Color Tunability Technology in one go 2600K up to 6000K

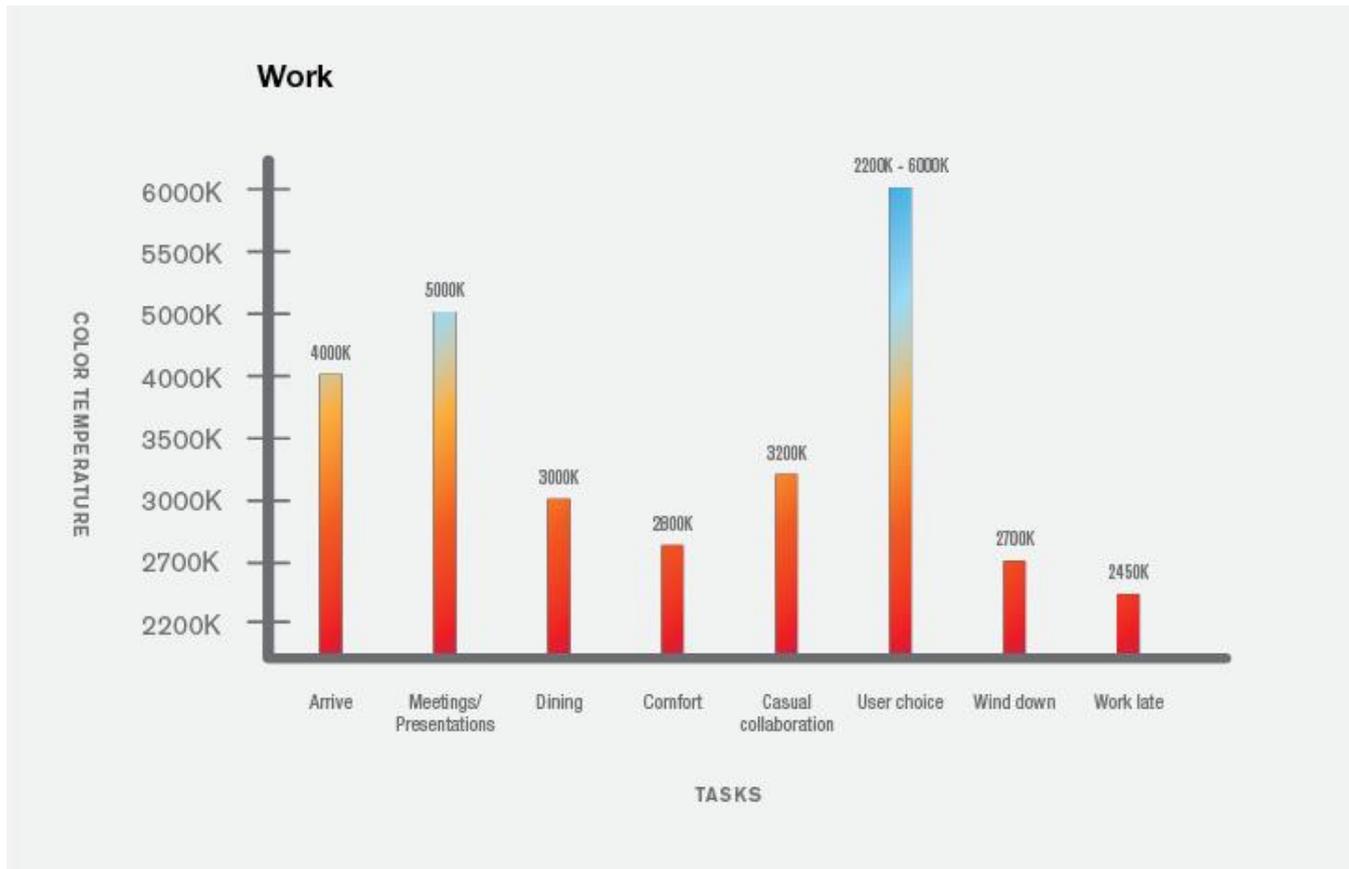# Some true innovation and science based approach

Long days spent beneath cool electric light and a pervasive addiction to smart devices that often lasts into late nights is throwing off rhythms, disrupting sleep/wake cycles and preventing people from performing at their best. Now more than ever, people need greater awareness about — and control over — the lighting they take for granted. Driven to find a solution to these issues, we have developed CCT Tunable LED Lamps,proprietary technology that shatters the boundaries of LED potential and is the first architectural LED downlighting fixture offering, independent control of both color temperature and intensity. We bring personalized lighting to reality, with users able to tune white light over the broadest possible color temperature range — from candlelight-like 2600K to 5700K that's comparable to daylight, and control intensity from 100% down to 0.1% using either wall dimmers or a simple remote control.

CCT Tunability represents our unending quest to be at the forefront of LED illumination innovation," As As LEDs have risen in prominence, designers and consumers have been challenged to find precise optics and high performance LED fixtures. CCT Tunability boasts unprecedented color versatility, beamspread options, and output, while granting people the control they desire over the lighting in their personal spaces – allowing them to adapt it to their personal needs. With research linking light's spectrum to health outcomes, we've strived to harness the functionality and performance of LEDs to deliver every nuance of natural daylight knowing it has the potential to optimize health and even transform the way people perform, learn, and live. CCT Tunability mimics natural daylight color temperatures and intensities It provides seamless lighting solutions for every aspect of life and for every type of interior application — corporate, residential, hospitality, healthcare, education and retail.

Caption: CCT Tunability *Select mimics natural daylight color temperatures and intensities*
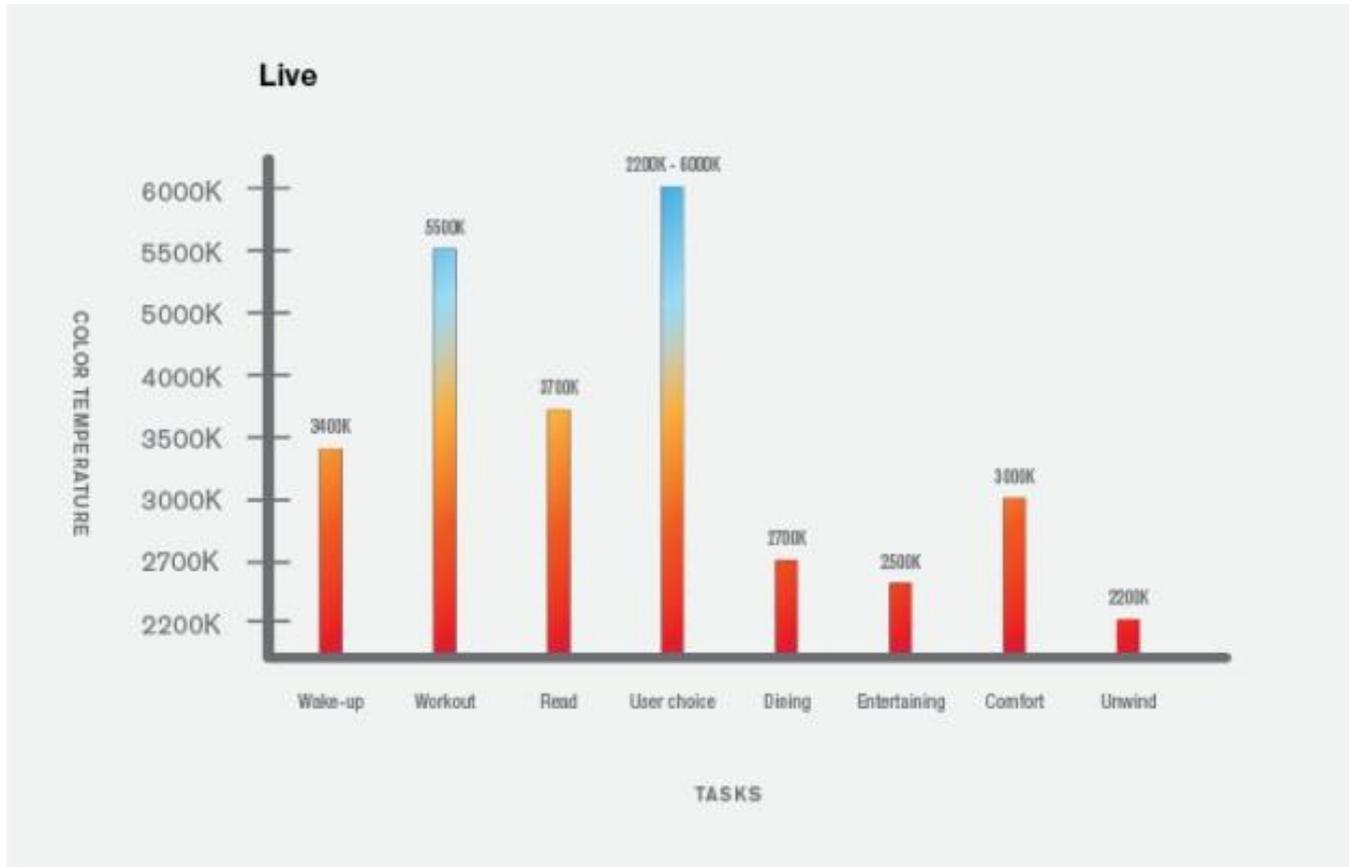
CORPORATE

Work

COLOR TEMPERATURE

Task	Color Temperature
Arrive	4000K
Meetings/Presentations	5000K
Dining	3000K
Comfort	2800K
Casual collaboration	3200K
User choice	2200K - 6000K
Wind down	2700K
Work late	2450K

TASKS

Architects and interior designers responsible for today's corporate workplaces are constantly challenged to determine what will be the most appropriate lighting for the varied and ever-changing tasks of workers. With Color Select as an option, the lighting can be customized for each employee and task.

Lighting research reveals that anyone located more than 10 feet from a window will typically not receive the sun's circadian benefits from natural daylight, and many office interiors have windowless workspaces, so people are deprived of this . "Disruption to circadian rhythms shortens sleep/wake cycles and poses serious health risks due to suppression of melatonin, our sleep hormone. So, with the installation of CCT Tunable LED systems, office lighting can be tuned throughout the day to simulate the light-dark cycle helping to reinforce circadian rhythms and, in turn, increase productivity and general well-being."
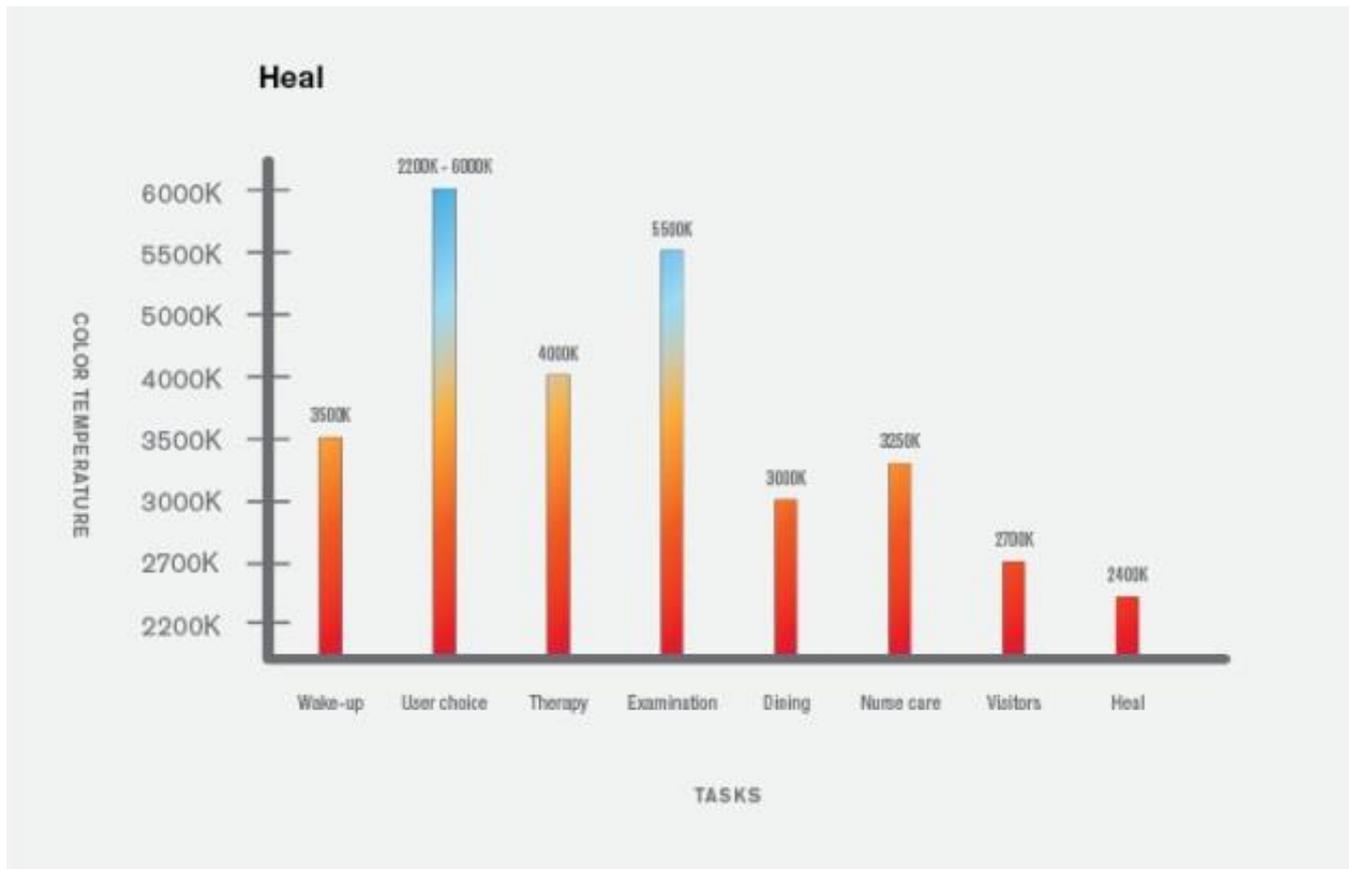
RESIDENTIAL AND HOSPITALITY

Tunability presents a new opportunity for designers to effortlessly match light with different décor styles and moods. For instance, it allows the white light in an all-white surface treatment application to be precisely selected to more definitively amplify minimalist architecture, or the color temperature can be tuned down to emphasize the cozy ambiance of a rustic kitchen. With Tunability,lighting can also adapt to the changes to finish selections interior designers may make in the midst of the design process without investing in new or added fixtures.

Designers will also appreciate how CCT Tunabilitycan recreate the fluctuations of natural daylight in hotels and homes to enhance activities such as waking, exercising, dining, and lounging. By setting Tunability systems to warm "sunset" color temperatures and lower light intensities, a spa environment can fully promote relaxation and enhance skin tones, while in a gym, setting Color Select to a cooler temperature and higher light intensity can serve to energize guests and keep them focused.
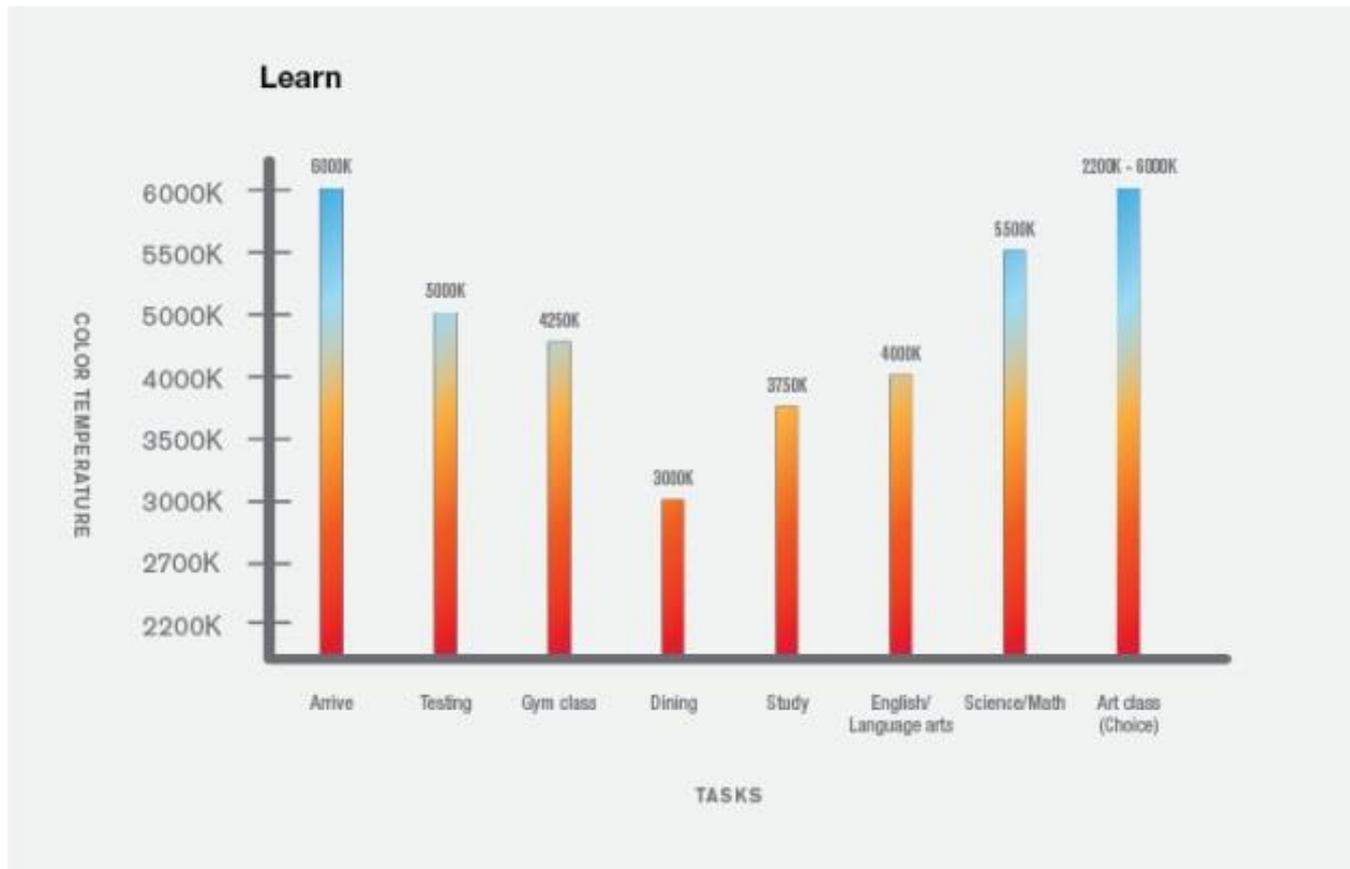
HEALTHCARE/LONG-TERM CARE

Designers specializing in healthcare facilities know the environments they create have to be sensitive to the often-conflicting needs of both patients and caregivers. Tunable systems provides the flexibility required for these unique demands.

One example of lighting's impact in this category derives from research with Alzheimer patients. It's been found that the right prescription of light color and intensity can boost their memory and wakefulness, reduce irritability, and realign them with their natural 24-hour circadian rhythm, which helps them complete the multiple stages of sleep.
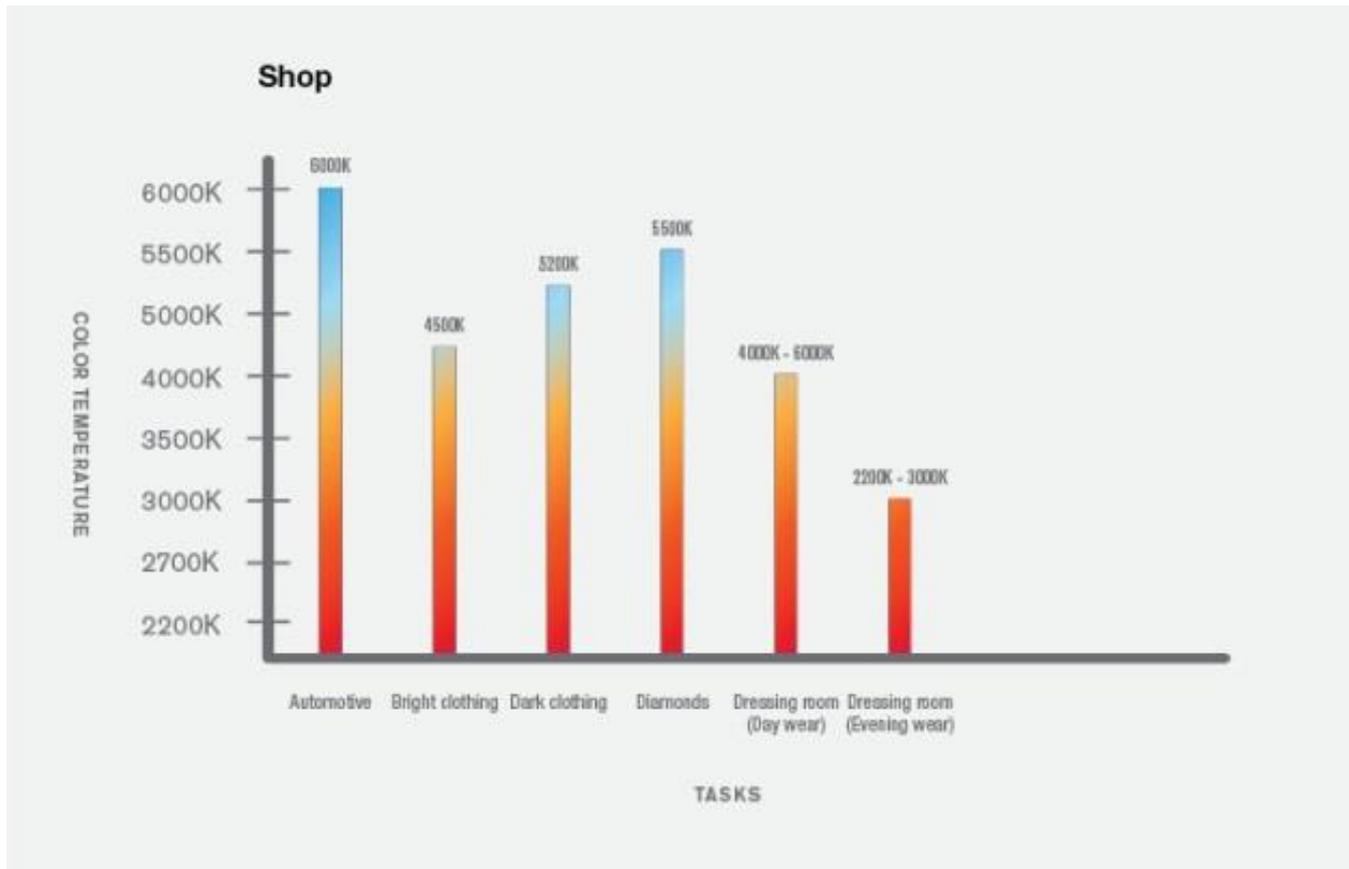
We've learned that patients rest better and heal faster when lighting is at warmer color temperatures no higher than 3000K, whereas hospital staff need higher color temperatures and light levels to perform their work, examine the patient, administer treatments, read their charts and stay alert and focused Being able to provide the variability and flexibility to adjust light settings that satisfy these diverse situations and needs is now an easy remedy for designers who incorporate Tunable LED systems into their projects."

Learn

A bar chart showing COLOR TEMPERATURE (y-axis) versus TASKS (x-axis):

Task	Color Temperature
Arrive	6000K
Testing	5000K
Gym class	4250K
Dining	3000K
Study	3750K
English/Language arts	4000K
Science/Math	5500K
Art class (Choice)	2200K – 6000K

Y-axis labels: 6000K, 5500K, 5000K, 4000K, 3500K, 3000K, 2700K, 2200K

Lighting affects behavior in the classroom, with numerous studies reporting that dedicated light settings can improve a student's attention span, concentration and learning. According to one study, even test scores could be impacted by the precise color temperature of light in room. While individual learning styles differ, common to everyone is an internal biological clock that's affected by the right balance of light color at the right time of day, and that, in turn, can affect attention span and the ability to focus.

Shop

COLOR TEMPERATURE

- 6000K
- 5500K
- 5000K
- 4000K
- 3500K
- 3000K
- 2700K
- 2200K

Task	Color Temp
Automotive	6000K
Bright clothing	4500K
Dark clothing	5200K
Diamonds	5500K
Dressing room (Day wear)	4000K – 6000K
Dressing room (Evening wear)	2200K – 3000K

TASKS

Retail/Shops ceilings are of course also qualified for this system and the tunability it brings to lighting, especially considering how greatly lighting impacts purchasing behavior for everything from carrots in the produce section of a grocery to the carats in the display case of a jeweler.

Every retail environment has a common goal — to sell — and a successful sales environment provides clear visual cues to guide the customer, support their decision-making process, reduce stress during POS and convey branding for repeat business. How these four objectives are achieved vary greatly by what is being sold. Orange carrots prefer a warm tone and wide beam spread at medium intensity, while diamonds prefer a cool tone and narrow beam at high intensity. And, what makes the system a reliable "go to" for any type of retail is that it allows the lighting to help define the experience for whatever goods are being sold.

Approximately 60% of purchasing decisions for clothing are made in the fitting room, so we interpret that as meaning selectable lighting in changing areas is the future of retail.

With LED systems are applied, customers can use controls to see garments in the lighting situations in which they will be worn, such as office, evening, gym, poolside and more – providing different color temperatures and intensities to match the scenarios." In a single fixture, this system can also highlight various types of products, retail displays and ambiances to fit the moods of the specific retail environment, season and consumer. Color changing Downlights, adjustable additionally provide maximum flexibility in highlighting different areas and products within a store/retail environment.

Key Features of our LED systems are available in separate Datasheets and for your information, we manufacture these systems in our own factory, have patents pending and been a R&D inhouse development.

FUNCTION OF REMOTE CONTROLLER：

Product：Remote Controller (Wireless Mobile Controller)

Power：AAA battery×2；Frequency：RF-2.4G；Effective Distance：20M (Without Obstacle)

Number of controllable lamps：1 controller can control 99 groups of lamps, and no limit to the number of lamps in one group.

ID of Lamp：ID of lamp could be 1 to 99.

Multifunctional：ON /OFF, Dimming and Color-temp adjusting,timing ON /OFF, 2 scenes recall,auto dimming,night light.

Copy the ID of Remote Controller：Every remote controller has its ID number.One controller can copy and use the ID number of another controller to control the same lamp, and recover its initial ID number.

Operating method：

Steps of Setup ID number of lamp：

①Power on the lamp you want to set by switch.

②Press 1 or 2 numbers on the number keys of remote controller, than press " ID " key；

③Repeat step ② again.

④The lamp will turn off automatically.

⑤Power off the lamp within 10S then finish setup.If the lamp turn on again automatically,setup is canceled .

Control the lamp：

The function of the keys: as the figure on the right.

Control the single group: press the ID number of the lamp you want to control and then press one functional key(on/off, color temp, brightness).

All-control Model: press " ALL " key to control all groups.

TIMING ON/OFF：

Press the ID number of the lamp you want to set, press " ID " key.

SET: Press the number key 1-99 , press " (ON) " timing ON key or " (OFF) " timing OFF key, then finish setting. Timing units is 10minutes.

Cancel: Press "0" key, then " (ON) " timing ON key or " (OFF) " timing OFF key to cancel timing mode.

COPY THE ID OF CONTROLLER：

Press " S " key of one controller and " I " key of another controller at the same time, keep the distance between the controllers within 10CM for 10S, then finish.

Recovery：Press the " S " key and " ALL " key of the slave controller for 10S, the controller will recover its ID.

NIGHT LIGHT MODE：

Press the " * " key when the lamp is turn off, the lamp is turn on and brightness will be 3% of the rated output.

CIRCLE MODE：

Press " I " key twice within 3S while the lamp is ON, the circle mode will begin to show different state of the lamp.
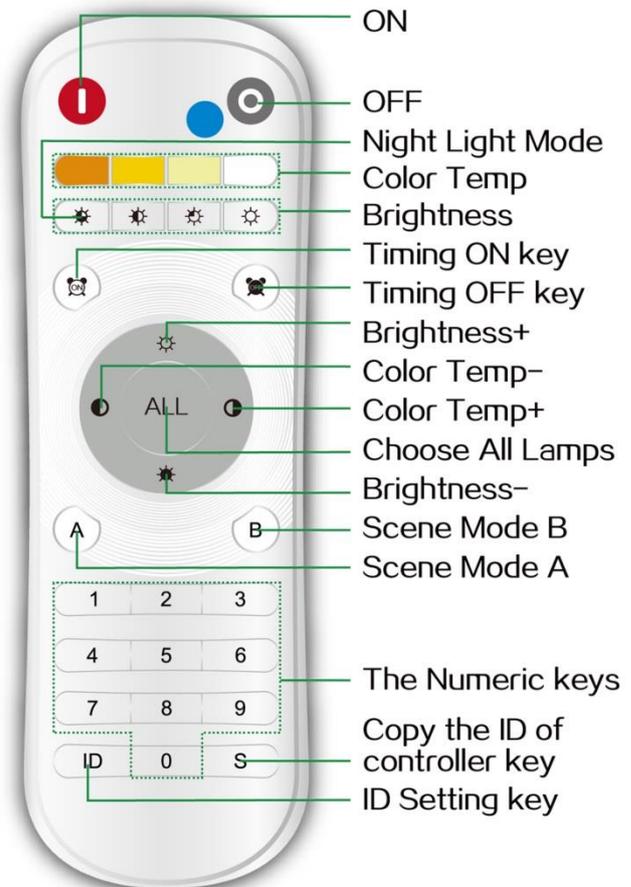
SCENE MODE：Lamp can save two scenes： "A" and "B"

Save：

①Adjust the light as your preference.

②Press the ID number of the lamp.

③Press " ID " key and then press " A " or " B " , the lamp will save the status of lamp.

Recall：

①Press the ID number of the lamp.

②Press " A " or " B " .

Figure labels (right side):
- ON
- OFF
- Night Light Mode
- Color Temp
- Brightness
- Timing ON key
- Timing OFF key
- Brightness+
- Color Temp-
- Color Temp+
- Choose All Lamps
- Brightness-
- Scene Mode B
- Scene Mode A
- The Numeric keys
- Copy the ID of controller key
- ID Setting key

86 Control Board:

Name: Control Board(place-fixed/half-place-fixed)

Power: Rechargeable Li-ion Battery(Endurance is about 3 years); Frequency：RF-2.4G; Effective Distance: 20M (Without Obstacle)

Number of controllable lamps：1 controller can control 6 groups of lamps, and no limit to the number of lamps in one group.

ID of Lamp: The following figures is usable: 1, 2, 11, 12, 21, 22

Multifunctional：On/Off, step/continue dimmable and color temperature adjusting.

Operation Instruction:

Setup ID of Lamp:

① Switch on the lamp;

② Press figure key 1 or 2(the id you want give to lamp), than press the direction key according to the following sequence: " ☼ ☀ ◑ ◐ " (up/down/left/right).

③ The lamp will turn off automatically.

④ Switch off the lamp within 10seconds, setup is finished.

Note: If do not switch off the lamp in time, the lamp will turn on automatically, meaning the setup is cancel.

- ON
- OFF
- Brightness+
- Color Temp−
- Color Temp+
- Choose All Lamps
- Brightness−
- The Numeric key 2
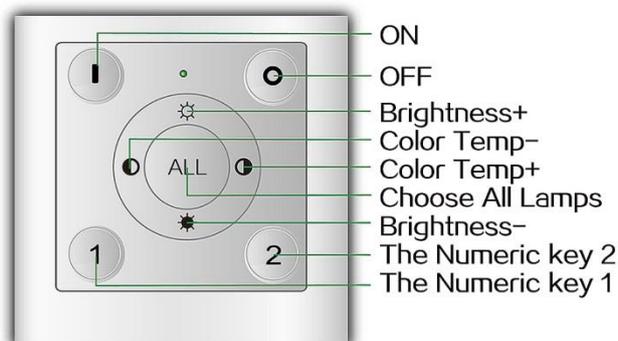- The Numeric key 1

How to control lamp:

Names if keys on control board: see picture.

Control one lamp(group): Press the figure(ID) of lamp, than press the function key you need.

Control all lamp: Press " ALL " , than press the function key you need.

Night light: Press direction key " ☀ " when lamp in turn off (standby), lamp will work at lowest power, about 3% of rated power.

Note: Every lamp could be matched to one hand-held remoter controller and one 86 Control board.

Light sensor :

Name: Light sensor (or Light-sound sensor，Work modes ②)

Power: Rechargeable Li-ion Battery(Endurance is about 3 years); Frequency：RF-2.4G; Effective Distance: 20M (Without Obstacle)

Quantity of lamp is unlimited: only one group.

Function: Test the brightness or sound of place where it is mounted and send the information to the lamp which is matched.

Work modes: Should choose one mode when order.

① Light sensor：The lamp could keep the brightness stable in auto mode, working together with the sensor.

② Light-sound sensor：When brightness is low, the lamp would turn on or off when sound is detected or not.

Operation Instruction:

Setup the Match:

① Switch ON the lamp, press the key at the bottom of sensor two times.

② The lamp will turn off automatically, switch off the power of the lamp, setup is finished.

Enter auto mode:

① When the lamp is on, press the on key on the controller continuously till the lamp is turn off automatically.

② The lamp will flash one time, auto mode is effective. (In auto mode, all dim key become invalid.)

Quit auto mode：

Turn off by controller or switch off by ordinary switch, quit auto mode.

Indicator:

① In ordinary status, indicators is off.

② Press the key at the bottom, one indicator will on. Green means sensor is working, and red sensor is sleeping. Press the key again will change the status of sensor. After 10s, indicator will off and keep the status.

Note: One lamp can be matched to only one sensor. Sensor should be mounted on the place with middle brightness.