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.

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 with compliance with standards, design evaluations, 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 regulations and standards
• Optimize performance, efficiency and appearance
• Accurately predict stray light, hot spots and uniformity
• Analyze surface contributions
• Generate and analyze photometric and illumination properties

Special & Custom Solutions

VCC offers moisture-sealed light pipes, waveguide and light guide 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.

• Water-resistant flexible and rigid light pipes
• Sealed LED & NEMA 4 indicators
• Waveguide and optical waveguide 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, Lewcraft and Littelites indicator product lines, VCC now has the broadest selection 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
• Holder panel mount
• Holder FOG
• Lampholders
• LEDs
• Lensed LEDs
• Incandescent lamps
• Neon lamps
• Sockets and connectors

1-Piece Indicators

• LED
• Incandescent
• Neon

Specialty Products

• Sealed
• Radial
• Custom solutions

Certifications

VCC is ISO 9001:2008 quality system certified.

Visual Communications Company, LLC
12780 Danielson Court
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VCCTM – Leader in Modular, 1-Piece & Custom Indicators & Light Pipes

VCC™ | LEO-6W™ | LUMINAR™ | CML™

More than Indication – Communication
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 display panel.

- Uniform illumination for through-hole LEDs and light pipes
- Protects against electrostatic discharge
- Low-A bright profile lens styles and waterclear (NEMA SP) 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 250-watt applications
- Based LEDs for retrofitting incandescent indicators

Panel Mount Indicators

VCC's modular panel-mount LED indicator assembles eliminate the need for soldering or crimping wires to fragile LED leads. They also simplify the challenges of interfacing medical and automotive applications with backlighting, high speed signals, and non-relampable versions.

- Easy connections between panel mount LEDs and PCB power sources
- No assembly tools required
- Fast press-fit or threaded panel lens assembly
- Uniform illumination for through-hole LEDs and light pipes
- Lampholders support from 10 to 250-watt applications
- Based LEDs for retrofitting incandescent indicators

1-Piece LED Indicator Lights

With the largest offering of one-piece LED indicators in the market, VCC's offerings to the display panel, VCC's extensive line of LEDs feature through-hole, surface mount, single color, bi-color, flameproof, high-intensity, high brightness and backlighting versions. Based LEDs and light pipes can easily convert existing applications to an LED light source.

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

Panel Mount Indicators

VCC offers the most 1-piece panel mount indicators with an extensive light source, from snap-fit, press-fit, threaded bushing and lamp holder versions, with a variety of lamp, termination and voltage options, to a comprehensive offering for their application. VCC is the one-stop shop for incandescent indicator lights and replacement lamps.

- Based LEDs for retrofit
- Lampholders for all types of lamp bases
- Largest selection of replacement lamps

Panel Lenses

VCC's extensive line of LEDs feature through-hole, surface mount, single color, bi-color, flameproof, high-intensity, high brightness and backlighting versions. Based LEDs and light pipes can easily convert existing applications to an LED light source.

- Zero, spare, 100-hour through-hole LEDs
- Surface mount single color, high-intensity, RGB, right angle LEDs
- VCC-0603, 0805, 1206, 1208 package sizes
- Based LEDs

LEDs

VCC's broad product line of one-piece circular and rectilinear LED indicators with a variety of lens shapes makes it easy for engineers to find the right LED indicator solution. VCC's broad product line includes snap-in, threaded bushing and lamp holder mounting options, making it easy for engineers to find the right LED indicator solution.

- Based LEDs for retrofit
- Lampholders for all types of lamp bases
- Largest selection of replacement lamps

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.

- Nonmolded quality of fabrication
- Reads cannot be inverted in a reverse position
- Ideal for nonrelampable panel mount indicators

1-Piece Incandescent Indicator Lights

1-Piece Neon Indicators

1-Piece LED Indicator Lights

Panel Mount Indicators

VCC 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 stands, sockets, and receptacles offer mold-in or nonrelampable options to relampable and nonrelampable versions in the termination style you need, these indicators are designed for any indoor or outdoor application.

- UL, CSA, MIL-L-3661
- High-temp polycarbonate lenses
- 10,000 to 25,000 hour lifespan
- Snap-fit, press-fit, push-on, threaded bushing and lamp holder versions
- Lampholders for all types of lamp bases
- Largest selection of replacement lamps
- Based LEDs for retrofit

PCB Indicators

VCC's product line of PCB indicators and PCB assemblies to panel mounted indicators to replace incandescent indicator lights and replacement lamps.

- Based LEDs for retrofit
- Lampholders for all types of lamp bases
- Largest selection of replacement lamps
- Based LEDs for retrofit

Lampholders

VCC offers the most 1-piece panel mount indicators with an extensive light source, from snap-fit, press-fit, threaded bushing and lamp holder versions, with a variety of lamp, termination and voltage options, to a comprehensive offering for their application. VCC is the one-stop shop for incandescent indicator lights and replacement lamps.

- Based LEDs for retrofit
- Lampholders for all types of lamp bases
- Largest selection of replacement lamps
- Based LEDs for retrofit

PCB Indicators

VCC's mod...
**Modular LED Indicator Solutions**

**Panel Lenses**

- VCC panel lenses firmly attach to display panels permitting the PCB-embedded LED and circuit board to be installed or removed from behind without detaching the display panel.
- Uniform illumination for through-hole LEDs and light pipes.
- Low-A & high-profile lens styles and watertight (NEMA 4X) 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 120 volt AC 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 brightness 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.

**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.
- Terminals quality of 10,000 hours.
- Readers cannot be inserted in a reversed position.
- Ideal for relampable panel mount indicators.

**Panel Mount Indicators**

- VCC modular panel mount LED indicator assemblies eliminate the need for soldering or crimping when reusing LED lampbases.
- Easy connections between panel mount LEDs and PCB.
- All assemblies include VCC’s exclusive InterConnect badge.
- Fast press-fit or threaded panel lens assembly.
- Ideal for JST headers from 26B, 46A & 66A in 300 volt.
- Sealed terminations exceed NEMA 6P.
- Locking header connectors made 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 connectors offer robust, elaborate, extensive design flexibility when designing with either round or rectangular PCBs. Good for designing, debugging, layout or finding operation-solving assembly in any application requiring board-mounted LEDs.
- Design flexibility, easy assembly.
- Variety of style, package sizes.
- Use with mount or rectangular LEDs.
- Standards from .020” to .032” provide various height off PCB.

**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 acryl for optimal light transmission. For aerospace, networking, telecommunication, transportation, medical and automotive applications with backlighting, direct indication, overlay, or bar-graph displays.
- 3 inches to 3 foot from the LED light source to lens.
- Vertical or horizontal formats.
- Uniform illumination for through-hole LEDs and light pipes.
- Low-A & high-profile lens styles and watertight (NEMA 4X) versions.

**Connectors/Sockets**

- Standard package exhaust from PCB to front panel.
- Locking header connectors mate quickly to PCB power sources.
- Fast press-fit or threaded panel lens assembly.
- Easy connection between panel mount LEDs and PCB.
- Changeable viewing options for both backlight and direct viewing.
- Flexfire™ flexible light pipes easily transmit light from surface-mount or through-hole LEDs.
- Uniform panel illumination.
- Vertical or horizontal formats.
- 3 inches to 3 feet from the LED light source to lens.
- Standoffs from .100” to 1” provide various heights off PCB.
- Use with round or rectangular LEDs.
- Variety of stacking options.
- Horizontal, vertical, right-angle mounting versions.

**1-Piece LED Indicator Lights**

- With the largest offering of one-piece LED indicators in the market, the display panels boards designed in the exact pre-assembled solution to meet the specific project requirements. From panel-mount, rear panel-mount, snap-in, threaded or sealed bushing mounting options to relampable and non-relampable versions, VCC offers the most 1-piece panel mount indicators with an incandescent light source.
- Snap-fit, press-fit, push-in, threaded bushing and lamp holder versions.
- Based & non-relampable snap-in indicators.
- Lampholders for all types of lamp bases.
- Largest selection of replacement lamps.
- Based LEDs for relamping.

**1-Piece Incandescent Indicator Lights**

- VCC offers the most 1-piece panel mount indicators with an incandescent light source. With a variety of lamp, termination and voltage options, engineers can quickly select the optimum indicator solution.
- Snap-fit, press-fit, push-in, threaded bushing and lamp holder versions.
- Based & non-relampable snap-in indicators.
- Lampholders for all types of lamp bases.
- Largest selection of replacement lamps.
- Based LEDs for relamping.

**1-Piece Neon Indicator Lights**

- VCC’s broad product line of one-piece circular and rectangular incandescent and neon indicators to quickly select the required application makes it easy for engineers to find the right neon indicator solution. VCC’s panel-mount neon indicators provide threaded bushing mounting options, installing a VCC neon indicator solution is fast and efficient.
- Based LEDs & non-relampable.
- Snap-fit, press-fit, push-in, threaded bushing and lamp holder versions.
- Based & non-relampable snap-in indicators.
- Lampholders for all types of lamp bases.
- Largest selection of replacement lamps.
- Based LEDs for relamping.

Visual Communications Company, LLC 800.522.5546
vcclite.com

**Panel Lenses**

- VCC panel lenses firmly attach to display panels permitting the PCB-embedded LED and circuit board to be installed or removed from behind without detaching the display panel.
- Uniform illumination for through-hole LEDs and light pipes.
- Low-A & high-profile lens styles and watertight (NEMA 4X) 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 120 volt AC 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 brightness 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.
- Terminals quality of 10,000 hours.
- Readers cannot be inserted in a reversed position.
- Ideal for relampable panel mount indicators
**Panel Indicators**

- Flexible mounting options for both backside and side entry
- PT development of custom light pipes for specialty applications

**Lampholders**

- UL, CSA, MIL-L-3661
- High-temp polycarbonate lenses
- 10,000 to 25,000 hour lifespan
- Relampable & non-relampable
- Panel-mount, rear panel-mount, snap-in, threaded or sealed bushing options
- Lampholders for all types of lamp bases
- Largest selection of replacement lamps

**PCB Indicators**

- UL, CSA, MIL-L-3661
- High-temp polycarbonate lenses
- 10,000 to 25,000 hour lifespan
- Relampable or non-relampable
- Snap-in, snap-fit, push-on, thread bushing mounting options
- Replacement lamp holders in incandescent
- High-temp polycarbonate lenses
- VCCLITE.COM

**Panel Lenses**

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

**Modular LED Solutions**

- LED LITE PIPE® 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 medical and automotive applications with backlighting, space, networking, telecom, communications equipment, and non-relampable versions in the termination style you need. These indicators are designed for any indoor or outdoor application.

- VCC offers the most 1-piece panel mount indicators with an extensive light source. A quick connecting design is easy to install and simplify existing installations to an LED light source.

- VCC’s comprehensive 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.

- VCC’s extensive line of LEDs feature through-hole, surface mount, single color, high-intensity, RGB, right angle LEDs

- VCC’s broad product line of one-piece circular and rectangular indicators to quickly satisfy lamp requirements makes it easy for engineers to find the right neon indicator solution. A complete panel mount, rear panel, snap-in, threaded bushing mounting options, installing a VCC panel mount indicator is fast and efficient.

- VCC’s product line of one-piece circular and rectangular indicators to quickly satisfy lamp requirements makes it easy for engineers to find the right neon indicator solution. Install a VCC panel mount indicator is fast and efficient.

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- VCC’s product line of one-piece circular and rectangular indicators to quickly satisfy lamp requirements makes it easy for engineers to find the right neon indicator solution. Install a VCC panel mount indicator is fast and efficient.
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-resistant flexible and rigid light pipes
- Sealed LED & NEMA 6 indicators
- Water resistant and oil-tight 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

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- Custom indicator lights and assemblies
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VCC utilizes light modeling and human vision simulation to provide a complete analysis of 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 HMI lighting – all before any tooling is placed.

- Minimize up-front design time and costs
- Compliance with regulations and standards
- Optimize performance, efficiency and appearance
- Accurately predict stray light, hot spots and uniformity
- Analyse surface contribution
- Generate and evaluate photometric and illuminance properties

Certifications

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 project development on schedule
- 3-D models, prototyping, testing
- Shorter time-to-market
- Lifelong partnerships from concept through product fulfillment

Experts in Communicating with Light

With the recent acquisition of the Chicago Miniature Lamp, Leecraft and Littelites 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 engineer design firms to enhance the HMI experience by creating new ways to move light.

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VCC – Enabling Better Communication with Light

Design Services

Light Modeling

Special & Custom Solutions

Products

Modular Indicators
- Light pipes
- Panel lenses
- Water resistant panel mount
- Water resistant FOG
- Lensportables
- LEDs
- Baked LEDs
- Inconel steel lens
- New lamps
- Sockets and connectors

1-Piece Indicators
- LED
- Inconelcoast
- None

Specialty Products
- Sealed
- Rugged
- Custom solutions

Certifications

VCC is ISO 9001:2008 quality system certified

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More than Indication – Communication

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Special & Custom Solutions

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- Moisture-resistant flexible and rigid light pipes
- Sealed LED & NEMA 6 indicators
- Waterproof oil-tight index indicator lights for harsh environments
- High efficiency halogen indicators for high pressure, high temp applications
- Custom indicator types and combinations
- Custom LED lenses and displays

More than indication – Communication