

New Product Update

TI's newest DLP Pico™ chipset
enables more affordable 1080p
Full HD mobile projection systems

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Agenda

- DLP Pico 1080p chipset evolution
- 0.23" 1080p SE overview
- 0.23" 1080p SE key features and benefits
- DLP Pico 1080p chipset portfolio comparison
- 0.23" 1080p SE system block diagram
- Getting started with development
- Bonus: preview of the 0.47 4K SE chipset

Evolution of DLP Pico™ 1080p chipsets



DLP4710

Up to ~1500 lumens

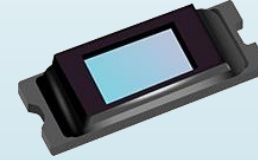
Released 2014



DLP3310

Up to ~800 lumens

Released 2017



DLP230NP

Up to ~500 lumens

Released 2019



DLP230NPSE

Up to ~250 lumens

Released 2023

Smaller size, lower power, lower cost

.23" 1080p SE | Overview

Enables the lowest cost 1080p DLP Pico™ projectors

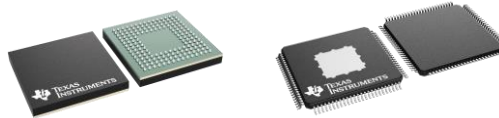
- Leverage existing .23" 1080p optical modules and electronics solutions
- Supports RGB LED illumination up to ~250 lumens (estimate based on available RGB LED solutions)
- Target <\$199 retail price 1080p DLP Pico projectors and <\$99 projection system bill-of-materials cost

.23" DMD DLP230NPSE



- DLP230NP drop-in replacement
- Leverage existing optics
- High optical efficiency

Controller | PMIC DLPC3426 | DLPA3000



- DLPC3436 drop-in replacement
- ½ LED power; lower duty cycle
- Up to 6A LED current

Smallest, most affordable DLP 1080p chipset

- **Size**
 - Smallest form factors
 - ~1/3rd heatsink size
- **BOM affordability**
 - Lower priced optical engine
 - Lower priced chipset

Availability: DMD, controller, and PMICs available now on [Ti.com](https://www.ti.com)

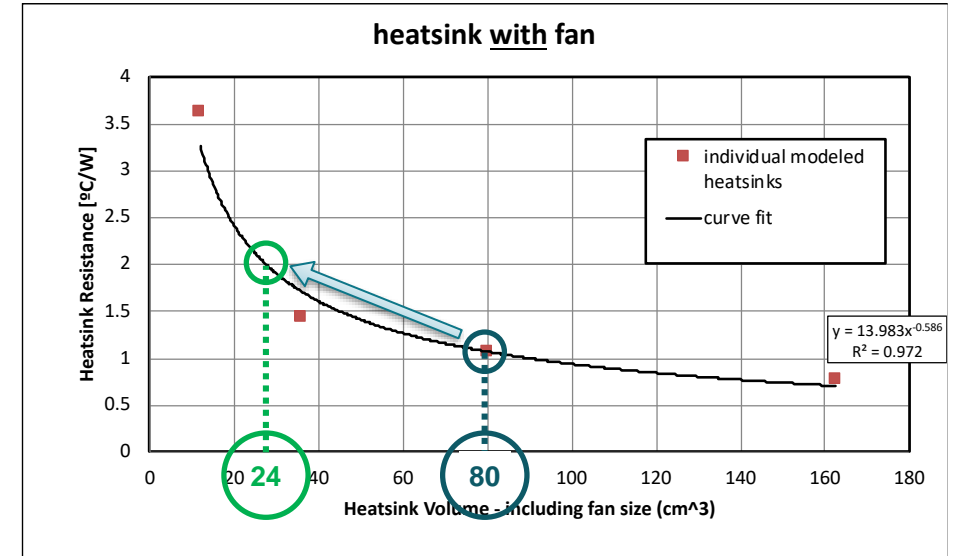
.23 1080p SE | Key features & benefits

Features

- 1080p Full HD resolution
- Up to ~250 lumens brightness
- 60Hz video frame rate

Benefits

- Re-use of existing .23" 1080p optical engines enables **fast time to market**
- **Smaller thermal management size:**
 - LED average power reduced to ½ with lower duty cycle
 - 1/3rd heat sink size (ex, from 10C/W to 20C/W, given duty cycle)
- **Lower thermal management cost:**
 - From heat pipe to extrusion heatsink
 - From extrusion heat sink to smaller extrusion heatsink (lower cost due to less metal used)



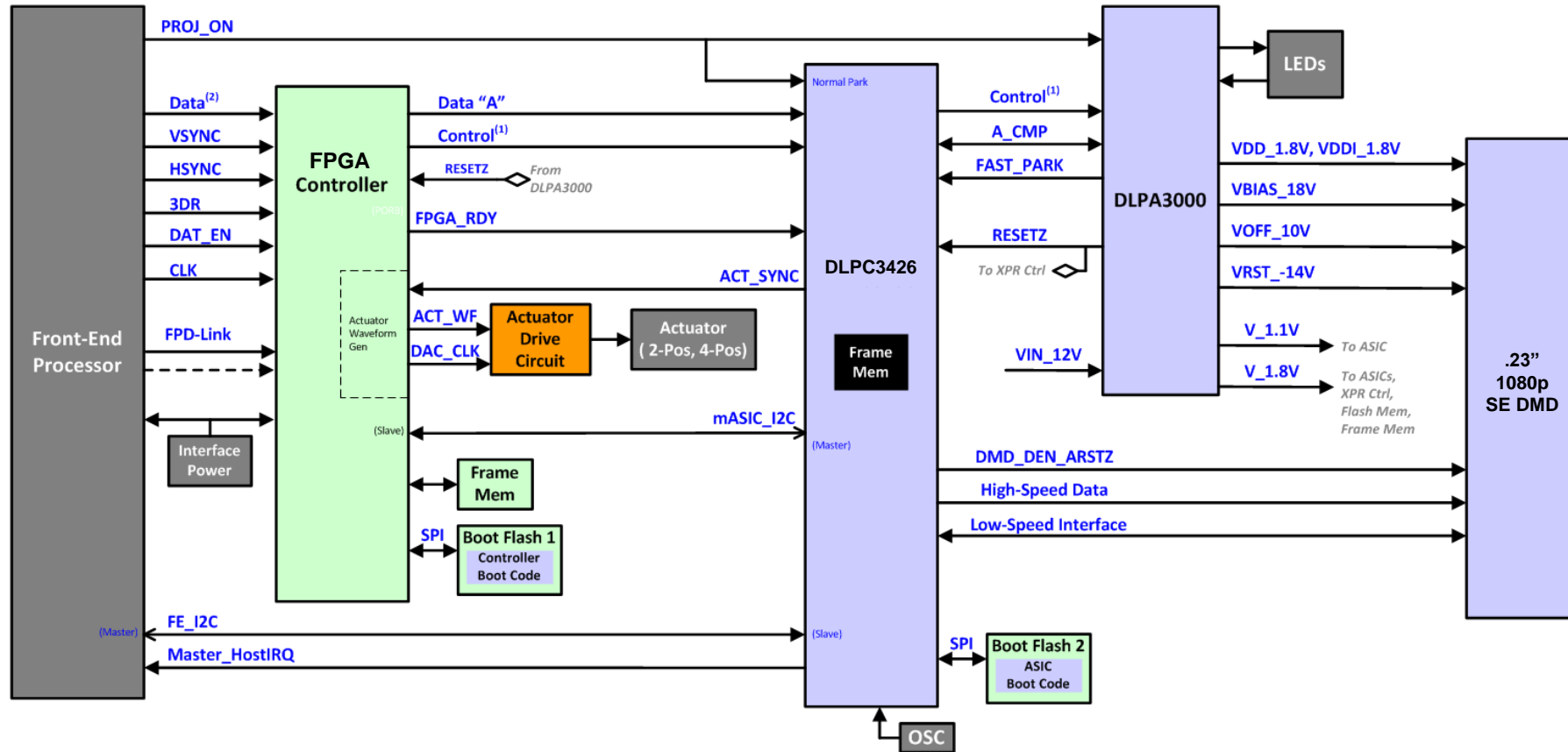
DLP Pico™ | 1080p portfolio comparison

RMB End Product Retail Price Target	USD End Product Retail Price Target	Brightness	Battery-powered products	Chipset
< ¥3,600	< \$499	~1500L		.47 1080p
< ¥3,000	< \$399	~800L	✓	.33 1080p
< ¥2,000	< \$299	~500L	✓	.23 1080p
< ¥1,500	< \$199	~250L	✓	.23 1080p SE

Unique DLP Products value proposition across the portfolio

- ✓ Best image quality - >90% of digital cinemas worldwide based on DLP technology
- ✓ Brightness uniformity and widest color gamut
- ✓ Smallest, most portable form factors
- ✓ Highest optical efficiency; battery operation
- ✓ 100% offset; various throw ratios from 0.2:1 to 3:1
- ✓ Industry proven reliability

.23" 1080p SE | System block diagram



.23" 1080p SE Chipset Components & Binaries

DLP230NPSE .23" 1080p SE DMD
DLPC3426 controller
DLPA3000 PMIC
Controller binaries
FPGA controller binary

Non-DLP Components Specified by TI

AMD/Xilinx FPGA
Flash memory
Frame memory
DMD interposer
4-Pos optical actuator

Reference Designs Provided by TI

Actuator driver circuit
Electronics EVM
DMD mounting concept

Getting started

You can start evaluating this device leveraging the following:

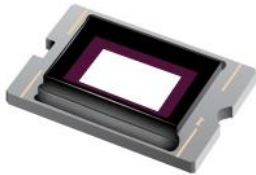
Content type	Content title	Link to content or more details
Learn	DMD datasheet Controller datasheet Getting started with DLP technology application note Optical module specifications application note	https://www.ti.com/lit/ds/symlink/dlp230np.pdf https://www.ti.com/lit/ds/symlink/dlpc3436.pdf https://www.ti.com/lit/an/dlpa059g/dlpa059g.pdf https://www.ti.com/lit/an/dlpa078b/dlpa078b.pdf?ts=1697065932749
Design	DLP230NP / DLPC3436 EE reference design Optical reference design	https://www.ti.com/tool/TIDA-080009 https://www.ti.com/tool/download/DLPC117
Evaluate	DLP LightCrafter™ Display 230NP evaluation module DLP Pico firmware selector	https://www.ti.com/tool/DLPDLCR230NPEVM https://www.ti.com/tool/DLP-PICO-FW-SEL
Find 3 rd party solutions	3 rd party optical module and system integration search tools	https://www.ti.com/tool/DLP-OMM-SEARCH

.47 4K SE | Preview

Enables lower cost 4K UHD DLP Pico™ projectors

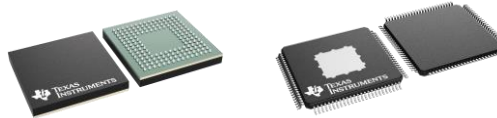
- Leverage existing .47" 4K UHD optical modules and electronics solutions
- Supports RGB LED illumination up to ~750 lumens (based on existing, available RGD LED solutions)
- Target <\$999 retail price 4K UHD DLP Pico™ projectors

.47" DMD DLP471TPSE



- DLP471TP drop-in replacement
- Leverage existing optics

Controller | PMIC DLPC3270 | DLPA3005



- 2D keystone support
- ½ LED power; lower duty cycle
- Up to 16A LED current

Smallest, most affordable 4K UHD DLP chipset

- **Size**
 - Smallest form factors
 - ~1/3rd heatsink size
- **BOM affordability**
 - Lower priced optical engine
 - Lower priced chipset

Availability: DMD and controller RTM by end of 2023

Visit www.ti.com/npu

For more information on the New Product Update
series, calendar and archived recordings



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