TASK LIGHTING

How is lighting ergonomic?

Notice the position you are standing or sitting in as you read this. Did you move to get better lighting? Did you position your body in a way to help improve the visual contrast of the text, reduce glare or avoid a shadow? That very movement is the essence of ergonomics.

How can lighting reduce operating costs?

According to the US Department of Energy, 51% of the energy used in commercial buildings is consumed by lighting systems. However, many existing systems have much higher than recommended illumination levels from overhead lighting.

In instances where too much illumination is provided through overhead lighting, companies can reduce their power usage and associated costs by simply reducing overhead light levels and applying proper lighting for specific tasks.

How does proper lighting increase performance?

According to The American Optometric Association, excessive overhead or ambient lighting levels reduce the apparent visual contrast on computer screens due to glare.

> "Contrast (which is reduced by glare) plays an important element in visibility. Low contrast objects are difficult to see, regardless of their size. Increasing task contrast is an important means of increasing overall performance."

The Bottom Line: Optimal task illumination levels through the use of task lighting will help improve user ergonomics, reduce operating cost and increase worker performance.

Achieving proper light levels

Light levels are most commonly expressed "Foot Candles" (fc). The Illuminating Engineering Society (IES) Lighting Handbook provides detailed light level recommendations for thousands of specific applications. General rules of thumb are:

Visual Tasks of medium contrast or small size require 50–100 fc*
Visual Tasks of low contrast or very small size require 100–200 fc*
Users over the age of 65 should be provided with 2 times the lux or foot candle light levels.*

* IES Lighting Handbook 10th Edition

What to look for in the light produced from a task light

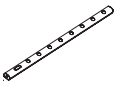
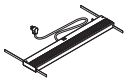
Supports IES foot candle recommendation for the task
Understanding the user and the task at hand will dictate how much light is required. Photometric maps illustrate the footcandle power over a specific distance and area.

High lumens per watt
The higher the lm/W the more efficient the light.

White light color
"White" light is typically perceived between 3200–4100 K. Light less than 3200 K begins to appear orange or red, while light above 4100 K begins to appear blue.

Color Rendering Index (CRI) above 80
CRI determines how "true" colors appear. CRI below 80 will begin to make objects appear noticeable different from natural sunlight.

PRODUCT COMPARISON: UNDER-CABINET TASK LIGHTING

	Ciglio			Verano			Dazz—SL			
										
FIXTURE/MODEL SIZE	20"	27"	35"	24"	36"	48"	24"	36"	48"	60"
LIST PRICE	$355/$395	$475/$515	$585/$625	$250	$350	$450	$110	$114	$125	$144
LIGHT OUTPUT										
Foot Candle Power (@ 18")	100 fc	132 fc	136 fc	109 fc	148 fc	155 fc	per bulb	per bulb	per bulb	per bulb
Peak Lumen Output	652 lm	1032 lm	1431 lm	325 lm	513 lm	677 lm	~540 lm	~1256 lm	~1953 lm	~2697 lm
Color Temperature	3500 K	3500 K	3500 K	3300 K	3300 K	3300 K	4200 K	4100 K	4100 K	4100 K
CRI	83	83	86	97	97	97	85	85	85	85
Dimming	●	●	●							
ENERGY EFFICIENCY										
System Power Consumption	9.5 W	14 W	20.9 W	12.3 W	15.6 W	22.3 W	12 W	16.2 W	21 W	28 W
Lumens per Watt	68 lm/W	73 lm/W	68 lm/W	26 lm/W	32 lm/W	30 lm/W	45 lm/W	89 lm/W	93 lm/W	96 lm/W
PIR Occupancy Sensor	●	●	●							
L70 Estimated Life	90,000+ hr.	90,000+ hr.	90,000+ hr.	50,000+ hr.	50,000+ hr.	50,000+ hr.	50,000+ hr.	50,000+ hr.	50,000+ hr.	50,000+ hr.
DAISY CHAIN SYSTEM OPTIONS										
Max # of Same Size Fixtures in Daisy Chain	4	3	2	4	3	2	5	3	2	2
Jumper Cable Options	5	5	5	2	2	2	1	1	1	1
Supports Mixed Size Daisy Chain Configurations	●	●	●	●	●	●	●	●	●	●
FIXTURE HOUSING										
Control/ Switch Type	Touch strip	Touch strip	Touch strip	Push button	Push button	Push button	Rocker switch	Rocker switch	Rocker switch	Rocker switch
Number of LED's In Fixture	42	63	84	8	12	16				
Metal Installation Mounts	Magnetic	Magnetic	Magnetic	Magnetic	Magnetic	Magnetic	Slide bars	Slide bars	Slide bars	Slide bars
Wood Installation Mounts	Screw	Screw	Screw	Screw	Screw	Screw	Screw (not included)	Screw (not included)	Screw (not included)	Screw (not included)
Rotation Mount				●	●	●				
Recommended Cabinet Installation Size	24"	36"	48"	24"	36"	48"	24"	36"	48"	60"
Colors	Sterling Silver	Sterling Silver	Sterling Silver	Sterling Silver, Carbon Black	Sterling Silver, Carbon Black	Sterling Silver, Carbon Black	Black	Black	Black	Black
WARRANTY										
Fixture	5 years	5 years	5 years	5 years	5 years	5 years	5 years	5 years	5 years	5 years
Transformer or Ballast	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year	1 year

UNDER-CABINET TASK LIGHTING

Under-cabinet task lights provide a wide distribution of light in areas that need additional illumination due to shadowing from overhead or side light sources.

What to Look For When Shopping For an *Under-cabinet Task Light Fixture*

Mounting requirements:

Size/dimensional constraints: Typical cabinet construction reduces the usable/mountable under-cabinet area by 1–2 inches. When considering fixture lengths be sure to consider all power and jumper cable requirements.

Cabinet height: The further the distance from the work surface, the greater the light output will be required to deliver proper foot-candle power to the surface.

Construction materials: Cabinets constructed from metal will require different mounting hardware from wood cabinet construction.

Power requirements:

Outlet powered vs. hardwired: Outlet powered units bring on/off power & dimming controls to the fixture whereas hardwired units will typically be controlled by a wall switch. (Workrite does not offer hardwired lighting products.)

Outlet availability: The location of your power outlet will determine if each unit may be individually powered and controlled or if "Daisy Chain" power is required.

Daisy chain installations: (if applicable)

Fixtures per chain: Identify the number of users or length of area to be illuminated. The maximum distance of a Daisy Chain is determined by the total power consumption of each fixture. Each series will specify the maximum number of fixtures per chain.

Jumper cables: Powering one light from another requires the use of a jumper cable. Determine the distance between lights including all bends and routing requirements to determine the jumper cable length required.

User controls:

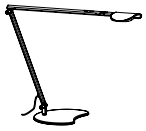
Series vs. individual controls: Determine if each user/light needs independent controls or if the chain needs to be controlled by a single source.

Dimming controls: Enables users to lower light levels to help reduce glare caused by ambient light. Dimmable lights can also reduce the amount of energy consumed from the peak rating when used at less than 100% output. Dimming can be continuous or involve step controls.

Occupancy sensors: Detect the presence or absence of a user and turn the light on or off accordingly. Be sure to note the range and field of view when selecting models with this feature to ensure they are reaching the desired sensing field.

Note: All Workrite fixtures are ETL or UL/ cUL listed and meet the requirements of the U.S. electric and building codes. Local building codes may vary and permits may be required for certain applications. Check with your local building or electrical inspector, or consult us if you have any questions regarding a specific application.

PRODUCT COMPARISON: DESKTOP TASK LIGHTING

	Astra	Fundamentals
		
FIXTURE/MODEL SIZE	Astra Dual Arm	Fundamentals Desk Light
LIST PRICE	$345 - $420	$229
LIGHT OUTPUT		
Foot Candle Power (@ 15")	132 fc	78 fc
Peak Lumen Output	275 lm	184 lm
Color Temperature	3500 K	3200 K
CRI	92	81
Dimming	Continuous down to 5%	Continuous down to 15%
ENERGY EFFICIENCY		
System Power Consumption	6.7 W	3.4 W
Lumens per Watt	41 lm/W	54 lm/W
PIR Occupancy Sensor Option	●	
L70 Estimated Life	50,000+ hours	40,000+ hours
FIXTURE HOUSING		
Reach	34.5"	14.5"
Shade Rotation	360°	360°
Shade Tilt/Pivot	180°	
User Controls/ Switch Type	Push button	Touch button
Number of LED's In Fixture	6	21
Desk Base Option	●	●
Tool Rail Mount Option	●	
C-Clamp Option	●	
Two Piece Clamp Option	●	
Slatwall Option	●	
Available Fixture Colors	Sterling Silver & Carbon Black	Sterling Silver
WARRANTY		
Fixture	5 years	5 years
Transformer	1 year	1 year

DESKTOP TASK LIGHTING

Desktop task lights add more than just a design element to an office. Using proper illumination for tasks can prevent glare, eliminate shadows and help improve performance with work that involves great levels of detail and contrast.

What to look for when shopping for a *Desktop Task Light Fixture*

Arm reach and joints: Ensure that the fixture can reach the desired task location without moving the base/mount. Fixture joints should set and hold their position without sagging or creeping back to a higher position.

Lamp head or luminaire: Should rotate to wash the task surface with light, whether in a vertical or horizontal orientation.

Dimming: Enables users to adjust light intensity and helps reduce glare caused by surrounding ambient light. Dimmable lights may also reduce the amount of energy consumed from the peak rating when used at less than 100% output. Dimming can be continuous or involve step controls.

Occupancy sensors: Detect the presence or absence of a user to turn the light on or off accordingly. Be sure to note the detection range and field of view when selecting models with this feature to ensure they are reaching the desired sensing field.

Stability: Ensure the light does not tip or lean when stretched to its maximum range of motion or "reach".

Ergonomic desktop lighting tips

- Position your desk lamp so that its light "washes" across your task area.
- Place the lamp on the opposite side from your writing hand to minimize shadows on the work surface.
- Minimize any direct glare by angling the light shade away from users eyes.

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