

PhlatLight™ Projection Products

Revision 02

Technology Overview

Luminus Devices is currently shipping the PhlatLight™ PT family of products for the projection market. Each product is a complete chipset designed to illuminate micro-display light engines intended for high definition projection TV or Front projectors.

A PT chipset includes a single emitter for each color: red, green and blue. Each device is separately packaged using Luminus' proprietary package technology that is designed exclusively for PhlatLight™ chips.



PhlatLight PT120 and PT39 devices

The package provides excellent thermal management at very high operating powers, a simple electrical interface and, most importantly, efficient optical coupling to the microdisplay.

Luminus currently has several standard chipsets for high definition projection television available:

- PhlatLight™ PT39, designed for micro-displays with 0.4" - 0.55" diagonal
- PhlatLight™ PT85, designed for micro-displays with 0.55" - 0.84" diagonal
- PhlatLight™ PT120, designed for micro-displays with 0.6" - 0.95" diagonal

Benefits of PhlatLight Products in Projection Systems

- Wide color gamut that exceeds the NTSC standard
- Instant turn-on of light source. No warm-up waiting time typical of UHP lamps
- Elimination of the rainbow effect caused by the color wheel in lamp-based systems
- Outstanding reliability with operating life at par with system life - no more bulb replacement
- Environmentally friendly technology - Mercury-free

PhlatLight™ Product Features

Luminus Devices' PhlatLight™ PT Chipsets have the following features:

- Extremely high light output and high surface brightness
- Single emitting area for optimum efficiency
- Emitting area optimized and matched to the size and aspect ratio of the micro-display (16:9, 4:3)
- Collimated emission for higher collection and transmission efficiencies
- Air emitting devices for lower coupling losses, higher luminance, and high reliability
- Uniform distribution of power over the entire chip surface area
- Proprietary packaging technology offers superior thermal and electrical management solutions
- Readily customizable mechanical interfaces
- RoHS compliant (lead-free)

Instant-On PhlatLight™ Evaluation Kits

Luminus Devices has developed Instant-On evaluation kits to allow customers to easily evaluate PhlatLight products. These kits are comprehensive solutions that include efficient thermal management of devices and high current electrical drivers. Each kit includes:

- 3 driver cards, optimized for each device - one per color
- 3 air-cooled heat sinks
- 2 PhlatLight™ RGB chipsets

This flexible solution allows users to experiment with a wide range of configurations and operating modes within minutes.



Instant-On Evaluation Kit

Table 1: Typical Optical and Electrical Characteristics

	PT39			PT85			PT120			Unit
Emitting Area	3.9 (2.09mm x 1.87mm)			8.56 (3.9mm x 2.19mm)			12 (4.6mm x 2.6mm)			mm ²
Color	RED	GREEN	BLUE	RED	GREEN	BLUE	RED	GREEN	BLUE	
λ_d - Dominant Wavelength	625	525	462	625	525	462	625	525	462	nm
Continuous Waveform (CW) Operation										
Drive Current	5.9	5.9	5.9	12.8	12.8	12.8	18	18	18	A
Forward Voltage	2.6	4.6	3.4	2.6	4.6	3.4	2.6	4.6	3.4	V
Luminous Flux at λ_d	290	625	120	660	1500	300	875	2100	400	lm
White Flux (8000K)	>900			>2150			>3000			lm
Pulsed Operation Characteristics at Reference Duty Cycle										
Reference Duty Cycle (DC)	25%	50%	25%	25%	50%	25%	25%	50%	25%	
Peak Drive Current	9.8	9.8	9.8	21.4	21.4	21.4	30	30	30	A
Forward Voltage	3.0	5.1	5.0	3.0	5.1	5.0	3.0	5.1	5.0	V
Peak Luminous Flux at λ_d	460	925	180	1100	2200	425	1500	3100	600	lm
White Flux (8000K)	>625			>1400			>2000			lm

Contact Information:

For more information regarding PhlatLight™ chipsets, please visit our web site at www.luminus.com or contact our Sales department at: sales@luminus.com

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