

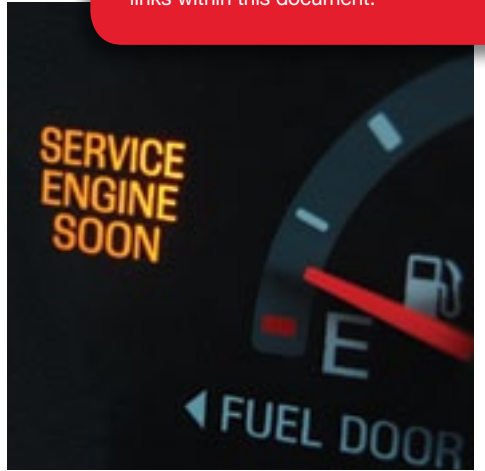


Product Selector Guide

Modular, 1-Piece & Custom Indicators & Light Pipes

VCC™ - Leecraft™ - Littelite™ - CML™

Product sections within this PDF are linked to the VCC website to easily access datasheets. If you do not see the links, you may need to change your adobe reader preference settings in the general section by checking "create links from URLs" to enable the links within this document.



Light Pipes



Used to transmit light from surface-mount or through-hole LEDs to the display panel, VCC's broad light pipe offering includes rigid and flexible solutions in modular, low-profile or one-piece versions. The high-performance LITEPIPE® series of modular light pipes are constructed of optical grade acrylic for optimal light transmittance. For aerospace, networking, telecom, communications equipment, medical and automotive applications with backlighting, direct indication, overlay, or bar-graph displays.

- 3 inches to 3 feet from the LED light source to lens
- Vertical or horizontal formats
- Uniform panel illumination
- Flexfire™ flexible light pipes easily transmit light from pcb LED to front panel
- Changeable viewing options for both backlight and direct viewing
- #1 developer of custom light pipes for specialty applications

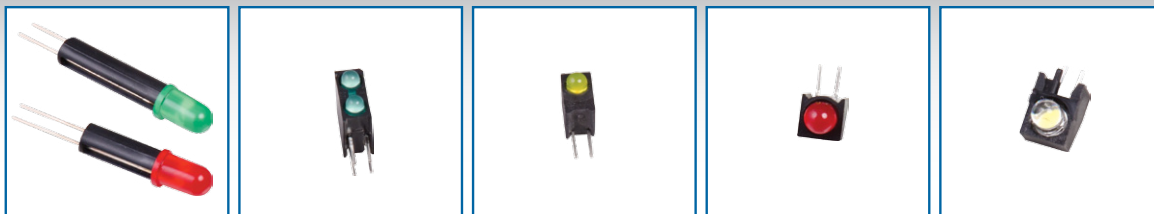
Panel Mount Indicators



VCC modular panel mount LED indicator assemblies eliminate the need for soldering or crimping wires to fragile LED leads. They also simplify the challenges of interfacing the display panel to power source and resolve LED push back issues while delivering superior stability. For communications, industrial, automotive, heavy equipment, security systems and consumer products.

- Easy connection between panel mount LEDs and PCB
- No assembly tools required
- Fast press-fit or threaded panel lens assembly
- Stable at forces of 2Gs, 4Gs & 6Gs from 0-2000Hz
- Sealed versions exceed NEMA 6P
- Locking header connectors mate quickly to pcb power sources

PCB Indicators



VCC's modular PCB mount LED indicator lights and arrays deliver unmatched design flexibility and assembly efficiency. Depending on the application, VCC's board mounting versions, circuit board standoffs, sockets, and stacking options provide extensive design flexibility when designing with either round or rectangular LEDs. Good for displaying status, logic or fault detection or any application requiring board-mounted LEDs.

- Design flexibility, efficient assembly
- Through-hole and SMT packages
- Horizontal, vertical, right-angle mounting versions
- Variety of stacking options
- Use with round or rectangular LEDs
- Standoffs from .100" to 1" provide various heights off PCB

Indicator Solutions

Panel Lenses



VCC panel lenses firmly attach to display panels permitting the PCB-mounted LED and circuit board to be installed or removed from behind without disturbing the panel display.

- Uniform illumination for through-hole LEDs and light pipes
- Protects against electrostatic discharge
- Low- & high-profile lens styles and watertight (NEMA 6P) versions

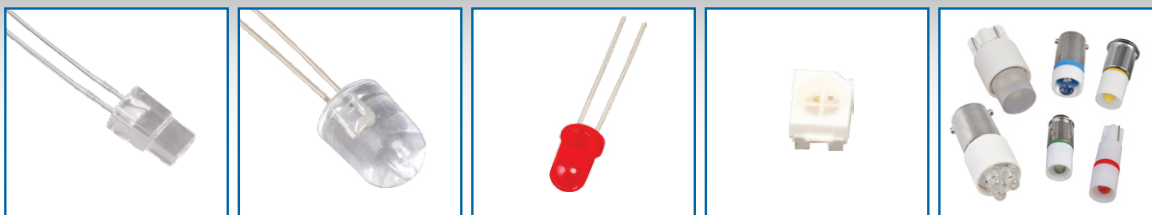
Lampholders



VCC's comprehensive offering of lampholders provides the most options for incandescent, halogen, and fluorescent indicator light applications.

- Largest selection of styles and mounting options
- Lampholders support from 10 to 2000-watt applications
- Based LEDs for retrofitting incandescent indicators

LEDs



VCC's extensive line of LEDs feature through-hole, surface mount, single color, bi-color, flangeless, high-intensity, high bright and backlighting versions. Based LEDs (replacements for incandescent lamps) can easily convert existing applications to an LED light source.

- 3mm, 5mm, 10mm through-hole LEDs
- Surface mount single color, high-intensity, RGB, right angle LEDs
- 0603, 0805, 1206, 1208 package sizes
- Based LEDs

Connectors/sockets



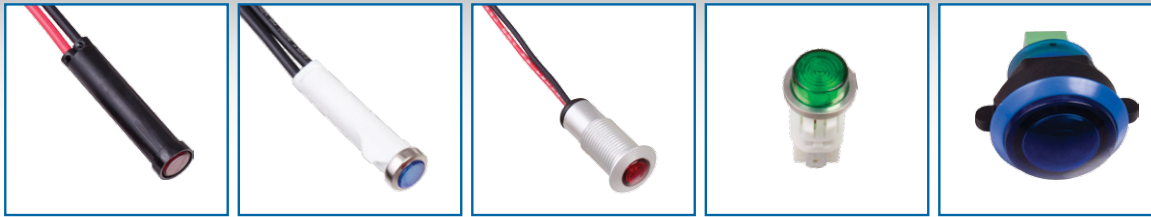
VCC connectors and lamp sockets simplify the electrical connection from panel mounted LEDs to the PCB, while saving assembly time in production and in the field.

- Increased quality of installation
- Headers cannot be inserted in a reverse position
- Ideal for relampable panel mount indicators

1-Piece Indicator Solutions



1-Piece LED Indicator Lights



With the largest offering of one-piece LED indicators in the market, VCC enables engineers to quickly design-in the exact pre-assembled solution to meet the specific project requirements. From panel-mount, rear panel-mount, snap-in, threaded or sealed bushing options to relampable and non-relampable versions in the termination style you need, these indicators are designed for any indoor or outdoor application.

- Indoor & outdoor applications
- Panel-mount, rear panel-mount, snap-in, threaded or sealed bushing options
- Relampable or non-relampable versions
- Quick tab, wire lead, solder lug or wire-wrap termination
- 100,000 hour lifespan
- Mounting hole diameters from .155" to .500"

1-Piece Incandescent Indicator Lights



VCC offers the most 1-piece panel mount indicators with an incandescent light source. Available in snap-fit, press-fit, push-on, threaded bushing and lamp holder versions, with a variety of lamp, termination and voltage options, engineers can quickly select the optimum indicator solution for their application. VCC is the one-stop shop for incandescent indicator lights and replacement lamps.

- Snap-fit, press-fit, push-on, threaded bushing and lamp holder versions
- Round & rectangular snap-in indicators
- Lampholders for all types of lamp bases
- Largest selection of replacement lamps
- Based LEDs for retrofit

1-Piece Neon Indicators



VCC's broad product line of one-piece circular and rectangular neon indicator lights and circular lampholders makes it easy for engineers to find the right neon indicator solution. With snap-mount, snap-fit, push-on, press-fit and threaded bushing mounting options, installing a VCC neon indicator solution is fast and efficient.

- Relampable & non-relampable
- Snap-mount, snap-fit, push-on, press-fit and threaded bushing mounting options
- Round & rectangular snap-in indicators
- 10,000 to 25,000 hour lifespan
- High-temp polycarbonate lenses
- UL, CSA, MIL-L-3661

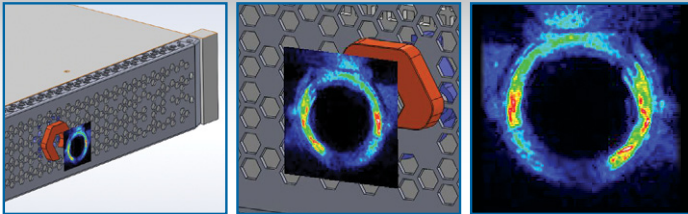
VCC – Enabling Better Communication with Light

Design Services

VCC has been a trusted design partner in helping OEMs solve challenging applications involving the delivery of light. From simple to more complex human machine interface systems, VCC excels at designing, testing and manufacturing custom light indication solutions in less time, to help companies communicate better with light.

- Optimize design performance
- Create the most cost-effective solution
- Keep program development on schedule
- 3-D models, prototyping, testing
- Shorter time-to-market
- Lifecycle partnerships from concept through product fulfillment

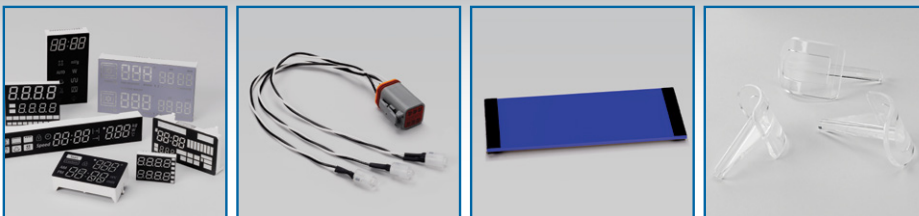
Light Modeling



VCC utilizes light modeling and human vision simulation to provide a complete analysis of all photometric and colorimetric characteristics of any product design. With these advanced design services, VCC can predict the behavior of light and identify potential hot spots in the design to ensure the best performance for your application. Light modeling services also help verify compliance with standards and specifications, optimize output performance, efficiency and appearance of the HMIS lighting – all before any tooling is placed.

- Minimize up-front design time and costs
- Compliance with legislation and standards
- Optimize performance, efficiency and appearance
- Accurately predict stray light, hot-spots and uniformity
- Analyze surface contribution
- Simulate and analyze photometric and illumination properties

Special & Custom Solutions



VCC offers moisture-sealed light pipes, watertight and oil-tight indicator lights that withstand harsh environments, and deliver up to NEMA 6 protection. VCC also develops cost-effective custom indicator lights, assemblies, LED lenses, displays and light pipes that meet unique specifications for demanding requirements. Developed to perform in safety, outdoor, aircraft and military, industrial machinery, and instrumentation applications.

- Moisture-sealed flexible and rigid light pipes
- Sealed LED & NEMA 6 indicators
- Watertight and oil-tight neon indicator lights for harsh environments
- High efficiency halogen indicators for high pressure, high temp applications
- Custom indicator lights and assemblies
- Custom LED lenses and displays

Experts in Communicating with Light

Visual Communications Company, LLC, headquartered in Poway, California, is the largest manufacturer of LED light pipes and LED, incandescent, neon and specialty indicator lighting solutions for global markets including aerospace, medical, automotive, transportation, safety and industrial. VCC brings 40+ years of experience in LED indication design, engineering, manufacturing and light modeling design services to help development engineers change the way human machine interface systems use indication to communicate better with light. VCC, more than indication – communication.

The VCC Difference

With the recent acquisition of the Chicago Miniature Lamp, Leecraft and Littellites indicator product lines, VCC now has the broadest offering of LED light pipes, modular and 1-piece indicator lights with the most available options across all lighting technologies to guarantee the best solution for your application. VCC stocks most products to shorten your lead-time. Global manufacturing operations control costs and product flows to keep you competitive while offering the highest quality to your finished product operating in the field. VCC continues to work with OEMs and engineering design firms to enhance the HMIS experience by creating new ways to move light.



Products

Modular Indicators

- Light pipes
- Panel lenses
- Modular panel mount
- Modular PCB
- Lampholders
- LEDs
- Based LEDs
- Incandescent lamps
- Neon lamps
- Sockets and connectors

1-Piece Indicators

- LED
- Incandescent
- Neon

Specialty Products

- Sealed
- Halogen
- Custom solutions

Certifications

VCC is ISO 9001:2008 quality system and ISO 14001: 2004 environmental system certified.

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