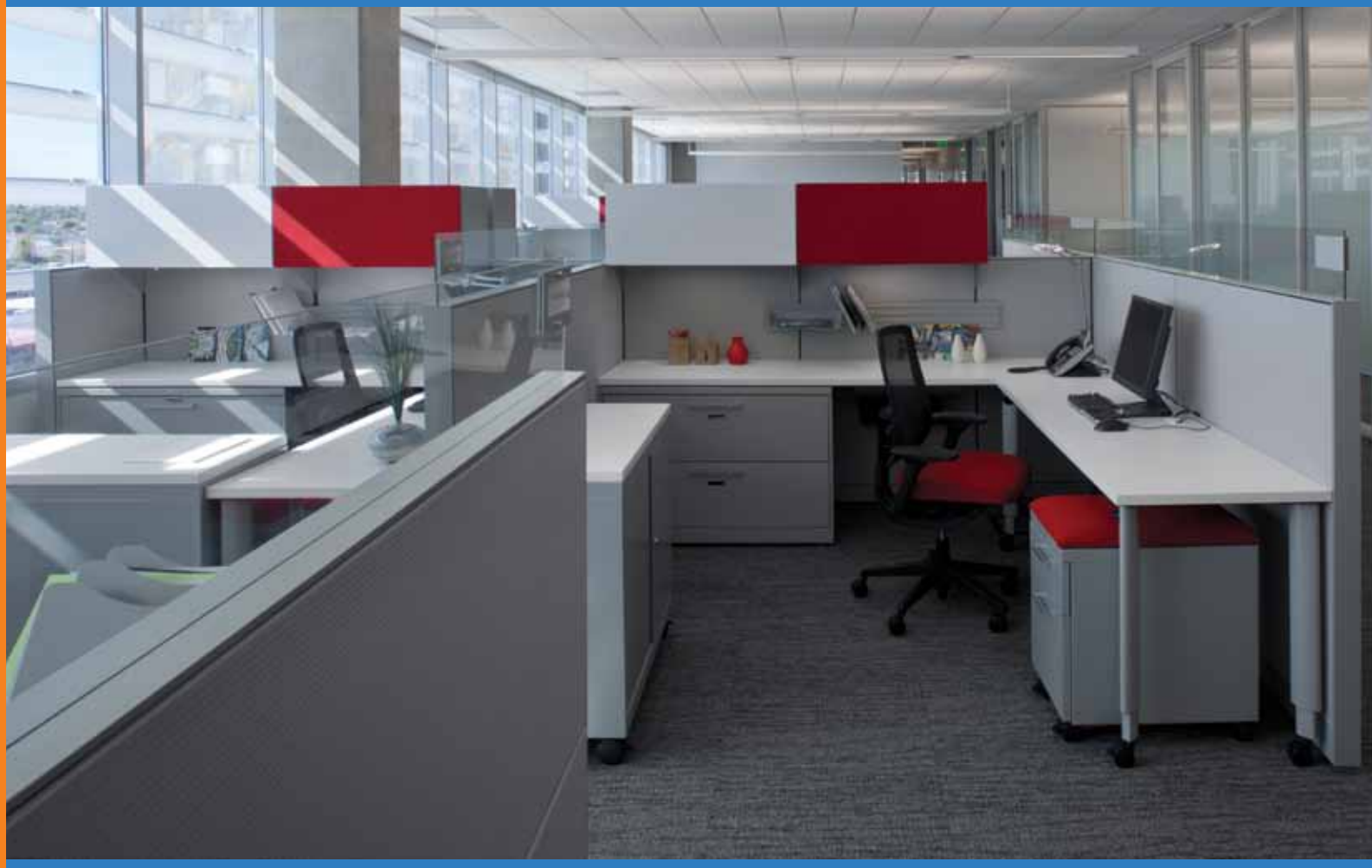
Illuminating ENGINEERING SOCIETY

ANSI/IES RP-1-12

American National Standard Practice for Office Lighting



Approved American National Standard

ANSI

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Recommended Practice for Office Lighting

Publication of this Design Guide
has been approved by IES.
Suggestions for revisions
should be directed to IES.

Prepared by:
The Office Lighting Committee of the
Illuminating Engineering Society of North America

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1.0 INTRODUCTION

For many people, the office is the environment where they spend the majority of their waking adult lives. The expectation is that the time spent in the office will be useful and productive, and that the physical environment will be healthy.

The design of the office greatly influences how well the space meets the needs of the workers and their organization. Lighting is a critical element of the design that may enhance or degrade the work experience and affect the well-being of the workers. Beyond supporting worker performance, lighting may also affect the bottom line of the organization by making the best use possible of materials and electricity.

Describing and defining the office can be a challenge. There is no standard for how workers are organized and divided into groups. There are common tasks shared by many employees and some tasks that are performed by a limited few. Even the common tasks evolve and change over time. Earlier generations have worked mostly on paper, reading and writing with pens and pencils. Often this meant much time scrutinizing low contrast, poor quality visual information. More recently, self-luminous computer-based tasks entered the work place, first as a specialized task that required unique consideration and accommodations. Over time, and with considerable evolution of the hardware and much greater user familiarity, computer-based tasks have become the ubiquitous, primary basis of office work.

Just as the tasks have changed, so have office layouts and design expectations. Fewer and fewer companies isolate their workers in individual small spaces that require considerable work and investment to change and reconfigure. In parallel with the change to office layouts, technology has made it possible for workers to be flexible in where and when they work. An office work area may still be a wooden desk enclosed by four walls, but it may also be a flat surface supported by demountable partitions, or even a window table in the corner of the company cafeteria or a coffee bar.

People can be extremely inventive and flexible in finding places to work and adapting both their habits and their environment to suit the situation and their needs. Some will demand daylight, for views and connection to the outdoors, and will gladly suffer the glare of direct sunlight. Some will demand near black-out conditions to maximize the sharpness and clarity of images on their graphic displays.

Energy codes and similar programs to maximize energy efficiency have an increasing influence on office lighting design, prescribing ever lower allowances for lighting system power draw. The result is that greater attention may be required to determine how and where electric lighting is applied to maximize its effectiveness and preserve lighting quality. Greater environmental awareness heightens the desire to maximize the benefits, both psychological and economical, of daylight integration with architectural design and electric lighting systems.

New technology has changed lighting with the introduction of new light sources and control techniques. Ceramic metal halide lamps and LEDs are viable alternatives to incandescent lamps. Fluorescent lamps offer improved color appearance and greater luminous efficiency. Ballast designs for fluorescent lamps allow better control for both switching and dimming applications. Control systems allow for integration of occupancy sensors, photosensors for daylight harvesting, personal control, and demand response/load shedding, along with preset scene selections to automate and simplify the user interface with the lighting system. New manufacturing processes have eliminated or greatly reduced the use of toxic materials. Recycling efforts have increased, affecting both the material content of lighting products and their eventual reuse.

This recommended practice has been substantially reorganized and reworked from earlier editions to address these issues in the changing office environment. By maintaining a focus on lighting quality and human visual performance, and using the available technology, lighting practitioners can light the workplace more effectively. Their careful attention to the details, and willingness to work with and educate other members of the design team (architects, engineers, interior designers, owners and users), will ensure the best possible use of available resources in design solutions that are cost effective, environmentally sustainable, and that yield higher workplace satisfaction and consequently enhanced organizational productivity.

2.0 SUMMARY OF RECOMMENDATIONS

The following is a summary of the definitive recommendations made in this recommended practice. The summary is provided as a convenient reference, but it is not a substitute for reading the complete recommended practice and careful consideration of all factors relevant to a specific lighting situation.