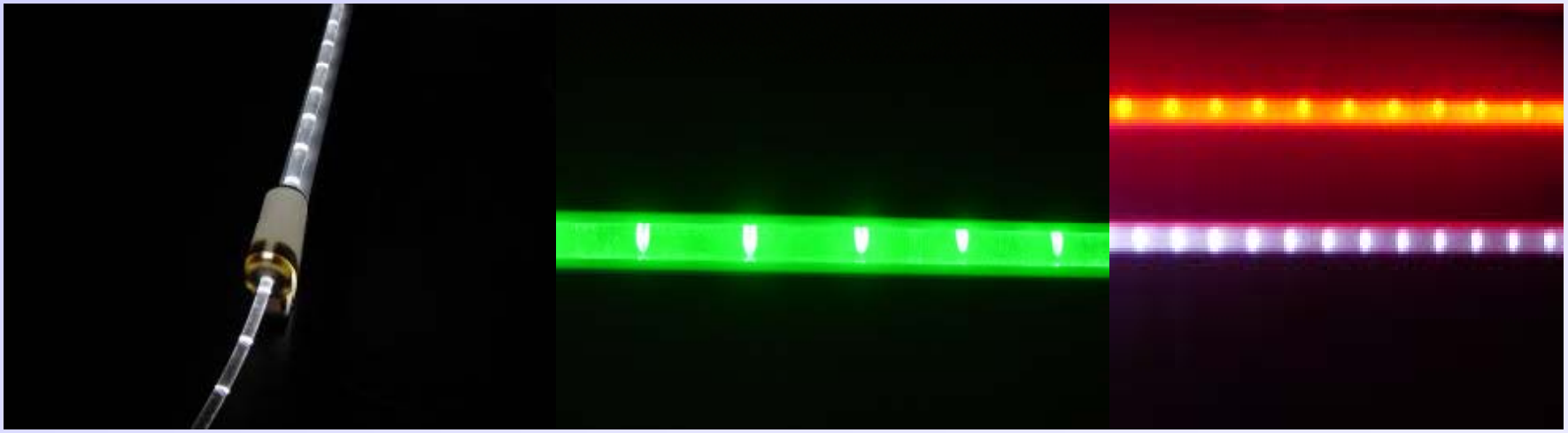
VISUS

Visus Photonics - Visionary Technologies
A Light Year Ahead Of a Curve

Another World's First Lighting Systems from VISUS

Next Generation of LED Ultra-Power Efficient “Neon” like Lights With Large Core Optical Fiber

With just two LEDs: Up to 25,000 nits in any color
From a 3 - 8 mm diameter Fiber at less than One Watt/M



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Visus Next Generation Neon And Signage Lights

VISUS PHOTONICS offers large core UHB High Performance Fiber Optic Lighting Systems with unique DOPI™ modular LED & CCFL Light Engine, that out-perform the conventional devices and offer an unparalleled flexibility to meet different application needs.

Our HOW™ fiber lighting system is fundamentally different from all conventional systems in all three core system components:

- Multiple DOPI™ Miniature Light Engines coupled to a side face of light fiber of any length. No need for a massive conventional edge-coupled Light Engine restricting fiber length and causing high flux losses.
- LED FoCOUPLER™ foconic optical couplers optimizing flux output and intensity distribution
- Fully controllable Collimated Light Extraction from a fiber only into useful directions.

Our Neon Light requires less than 2 Watt per one meter.

- How: 95% of LED light gets used in the Visus Next Generation Neon and Signage Lights, as opposed to 20% in most current Neon and LED Lights.

Advantages:

- 90% -99% electricity savings.
- Longer lifetime (50,000 to 100,000 hours vs. 20,000 hours for Neon).
- Safety - no high voltages, no transformers.
- Patented HOW™ allows coupling high brightness LEDS into thin fibers
- Improved LED cooling.
- Directionality of illumination focuses light only where it is needed, saving 50-75% of light output.
- Higher spectral Gamut.
- No harmful mercury (Rohm compliant)
- Ease of Installation and Maintenance (can be done by electrical contractor instead of specialized workers).

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“NEON” LIGHT FIBER

Patented “DOPE™” (Distributed Optical Pipe Ejector) Optical Light Fiber with directional Discrete & Continuous light Extractors.

Multiple 60mW white SMT LEDs are mounted in a special fully sealed “FoCoupler™” modular Light Engine Modules.

Module length:0.6 m
Diameter: 3-10 mm

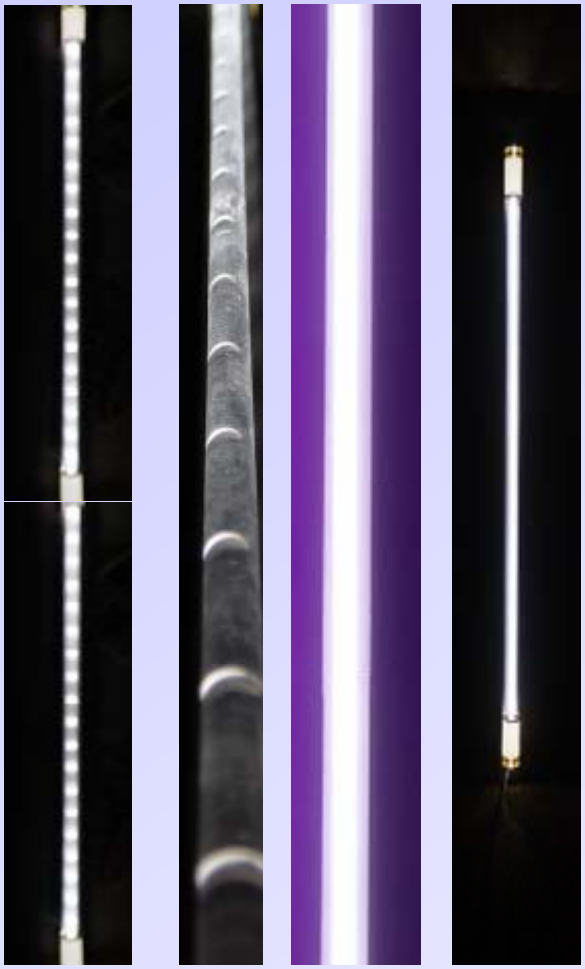
Fiber Luminance:

3000 – 5000 nits continuous

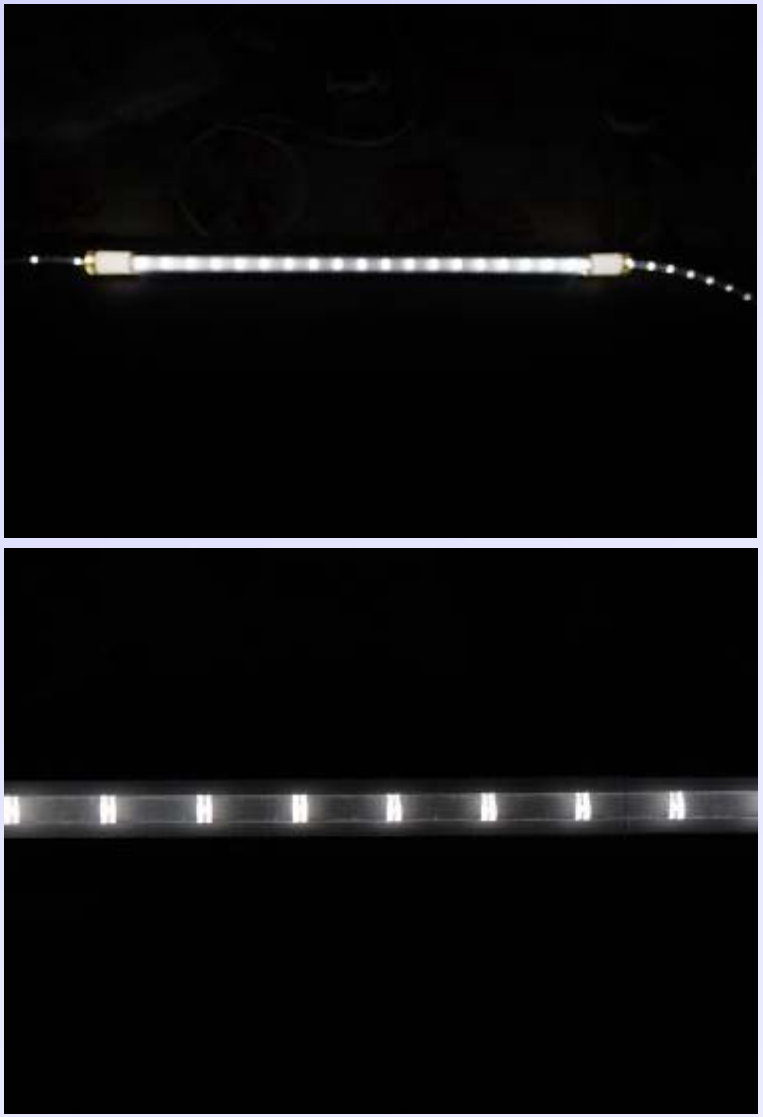
25,000 nits discrete

Power Efficiency:

5 – 50 times higher than conventional neon & holiday lighting



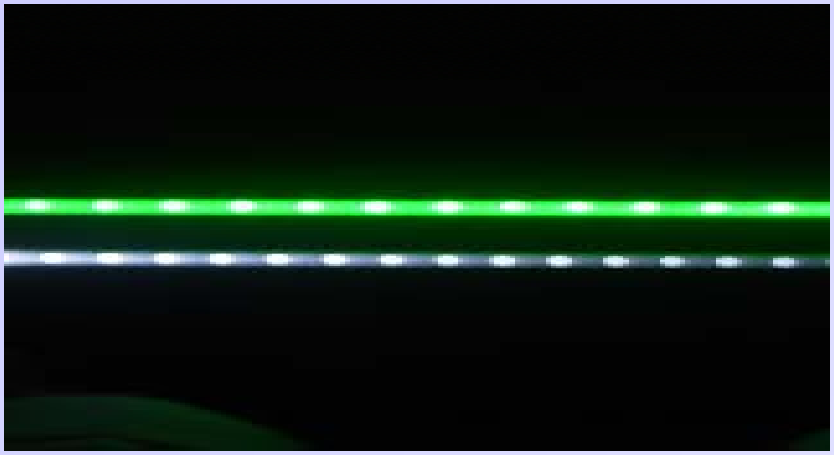
Chained Modules: Discrete & Continuous DOPE™ Fiber of unrestricted length with multiple DOPI™ Light Engines (left)

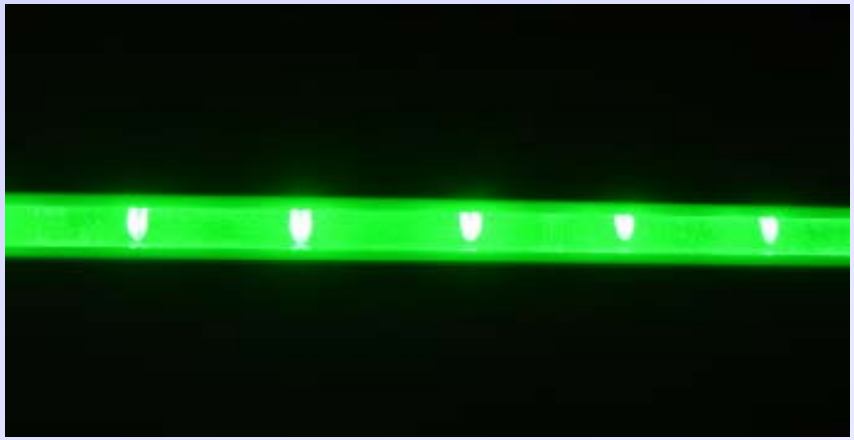


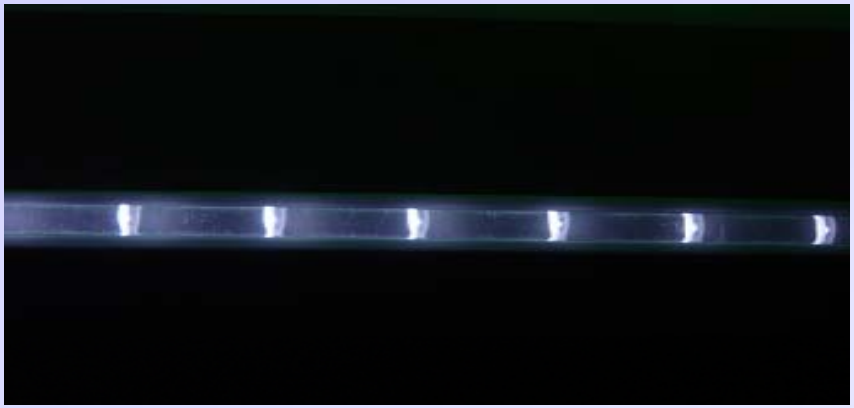
With just Two 0.5W RGB LEDs:

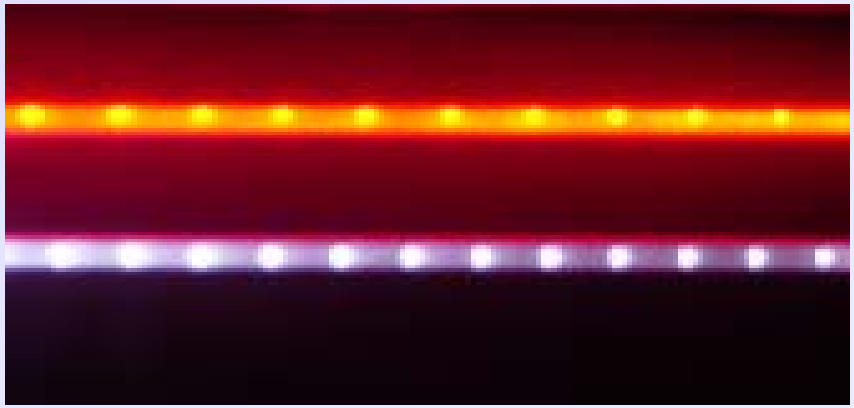
25,000nits of Any Color From a 8 mm Fiber at less than One Watt/M.Patented “DOPE™” (Distributed Optical Pipe Ejector) Light Fiber with directional discrete light Extractors. Complete color gamut of flashing & continuous colors.

Luminance: 25,000 nits – 20 - 50 times higher than neon tubes.
Power Efficiency: x5 times higher than neon lighting and 50 -100 higher than “holiday” lights









VISUS VS. Best Legacy Devices

	HOW	Conventional
DOPI™ Light Engine Typical dimensions: Diameter: 10 – 15 mm Length: 10mm. Flux Output with SMT LEDs: 50 – 150 lm with lambertian & collimated distribution	Ultra-compact DOPI™ LED sealed module is coupled to an active SIDE face of a flexible light fiber and reduce light losses in a long fiber; enables to inject orders of magnitude higher flux and produce continuous monofilament large core fiber of any required length and luminance without any loss of power efficiency.	Expensive Robust bulky Engine with an optical concentrator coupled to a fiber's end aperture. Not suitable for low power SMD LEDs, since fiber's diameter should be prohibitively large to accept higher flux required for longer fibers. With HID sources such conventional coupling scheme causes significant flux losses, up to 75% for the best (and expensive) relatively long fibers in practical systems, which exponentially rise with fiber's length
Fiber Structure	Monolithic Core-Cladding Monofilament large Core Fiber similar to classic telecom optical fiber. Integral thin cladding ensures environmental and UV protection, substituting a need for an additional outer jacket. Enables better luminance control and higher collimation of extracted flux. Available Diameter: 3-12mm. Bend radius: 7-10 diameters	No integral Cladding. Outer jacket should be used with associated extra cost as well as maintenance and installation problems.

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Characteristics of 10 mm diameter Fiber Tube With LED Light Engine Module (LEM) Housing Multiple SMT LEDs.

Less Than One Watt per Meter for Most Demanding Applications.

White SMT	Luminance Distribution			
	Isotropic 360deg.	Hemispherical 180deg.	Quadrant 90deg.	Concentrated 20deg.
Luminance, nit	1000-1500	1000-1500	1000-1500	1000-1500
Linear Power, W/M	2.4	1.2	0.6	0.25
LED/M	18	9	5	2
LEM/M	1	1	0.5	0.2
Fiber Length per one LEM, M	1	1	2	5