational spending reduction she needs.

Sally decides that she wants to upgrade the office lighting and starts with a Lighting Snapshot. As she goes through the Lighting Snapshot, she learns that most of the office is lit by 2x4 fluorescent light fixtures and starts to count but then stops when she gets to about 200 fixtures realizing that this project is going to be much bigger than she originally thought.

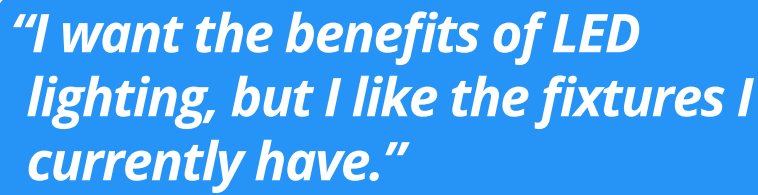
This both excites Sally (because a bigger project means bigger savings), and scares her because it means there's a lot more work than she originally had planned.

Thats when Sally calls FSG and they schedule their lighting teams come out and perform a complete audit her facility. FSG asks a few basic questions that Sally quickly knew the answers to such as the square footage of her facility, what type of lighting she currently has, and how much she pays per kWh.

Relieved to learn that FSG can handle the entire project, Sally sits back, relaxes, and let's FSG get to work.

"I'm glad you called, we're here to help. Let's get started."





He decides to take on the project on a Saturday by first counting how many lamps he has and what type they are. Bob fills out the FSG Lighting Snapshot Sheet and is feeling pretty good about his lighting upgrade project.

[illegible]

STEP 2

ORDER YOUR NEW LIGHTING

Once you've identified what type of lighting you have in your space, you can start to look for replacement LED fixtures or lamps to upgrade your lighting to!

This is the part that can get really complicated quickly, but don't worry. If you know what you have, and you know what you need the lighting to do, finding an LED lamp or fixture to upgrade to is very doable!

As a note, LED Lighting has more variables of brightness, color temperature, and dimming capability than traditional fluorescent lighting. Don't be afraid to be creative, or ask for help when choosing LED lighting! Remember, the best lighting is the lighting that makes your staff more productive and your patients more comfortable—you're not stuck with just one or two variations like you were with fluorescent. You can even buy LED fixtures that go from a cooler color to a warmer color as the day progresses—adding an extra level of comfort for your staff and patients.

Let's take a look at how Sally and Bob are ordering lighting for their projects.





Position: Office Manager of a large medical practice

Task: Lower the operational costs of her practice by 15%

Status: Working with FSG and ready to get started with her upgrade



Sally's project is in full swing. FSG has completed the audit and the time has come to make some decisions about exactly what type of fixtures she wants to replace her outdated fixtures with. Considering the color temperature, style, and use for each fixture in each room, FSG builds a project order for Sally to look it over.

FSG then talks to Sally about choices her practice has available to pay for the project. Sally's practice could make a capital-funded project or, if they prefer, FSG can help the practice secure funding against the savings generated by the new lighting and the practice would pay a monthly payment out of their electric bill savings through the operations budget, thus saving the capital cash for other projects, equipment, or business expenses.

Sally chooses to pay for the interior lighting project upfront but decides the Lighting as A Service(LaaS) funding model might work well for the parking lot lighting upgrade project they've been thinking about for a few years.



Position: Pediatrician in a private practice

Task: Improve the look of his office, save money and time

Status: Lighting Snapshot is complete and he's ready to order



Once Bob has his Lighting Snapshot filled out, he sits down at his desk and logs into the FSG HealthTrust Online Lighting Store. This online store is specifically designed for members of Healthtrust and has what he needs available at pre-negotiated low prices. Finding the lamps he is looking for quickly, Bob sees that they are in stock and ready for shipment. He fills his online cart with his new lamps and checks out.

Bob decides to pay with his credit card and asks that the order be delivered on Monday so he can start changing his lamps Monday night after work.

STEP 3

INSTALLING YOUR NEW LIGHTING

Once your new lighting arrives it's time to transform your space! If your new lighting involves a small space and just simply installing new LED lamps, then that means installation could be as simple as coming up to the office on a Saturday for a few hours.

However, if you're project involves a lot of lamps over a large area, or involves changing out fixtures you might want to have or may be required to have an installation crew or electricians install your new lighting for you.

Some considerations to keep in mind when planning your installation include:

- If necessary, when can power be turned off for extended periods of time?
- Have you taken all necessary safety precautions?
- Can the project be done in phases around patient care and facility operations?
- Do you have plan or does the installer have a plan for keeping the space clean while working?

Let's take a look at how Sally and Bob are installing their projects.





Position: Office Manager of a large medical practice

Task: Lower the operational costs of her practice by 15%

Status: Coordinating Schedules



Once Sally has signed off on the project, confirmed payment, and scheduled the work, there's really nothing left for Sally to do but sit back and wait for FSG electricians to show up with her new lighting. Two weeks later, an FSG project manager calls Sally to tell her they are ready to schedule the install and asks Sally how and when the medical practice would like them to work. Sally decides that evenings would be best, one area at a time.

The FSG project manager schedules the crews to work overnight and to have each area completed and cleaned by 7:00 the next morning—one hour before the medical practice opens. Sally is thrilled with the plan, but even more thrilled three weeks later when the project is complete, and the savings start showing up on Sally's electrical bill!

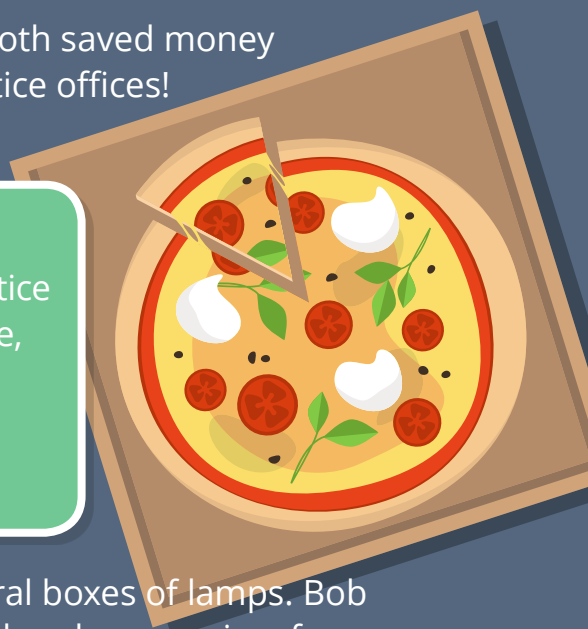
Sally is praised by her managers for finding a solution that both saved money and improved the overall look and feel of the medical practice offices!



Position: Pediatrician in a private practice

Task: Improve the look of his office, save money and time

Status: Ready to install



On Monday morning, UPS arrives at Bob's office with several boxes of lamps. Bob is so excited to get the project done, he decides to go ahead and screw in a few of the recessed lamps during the lunch break hour. He is thrilled with the results and as soon as his office closes at 5, he goes to work with his ladder changing all the other lamps out. The staff is excited too, so much so, that they decide to stay and help and order pizza for everyone!

The lamp changing pizza party only lasts about an hour, but the savings and better lighting will last for years! Bob is pleased with his decision to upgrade the lamps in his office, but not nearly as pleased as he is the next month when he gets his first electric bill with LED lighting installed!

To get even more savings out of your LED lighting

You could consider making some other upgrades such as:

- Swaping traditional light switches for motion-sensing light switches
- Adding dimmers in rooms with windows so you don't use as much electricity when there is daylight available
- Dimming the light fixtures down to 75%! LED is brighter than fluorescent—so you don't necessarily need to run them at 100%!
- Find about rebates and special utility programs in your area. FSG has an entire team dedicated to helping you utilize utility programs that target energy-saving lighting



We'd love to talk to you more about your lighting needs

FSG has been selling and installing commercial lighting products for more than 35 years. Our number one focus has always been on bringing the right solutions to customers in a way that makes sense for the customer! This guide is meant to be a resource to help you determine if upgrading your lighting is the right solution for you!

There are a number of variables to consider when actually building a lighting upgrade project and this guide has only begun to scratch the surface, however, we hope that you have found it helpful.



LIGHTING SNAPSHOT WORKSHEET

LOCATION

[illegible]

To calculate the kWh your lamps use per month, multiply the number of lamps by the wattage and then divide by 1000. **(NUMBER X HOURS)/1000**

TOTAL kWh

7

LOCATION SHEET

If your location is smaller and does not have a large variety of lights, this is the only worksheet that you will need. Simply list each lamp's information along with the approximate hours they are used each month. We will use this to calculate how much energy your lighting consumes and how much energy your new LED lighting will save you.

LIGHTING SNAPSHOT WORKSHEET

LAMP INVENTORY

REFERENCE	TYPE	BASE	WATTAGE	SHAPE & SIZE	COLOR TEMP	LOCATION(S)	ENVIRONMENT	LOOK	TOTAL COUNT
							☐ INDOOR ☐ OUTDOOR	☐ CLEAR ☐ FROSTED ☐ COLOR	
							☐ INDOOR ☐ OUTDOOR	☐ CLEAR ☐ FROSTED ☐ COLOR	
							☐ INDOOR ☐ OUTDOOR	☐ CLEAR ☐ FROSTED ☐ COLOR	
							☐ INDOOR ☐ OUTDOOR	☐ CLEAR ☐ FROSTED ☐ COLOR	
							☐ INDOOR ☐ OUTDOOR	☐ CLEAR ☐ FROSTED ☐ COLOR	
							☐ INDOOR ☐ OUTDOOR	☐ CLEAR ☐ FROSTED ☐ COLOR	
							☐ INDOOR ☐ OUTDOOR	☐ CLEAR ☐ FROSTED ☐ COLOR	
							☐ INDOOR ☐ OUTDOOR	☐ CLEAR ☐ FROSTED ☐ COLOR	
							☐ INDOOR ☐ OUTDOOR	☐ CLEAR ☐ FROSTED ☐ COLOR	
							☐ INDOOR ☐ OUTDOOR	☐ CLEAR ☐ FROSTED ☐ COLOR	
							☐ INDOOR ☐ OUTDOOR	☐ CLEAR ☐ FROSTED ☐ COLOR	
							☐ INDOOR ☐ OUTDOOR	☐ CLEAR ☐ FROSTED ☐ COLOR	

LAMP INVENTORY

If you have a larger facility or if you have a wide variety of lamps and fixtures, use this worksheet along with Room Count worksheet to inventory your facility. Give each lamp type a reference number that you will use in the Room Count to designate what type of lights are in each room. This saves you time by only having to write information about your lamps once and then refer back to it when you count.

LIGHTING SNAPSHOT WORKSHEET

ROOM COUNT

[illegible]

ROOM COUNT

Use the Lamp Inventory to reference what types of lights are in each room, how many there are and how many hours per month, on average, they are used. Not only will this information be critical to decisions about what type of lights you will need, but it will also be a valuable help when we plan your installation.

LIGHTING SNAPSHOT WORKSHEET

LOCATION

LAMP TYPE/BASE/COLOR TEMP	# OF LAMPS	WATTS	HOURS/ MONTH	ENVIRONMENT		LOOK			CALCULATED kWh/MONTH
				☐ INDOOR	☐ OUTDOOR	☐ CLEAR	☐ FROSTED	☐ COLOR	
				☐ INDOOR	☐ OUTDOOR	☐ CLEAR	☐ FROSTED	☐ COLOR	
				☐ INDOOR	☐ OUTDOOR	☐ CLEAR	☐ FROSTED	☐ COLOR	
				☐ INDOOR	☐ OUTDOOR	☐ CLEAR	☐ FROSTED	☐ COLOR	
				☐ INDOOR	☐ OUTDOOR	☐ CLEAR	☐ FROSTED	☐ COLOR	
				☐ INDOOR	☐ OUTDOOR	☐ CLEAR	☐ FROSTED	☐ COLOR	
				☐ INDOOR	☐ OUTDOOR	☐ CLEAR	☐ FROSTED	☐ COLOR	
				☐ INDOOR	☐ OUTDOOR	☐ CLEAR	☐ FROSTED	☐ COLOR	
				☐ INDOOR	☐ OUTDOOR	☐ CLEAR	☐ FROSTED	☐ COLOR	
				☐ INDOOR	☐ OUTDOOR	☐ CLEAR	☐ FROSTED	☐ COLOR	

To calculate the kWh your lamps use per month, multiply the number of lamps by the wattage and then divide by 1000. (NUMBER X HOURS)/1000

TOTAL kWh

LIGHTING SNAPSHOT WORKSHEET

LAMP INVENTORY

REFERENCE	TYPE	BASE	WATTAGE	SHAPE & SIZE	COLOR		LOCATION(S)	ENVIRONMENT		LOOK			TOTAL COUNT
					TEMP								
								☐ INDOOR	☐ OUTDOOR	☐ CLEAR	☐ FROSTED	☐ COLOR	
								☐ INDOOR	☐ OUTDOOR	☐ CLEAR	☐ FROSTED	☐ COLOR	
								☐ INDOOR	☐ OUTDOOR	☐ CLEAR	☐ FROSTED	☐ COLOR	
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								☐ INDOOR	☐ OUTDOOR	☐ CLEAR	☐ FROSTED	☐ COLOR	
								☐ INDOOR	☐ OUTDOOR	☐ CLEAR	☐ FROSTED	☐ COLOR	
								☐ INDOOR	☐ OUTDOOR	☐ CLEAR	☐ FROSTED	☐ COLOR	
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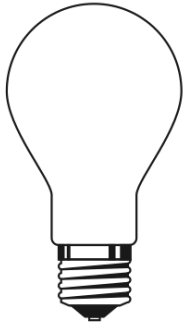
LIGHTING SNAPSHOT WORKSHEET

ROOM COUNT

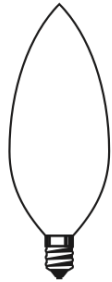
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BULB SIZE & SHAPE

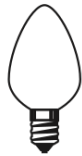
INCANDESCENT SHAPE GUIDE



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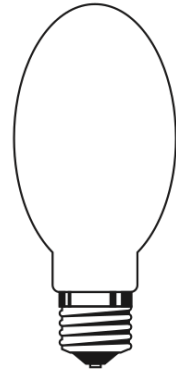
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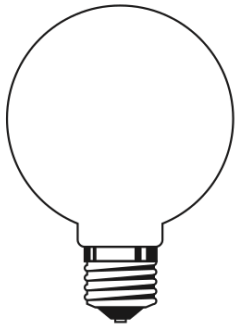
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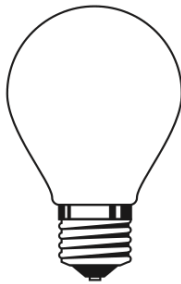
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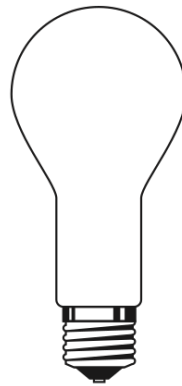
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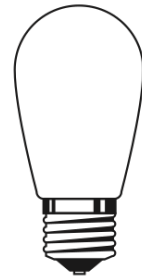
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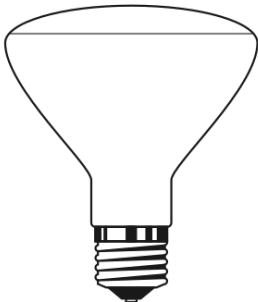
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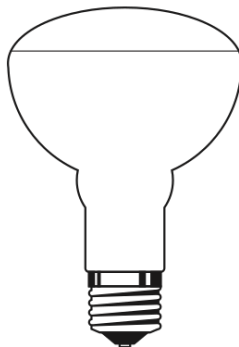
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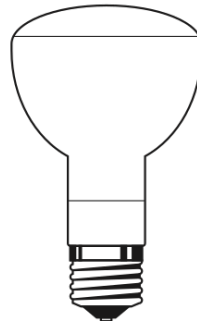
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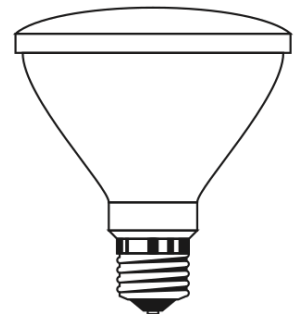
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BR



ER



PAR

BULB SIZE & SHAPE

REFERENCE CHART

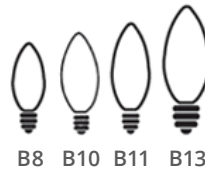
A LAMPS



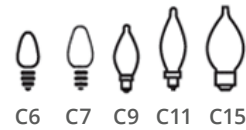
P LAMPS



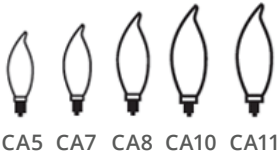
B LAMPS



C LAMPS



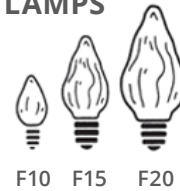
C LAMPS



RP & S LAMPS



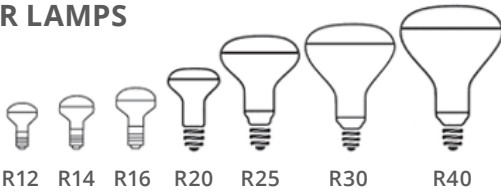
F LAMPS



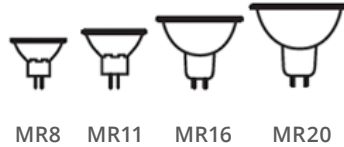
PRISM



R LAMPS



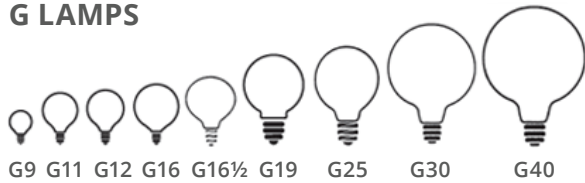
MR LAMPS



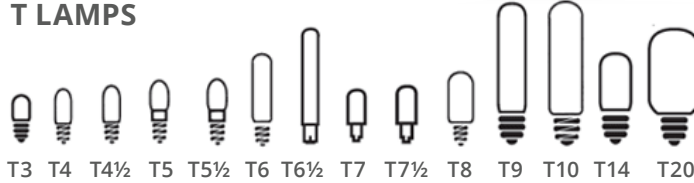
BR LAMPS



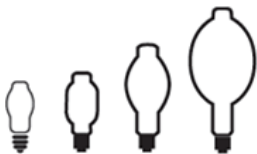
G LAMPS



T LAMPS



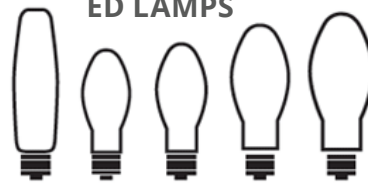
BT LAMPS



ET LAMPS



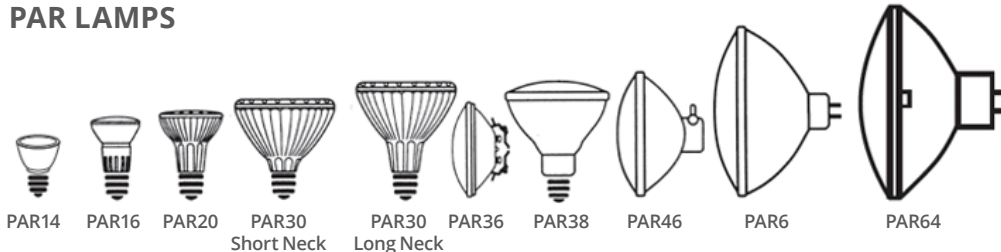
ED LAMPS



AR LAMPS



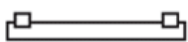
PAR LAMPS



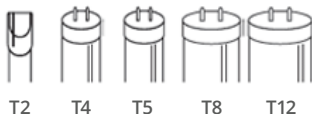
SPECIALTY



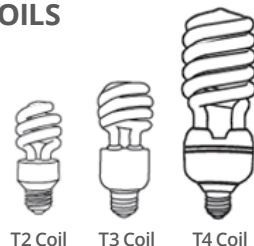
LINESTRA



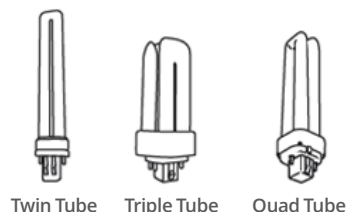
LINEAR FLUORESCENTS



COMPACT FLOURESCENT COILS



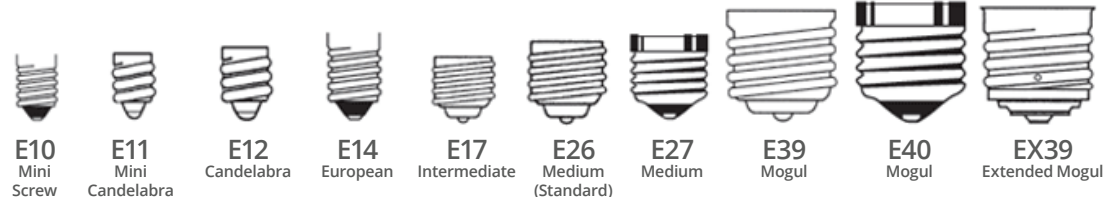
COMPACT FLOURESCENT PLUG IN LAMPS



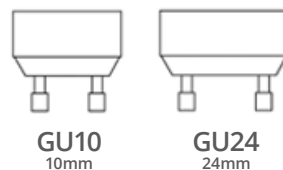
BULB BASE

REFERENCE CHART

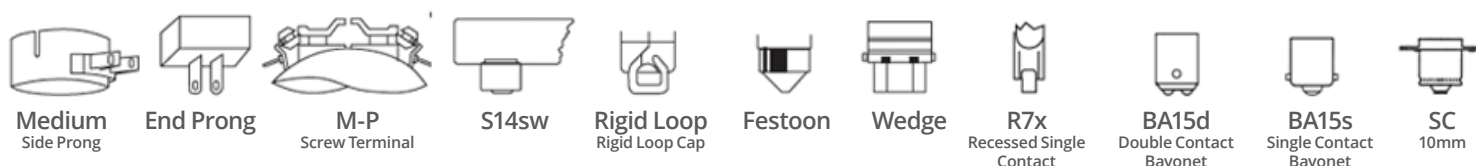
SCREW



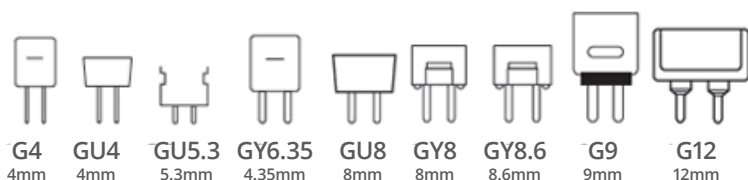
TWIST & LOCK



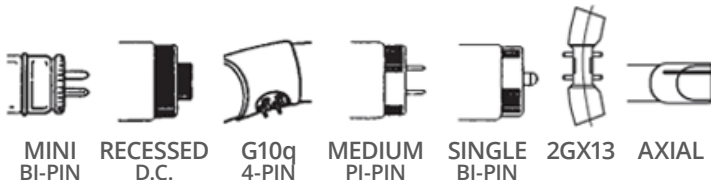
SPECIALTY



BI PIN



FLUORESCENT PIN



COMPACT FLOURESCENT PLUG IN

