

## LIGHT INTENSITY FINDINGS

Command Light consistently studies emergency scene lighting to bring you the best possible lighting options available. Not only do these studies aid our company in building more effective products, but these findings help jurisdictions determine the best products for their departments.

In this study, we used advanced software to graphically document the light intensity of different light sources and light scenarios to help establish best-practice light placement to create the most usable light, exactly where emergency personnel need it most.

This white paper analyzes the following:

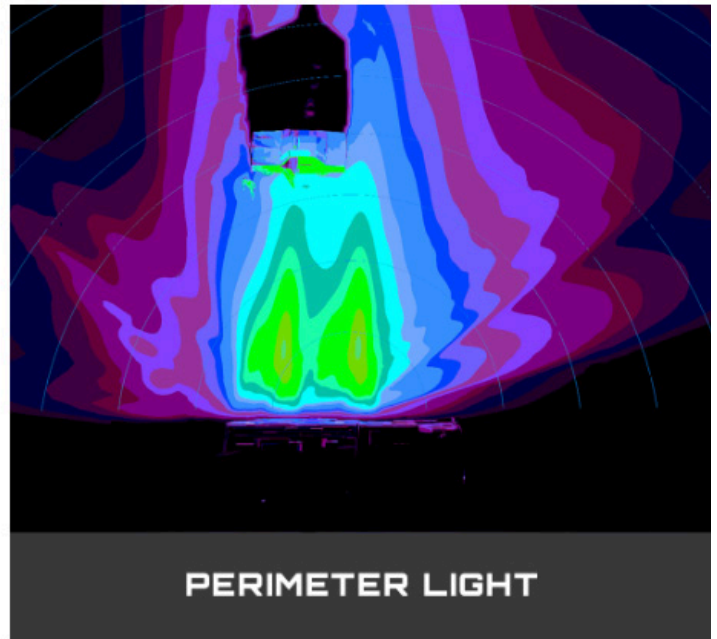
- Grouping of lights
- Placement of lights
- Height of lights

Utilizing light plotting from bird's eye view light, we were able to gain perspective on light intensity at varying distances in relation to the apparatus.

### COMMAND LIGHT TOWER VS. PERIMETER LIGHT



CL602D-FS with 4x FRC Spectras, 20,000 Lumen LEDs



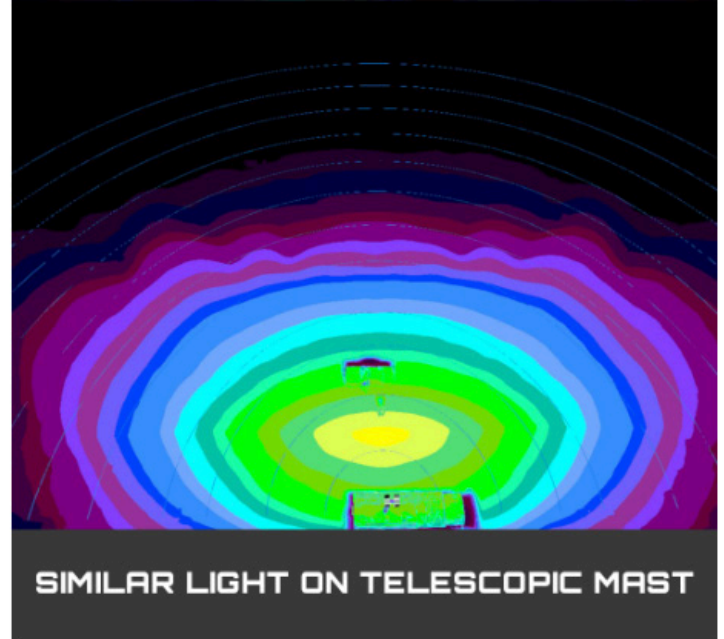
4x FRC Spectra, 20,000 Lumen LEDs – 2 mounted to each side of the truck

**Analysis:** The 4 FRC Spectra lights performed better when grouped together on a light tower, as opposed to placement on the four corners of the truck body.

COMMAND LIGHT TOWER VS. TELESCOPIC MAST



CL602D-FS with 4x FRC Spectras, placed 10 ft. above the truck



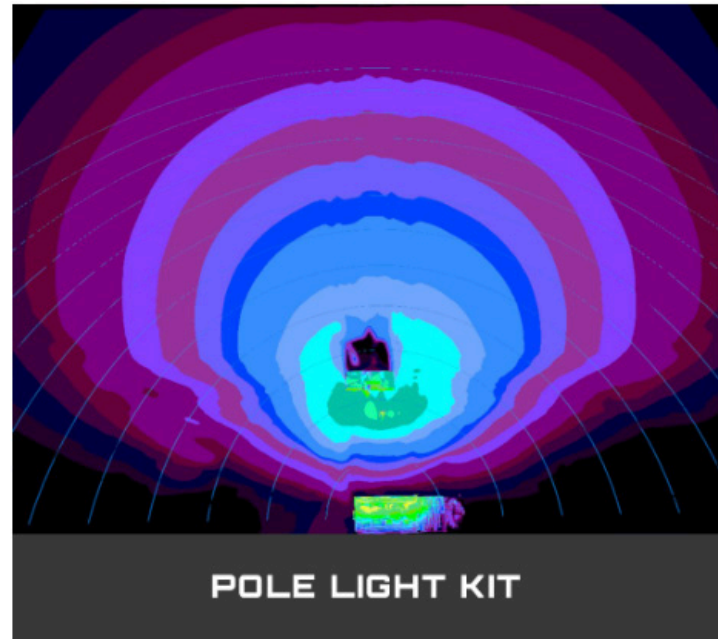
(6) 150-watt LEDs, extended 30 ft. above the truck

**Analysis:** While raising lighting can reduce glare in firefighters' eyes, too much height can decrease light intensity. A tower allows lighting to be raised, lowered, tilted and rotated with ease for optimal lighting.

COMMAND LIGHT TOWER VS. POLE LIGHT KIT



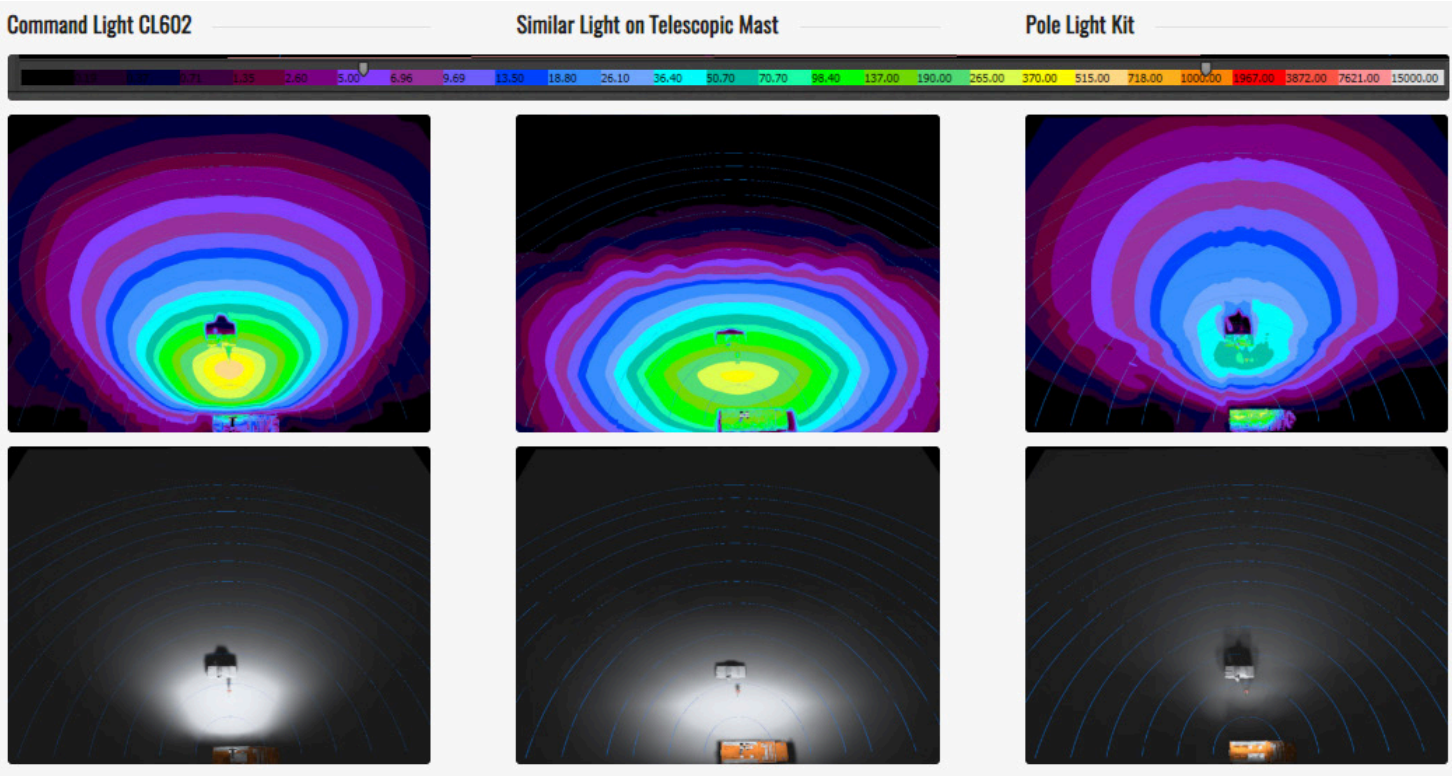
CL602D-FS with 4x FRC Spectras



(4) 150-watt lights mounted on each corner of the apparatus

**Analysis:** While raising lighting can reduce glare in firefighters' eyes, too much height can decrease the intensity of the lighting. A tower allows lighting to be raised, lowered, tilted and rotated with ease for optimal lighting.

COMPARISON OF ALL THREE LIGHTING SCENARIOS



Analysis:

In these light plots, the light output of the CL602 is shown on the left. This tower consists of 4 FRC Spectras, each with a 20,000-lumen output. These lights were selected for the study because they most closely resemble other lighting options available. The CL602's usable light was documented at 58 ft.

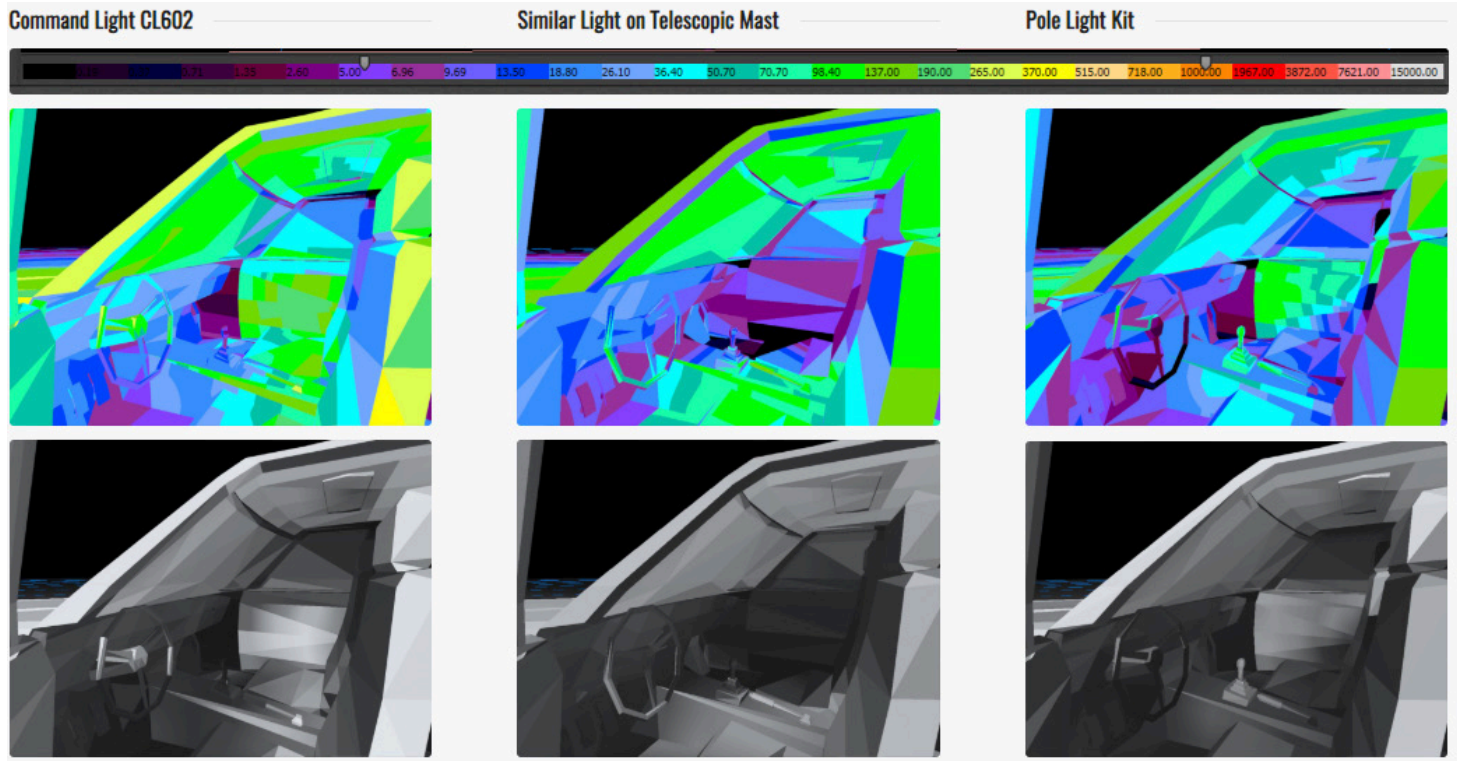
The middle column analyzed an average mast-style light that raises 30 ft. above the truck top. This light was equipped with (6) 150-watt lights, consistent with the CL602. In the study, the usable light was only able to reach 45 ft. because less light was output at the scene level.

The final column shows a set of pole lights with (4) 150-watt lights mounted on each corner of the apparatus. The usable light has a far reach since the light source is near the scene, but the light intensity was diminished because the lights were not grouped together.



**COMPARISON OF LIGHT SOURCE IMPACT ON A VEHICLE INTERIOR**

The below light plots document the amount of usable light inside a vehicle based on the light source angle. The vehicle is roughly 20 ft. from the apparatus.



**Analysis:**

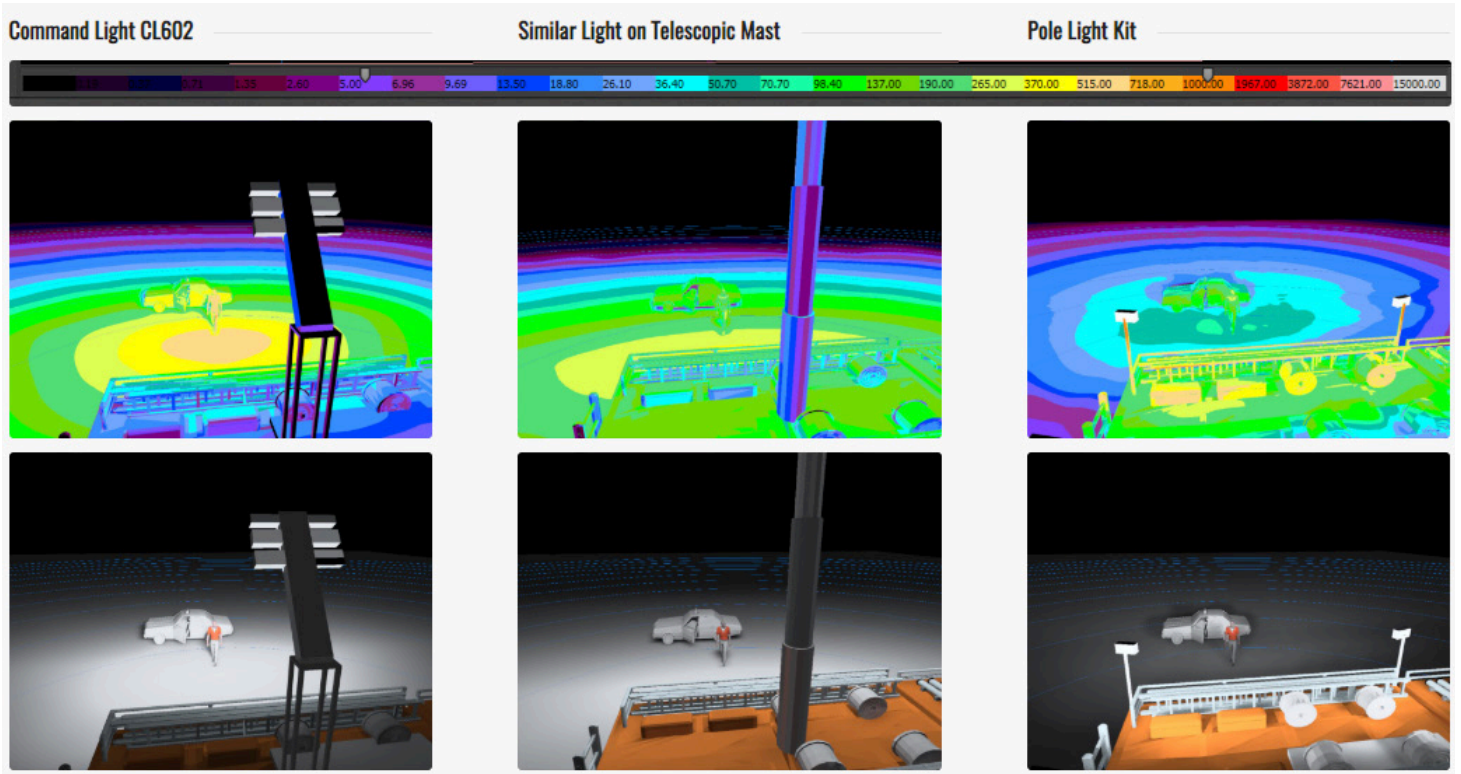
The CL602, pictured above in the left column, shows even lighting throughout the vehicle and illumination levels comparable to a restaurant interior.

The mast-style lighting, in the middle column, is comparable to the CL602, although parts of the interior are under more shadow since the light is coming from a higher angle. The light intensity is slightly reduced.

The four pole lights, shown above in the right column, created considerably less light intensity inside the vehicle.

TOP-OF-THE-TRUCK VIEWS

Similar to the bird's eye view light plots, these images capture the light intensity of the scene.



Analysis:

The CL602, pictured above in the left column, shows intense light for much of the scene, comparable to the intensity of hospital examination room lighting. This lighting also illuminated the side of the car.

The mast-style lighting, shown in the middle column, documents an expansive light footprint, but this light pattern lacks intensity due to the distance of the light source from the scene.

In the right column, the four light poles put off considerably less usable light. Not only is the light less intense, but it covers a significantly smaller amount of the scene.

## FINAL CONCLUSIONS

Permanent towers, of any kind, provide more usable light than portable lighting. The power needed to reach deep into scenes is only prevalent when a tower is able to generate a higher-lumen output from a single source. Based on each light plot study, the Command Light tower provided the most light intensity due to grouping, placement and height of the lights.

The study also found that it is advantageous to keep the light source closer to the scene; light intensity begins to reduce as the source gets farther from the scene, wasting valuable light and power (used to create the usable light). Conversely, if the light source is too low, it can create large shadows. With the Command Light tower's ability to be moved into countless positions, a single tower can be maneuvered to mitigate shadows in all types of situations, including low lighting that occurs near the apparatus. Command Light's street light angle allows the tower to overhang the vehicle to provide crews with more operable light.

Email us at [info@commandlight.com](mailto:info@commandlight.com) if you would like to see us expand any part of this study. We would love your input. It helps us establish the best possible information that will aid in your lighting decisions.