bility of generating 1400 nits of luminance. As the bulbs **102** age, it takes more current to generate the 1000 nits of luminance. Once the maximum current is applied to the bulbs **102** and the luminance drops below some threshold (e.g., 950 nits), warnings to the user may be generated through the light emitting diode (LED) **504**. Such warnings may be repeated at regular intervals (e.g., a warning at every 50 nits decrease). Fault data associated with the drop in luminance may be stored in memory associated with the controller (e.g., RAM, NVRAM). In addition, fault data may be communicated to a local or remote operator by sending data through a network or other data communications connection that can be provided by the I/O device **510**. Event data, fault data and alert messages may be sent and instructions may be received by the controller **500** through the I/O device **510**.

[**0031**] In a preferred embodiment, operators are permitted to vary the brightness of the LCD monitor via a locally mounted potentiometer or though an external remote brightness control box **508** and/or via I/O device **510** as depicted in **FIG. 5**. The brightness control device may in communication with the controller in an electrical fashion and it may in communication via a wireless connection such as infrared. The controller **500** monitors a remote brightness control interface to determine if a remote brightness control box **508** is present. If the remote brightness control box **508** is detected, dimming control (priority) is passed to the remote brightness control box **508** thereby disabling the local potentiometer controls. The local potentiometer is the system's default dimming control. In an exemplary embodiment, the remote brightness control box **508** comprises a multi-position switch and a potentiometer. The switch allows the selection of a series of pre-defined brightness ranges as well as manual override. Examples of some ranges, where the nits are measured at the surface of the LCD, include: nighttime mode (e.g. 0.5 to 200 nits); normal mode (e.g. 201 to 700 nits); sunlight mode (e.g. 701 to 1000 nits); and manual mode (e.g. full dimming control). The potentiometer in the remote brightness control box **508** varies brightness within the selected range.

[**0032**] The remote brightness control box **508** is used as part of a closed loop control method including the brightness sensors **506**, the controller **500** and the remote brightness control box **508**. The remote brightness control box **508** provides a signal (e.g., voltage) to the controller **500**. The controller then converts this signal to a brightness level using known techniques (e.g., mathematical equation, look-up table, etc.). The controller **500** then monitors the bulb brightness through brightness sensors **506** and adjusts bulb current to maintain the brightness at the user-defined level.

[**0033**] By using a look-up table to define brightness settings, the controller **500** can be updated to accommodate age of the display or application of the display. For example, if the display is moved from bridge of ship to the engine room, the tables defining brightness levels in controller **500** may be updated (e.g., through I/O device **510**) to set new brightness levels for this environment.

[**0034**] The controller **500** continuously monitors the inverters **202**/**204** for over-current, under-current and open circuit conditions. As described above, in reference to **FIG. 2**, an exemplary embodiment includes two inverters **202**/**204** and each inverter **202**/**204** drives one half of the backlight bulbs **102**, in an interleaved or alternating pattern. In the event that a single inverter **202**/**204** experiences a critical failure, only that portion of the bulbs **102** will be disabled, rendering the display at partial brightness, but completely operational. This is regarded as a soft failure. Since the remaining bulbs **102** will remain unaffected by a singular failure, the LCD display will maintain a uniform brightness across its entire surface. If an over-current, undercurrent or open circuit condition is detected, the controller **500** records these faults into non-volatile memory and visually alerts operators via the status LED **504**. In the event of an over-current or under-current condition, the controller **500** will automatically shut down the affected inverter **202**/**204**. In an exemplary embodiment with two inverters **202**/**204**, the target brightness is cut in half if an inverter **202**/**204** is shut down. The controller **500** can also send an alert message to a remote or local operator using a network connection provided by the I/O device **510**. In addition, the controller **500** can receive instructions from an operator through the I/O device **510**.

[**0035**] The output (or brightness) of the bulbs **102** can be affected by temperature and bulb decay. In an exemplary embodiment, the controller **500** can limit the maximum operator-controlled brightness to a programmed value well below the maximum bulb brightness. This can aid in extending the life of the bulbs **102** and can allow the controller **500** to maintain the programmed maximum brightness for extended periods of time. The light sensors **506** are continuously monitored for proper function, and in the event of a single or multi-modal failure(s), the failure is recorded to non-volatile memory and future readings from the failed sensor **506** are disregarded until the sensor **506** is repaired. Bulb condition may be determined based on present bulb current and/or present bulb temperature. Also, cumulative bulb current may be monitored to determine bulb condition and whether a failure is imminent. For example, if the cumulative bulb current for a bulb has exceeded a threshold, this indicates that a bulb failure is imminent.

[**0036**] Failure data and operator alerts can be sent to a remote or local operator through a network connection provided by the I/O device **510**. When the bulbs **102** are no longer able to sustain the maximum brightness established by the controller **500**, the controller **500** records the maximum brightness into non-volatile memory. This maximum brightness data recorded can be recorded at programmable intervals. This information can assist in determining the need to replace the backlight bulbs **102** before a critical failure has been experienced.

[**0037**] As shown in the exemplary embodiment depicted in **FIG. 5**, the controller **500** also monitors the temperature in the backlit LCD monitor through temperature sensors **502**. Multiple temperature sensors **502** may be used in the backlit LCD monitor. For example, one temperature sensor **502** may monitor the temperature in the electronics chamber and another temperature sensor **502** may monitor ambient temperature in the closed air space, or backlight chamber, between the backlight assembly **100** and the cooling assembly **300**. Exceeded temperature limits can be detected and warnings issued to the user through the LED **504**. A fault may be stored in memory associated with the controller (e.g., RAM, NVRAM) or may be connected to a real-time monitoring or data gathering system or computer.