








Col-R-Lite

# Ten-Lite System

## Communication for the large solo practice and small group practice

The Ten-Lite System provides a total of ten lights for communicating messages. There are five numbered lights and five colored lights. Messages are sent by pressing several pushbuttons which light up the corresponding lights in all rooms within the office. There is also a buzzer which may be operated at the discretion of the sender. Messages usually consist of numbered light and a colored light.

-  Yellow - Assistant Needed
-  Red - Telephone
-  Green - Check Hygiene Patient
-  White - Next Patient
-  Blue - Front Office

### Ten-Lite System for the Large Solo Practice



CRL 252 Lighting Pushbutton Panel

The Ten-Lite System is used by the solo practice with many operatories and/or many auxiliary personnel or the practice which uses extended duty auxiliary personnel. The Ten-Lite System is used because it is necessary to either identify which room or which person when a message is sent.

### Ten-Lite System for the Small Group Practice

The Ten-Lite System is used in the small group practice which cannot be zoned to use a Multi-Channel Five Lite System. The Ten-Lite System allows the doctors to rotate between all the operatories within the office. The limitation of the Ten-Lite System in a group practice is that all personnel within the office see all the messages that are sent and are disturbed by messages that are not meant for them. Messages sent from one room of the office light in that room and in every other room with a Ten-Lite Station.

### Message Coding for Solo Practice

Messages between the doctor and staff are sent with a colored light to indicate "what" and a number to indicate "where". Typical use of the colored lights is:

The first five operatories would be numbered #1 through #5. Additional operatories would be number #12, #13, #14, etc.

A message is for the doctor unless an additional light is lit to indicate it is for someone else. When the doctor needs an assistant, he would light the Yellow "assistant" light and the number light for the operatory he is in. An important telephone call for the doctor would be announced with the Red "telephone" light (no room number is necessary). If



CRL 232 Lighting Pushbutton Bar in Reception

the telephone call is for a hygienist, the hygienist's room number would be added to indicate which hygienist it was for and identify the message as not for the doctor. A hygiene patient to be checked or a patient set up by an auxiliary for the doctor would be announced with the Green "Patient Check" light and a room number light which would indicate if it is a hygiene operatory or a doctor operatory.

### Message Coding for Two Doctor Group Practice

Messages between the doctor and staff are sent with colored lights to indicate which doctor and "what" and a numbered light to indicate "where". Typical use of the colored lights is:

Yellow-Doctor "A

Red	-	Doctor "B"
Green	-	Hygiene
White	-	Assistant Needed
Blue	-	Telephone

The first five operatories would be numbered #1 through #5. Additional operatories would be numbered #12, #13, #14, etc.

A Yellow, Red or Green light by itself would indicate a patient had arrived for that provider. A Yellow, Red, or Green light with a room number light would indicate that provider is needed in that room. A provider (doctor or hygienist) would call an assistant by lighting their color, the white light as well as the room number light. The hygienist would request a patient check by lighting the Green "Hygiene" light, a doctor light, and a room number light. An important phone call would be announced by lighting the Blue "Telephone" light and a provider's colored light.

### Responses to Messages

The receiver of the message turns off the lights by pressing the "R" button to acknowledge receiving the message and provide a "yes" answer. The receiver can provide a "no" answer or indicate a delay by pressing the "S" button sounding the buzzer. The sender would then press the "R" button to turn out the message and acknowledge receiving the "no" or "delay" message.

### Selection and Location of Components

Two different types of pushbuttons and lights are used in the Ten-Lite System. In locations that the lights are mounted with pushbuttons, components with lighting pushbuttons are used. The lighting pushbutton components have square lenses which light up when pressed. These components are the:

- CRL 232 Lighting Pushbutton Bar
- CRL 252 Lighting Pushbutton Panel
- CRL 253 Lighting Pushbutton Panel cabinet mount

In the components for locations where it is desirable to have the lights mounted in a different location than where the pushbuttons are mounted within the room, round non-lighting remote control pushbuttons and a light display panel are used. These non-lighting remote control components are the:

- CRL 230 Aluminum Button Bar
- CRL 240 Buttons & Wiring Harness
- CRL 243 Button Panel

The Light Display Panels are the:

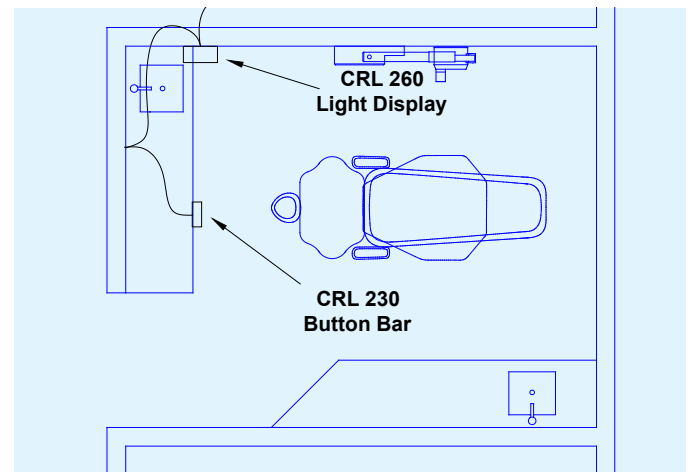
- CRL 260 Light Panel
- CRL 262 Light Bar

### Operatory

As the Ten-Lite System is intended to be used to communicate many messages a day, it is necessary to carefully consider the amount of time required to send or acknowledge a message and the amount of physical effort required. With one hundred twenty messages or more being sent in a day, improper placement of the components within an operatory could cause an extra ten seconds of time (or more) per day. If the components in the System are awkward to see or to reach while you are working, of-

ten you will limit the amount of messages sent and attempt to function without communicating needed messages.

Within the operatory, the lights should be in the doctor's line of vision from his seated work position and high enough so that their vision will not be blocked by other personnel, equipment, or the patient and chair. The pushbuttons should be where they may be reached with a minimal disturbance to the performance of dentistry. When the pushbuttons are a left hand reach, the doctor does not have to put down his instrument or hand piece to communicate. The best height for the pushbuttons is at the doctor's elbow level so that he need not lift his arm. A reach behind is awkward so the pushbuttons should be directly to his side or somewhat away from him but not where he must lean out of his working position to reach.



CRL 260 Light Panel & CRL 230 Aluminum Button Bar

In most operatories, the lights are mounted in a different location within the room than the pushbuttons that operate the lights. The most popular set of lights is the CRL 260 Light Panel which is a recess mount, stainless steel panel which contains the five numbered lights, the five colored lights and an adjustable buzzer. It is mounted between 1:00 o'clock and 3:00 O'clock on the wall at about 54" above the floor. Other sets of lights are the:

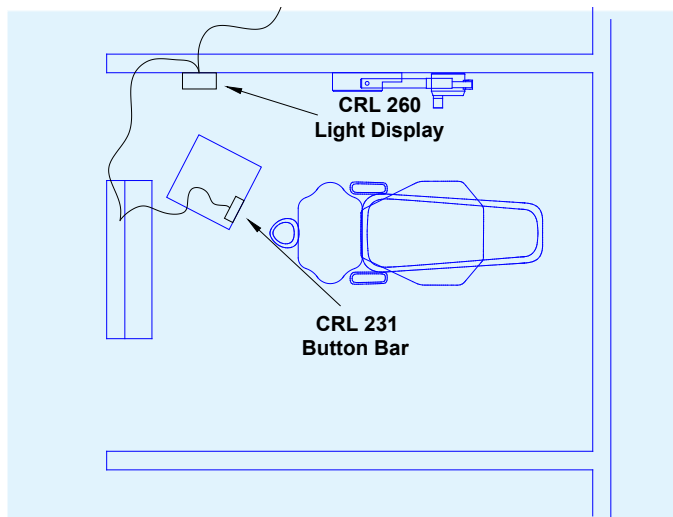
- CRL 261 Light Panel Cabinet Mount
- CRL 262 Light Bar

The most popular set of pushbuttons is the CRL 230 Aluminum Button Bar which has the five numbered pushbut-

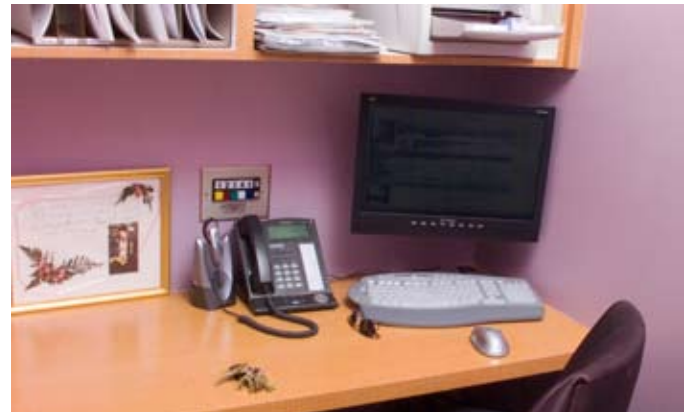
tons, the five colored pushbuttons, a sound pushbutton and a reset pushbutton which do not light up. These are mounted in two aluminum housings which may be mounted either stacked or end to end. This is mounted under the front edge of the counter at 12:00 o'clock behind the patient's head or on the doctor's side of an assistant's mobile cart. On a cart the CRL 231 Aluminum Button Bar, which has a twenty-one foot cable attached to it, may be needed.

Other sets of pushbuttons that could be used are the:

- CRL 240 Buttons & Wiring Harness
- CRL 243 Button Panel
- CRL 243 Button Panel with walnut vinyl finish
- CRL 244 Button Panel ( cabinet mount)



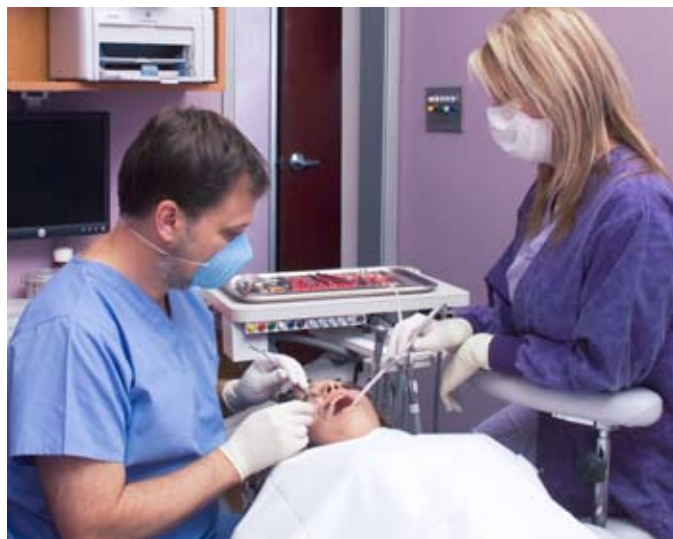
placed on the wall the doctor faces while seated at his desk. The remote control pushbuttons (non-lighting buttons) are located within easy reach of the doctor (under the edge of the desk or on the wall). This locates the lights behind the patient while the patient is seated in front of the desk and it locates buttons within easy reach allowing you to communicate without disturbing the patient. The components that are usually used are the CRL 243 Button Panel (mounted on the wall below the level of the desk) and the CRL 260 Light Panel (mounted on the wall the doctor faces while seated at the desk). If the private office is not used for consultation, a wall panel may be placed on the wall above the desk. A CRL 252 Lighting Pushbutton Panel is usually used.



CRL 252 Lighting Pushbutton Panel

### Laboratory, Sterilization & Lounge

These areas are usually equipped with a wall mounted panel such as the CRL 252 Lighting Pushbutton Panel. This panel should be located where it can be reached from the seated position if there is a seated work position in the room.



CRL 260 Light Panel & CRL 231 Aluminum Button Bar

Any set of lights may be used with any set of pushbuttons. Also, more than one set of lights or pushbuttons may be used within a room if needed. Particularly in an operatory bay, one set of lights may be visible from all locations but a set of pushbuttons would be needed near each of the chairs.

### Private Office

Where each doctor has his own private office and the office is used for consultation, remote control pushbuttons are used with a light display panel. The lights are



CRL 252 Lighting Pushbutton Panel

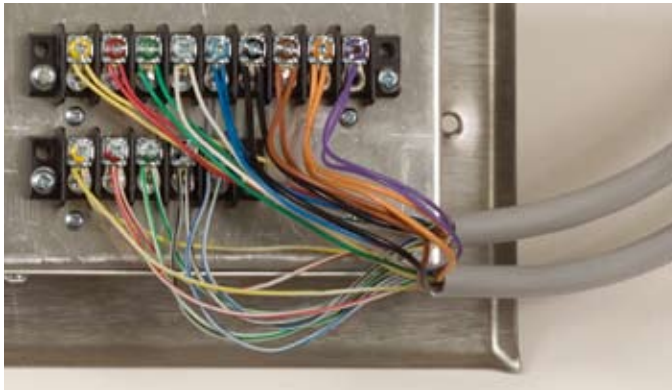
### Reception Office

Reception offices usually have either a window or a check writing counter separating the receptionist from the waiting room. When there is a check writing counter as in the picture on page one, a CRL 232 Lighting Pushbutton Bar, which has two rows of pushbuttons which light up, is normally used. As this component does not have buzzer built in, a CRL 239 Buzzer is usually installed beneath the main

work counter. When there is a window, a CRL 252 Lighting Pushbutton Panel is usually installed next to the window.

### Installation

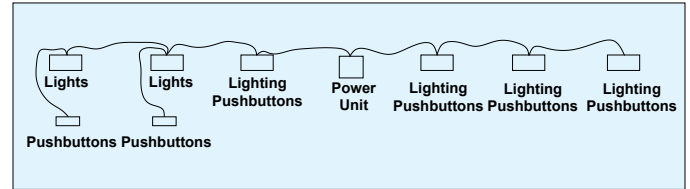
Theta Systems have been designed so that they do not need highly skilled personnel to install them. In most new offices, the Systems are installed by dental installers or by electricians but they are sometimes installed by handymen or by the doctor. When installed in an existing office, the System is usually installed by a handyman, alarm system installer, or the doctor. As there are only fourteen wires to connect in each room, a six room office may take as little as four man hours to install into new construction.



Color coded panel wires clamped under color coded terminal screws

All panel components have terminal screws which have been color coded to match the color of wire that connects to them. Bar components are supplied with a seven or

twenty-one foot color coded cable attached. In all cases, wire colors and terminal colors are matched color to color. All stations are in parallel so that any station may be removed without affecting the System and additional stations may be added at any point within the wiring in the future. No plugs are used within the System as they would not match the reliability of the rest of the System. At locations where the cables must be spliced, Theta recommends wire nuts, crimp connectors or solder. These methods allow inspection of the connection and field repair in the rare event of a failure.



Typical system wiring

The Ten-Lite System is powered by a CRL 202 Electronic Power Unit. This unit transforms the 120 volt power from a regular outlet to 27 volts for the lamps within the System and has the electronic switching which holds the lights on after the pushbutton is released. The CRL 202 Power Unit can operate up to fifty stations.

All Theta Power Units are equipped with electronic overload protection which turns the lights out on an overload. This prevents the failure of the semiconductors even in the event of a direct short being made during installation.



**CRL 202 Power Unit**  
Provides 27 volts AC power and latching to hold lights on. Will operate up to 50 rooms.



**CRL 230 Aluminum Button Bar**  
Two machined bars which contain the twelve pushbuttons. May be stacked or tandem. Each bar is 5 3/8" x 1" x 1".



**CRL 232 Lighting Pushbutton Bar**  
Two black plastic bars containing the twelve pushbuttons, ten of which contain lights. Each bar 4 3/4" x 1" x 2".



**CRL 243 Button Panel**  
Stainless Steel Panel with beveled edges containing the twelve pushbuttons. 7 1/4" x 4 3/8"



**CRL 252 Lighting Pushbutton Panel**  
Stainless steel panel with twelve pushbuttons, ten of which contain lights. Includes buzzer. 7 1/4" x 5 1/2".



**CRL 253 Lighting Pushbutton Panel Cabinet Mount**  
Stainless steel panel with twelve pushbuttons, ten of which contain lights. Includes buzzer. 5 7/8" x 4 1/4".



**CRL 252W Lighting Pushbutton Panel**  
Walnut vinyl panel with twelve pushbuttons, ten of which contain lights. Includes buzzer. 7 1/4" x 5 1/2".



**CRL 260 Light Panel**  
Stainless steel panel with ten lights. Includes buzzer. 7 1/4" x 5 1/2".



**CRL 262 Light Bar**  
Two plastic bars containing ten lights. Each Bar 4 3/4" x 1" x 2 1/8".