



Group Relamping For Cost Savings and Better Lighting Quality

Vocabulary

- **Lamp:** The standard term that lighting industry uses for light bulb. Lamp is another word for light bulb.
- **Relamping:** The act of replacing bulbs when they burn out.
- **Group relamping:** Strategic maintenance practice where large numbers of bulbs are changed out on a predetermined schedule.
- **Fixture:** The enclosure that contains the lamp(s); includes the reflector, ballasts, clear cover, etc.

Issue

Large facilities with many overhead lights constantly need to replace burned out lamps. Changing lamps takes time. One or two workers using a lift may spend a great deal of time changing lamps in high overhead fixtures. Small businesses may need to rent lift equipment to replace burned out lamps. Ignoring burned out lamps degrades the quality of a facility's lighting and therefore impacts the work environment. Often, routine cleaning of lamps and fixtures is neglected. This compromises light quality and quantity.

Solution

Consider group relamping, a maintenance practice where large numbers of lamps are replaced at the same time. This practice can be used to efficiently maintain lighting in arenas, warehouses, production facilities, aircraft hangers, schools, office buildings, places of worship, and other large businesses. Group relamping is effective when lamps are the same kind (usually fluorescent). It is also useful when switching out all of one type of lamp to another (retrofit).

Lamp is another word for light bulb.

Group relamping is effective for large amounts of lighting.



Photo illustrates a mix of operating and burned out lamps in an arena.

Save time and money with group relamping.

The main advantages of group relamping are:

- Fewer numbers of burned out lamps
- Lower labor costs per lamp
- Increased worker safety with less time on a ladder or lift
- Easier and less disruptive lighting maintenance
- Lower costs: Lamps are bought in bulk
- Easier lamp disposal planning

Economics

All lamps have a specified “average life” in hours. This is the point where 50% of the lamps have burned out. Lamps do not burn out at a steady rate over their lifetime – they tend to start to fail at once. For example, if 70% of the “average life” is chosen as a point in time, almost all of the lamps will still be working but getting near the time where many will start to fail.

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Here’s how group relamping can save money...

Example: An office operates lamps for 3,500 hours per year. There are 400 fixtures with four F32T8 lamps per fixture (1,600 lamps total). Average lamp lifespan is seven years.

$$\frac{25,000 \text{ hours}}{3,500 \text{ hours used per year}} = 7 \text{ years}$$

After a few years, lamps would begin to burn out and need replacing:

$$\frac{1,600 \text{ lamps}}{7 \text{ years}} = 229 \text{ average annual spot relampings}$$

If we group relamp at 70% of average life, we replace more lamps at once but experience minimal burnouts and lower labor costs. Why? The lamps are replaced all at once before they start to fail.

$$70\% \times 7 \text{ years} = 4.9 \text{ years (relamp all 1,600 lamps every 5 years)}$$

TABLE: Side-by-side comparison of spot versus group relamping

Spot relamping		Group relamping	
Hourly wage \$20	Time per lamp (access, replace, clean) 25 minutes	Hourly wage \$20	Time per lamp (access, replace, clean) 6.2 minutes
Lamp costs 229 lamps per year x \$3 per lamp = \$687 per year	Labor costs 229 lamps per year x \$8.33 per lamp = \$1,910 per year	Lamp costs 1,600 lamps every 5 years x \$3 per lamp = \$4,800 every 5 years	Labor costs 1,600 lamps every 5 years x \$2 per lamp = \$3,200 every 5 years
Total costs Spot relamping costs (lamp + labor) = \$2,597 per year This is equal to \$12,985 every 5 years		Total costs Group relamping costs (lamp + labor) = \$1,600 per year This is equal to \$8,000 every 5 years	

Cost savings of group vs. spot relamping over a 5 year period: \$4,985

Note: Savings may be reduced if there is a cost associated with disposal and recycling.