



Appliance displays have traditionally been limited to monochrome alphanumeric displays, like those on microwaves and ovens. Some newer appliances integrate displays with higher resolutions and full color. Appliance manufacturers seeking to differentiate their products should consider projection displays that can create an image on virtually any surface.

Features and Benefits

On-demand displays on a variety of surfaces	Project on countertops, stovetops, cutting boards, transparent glass, floors, and more - displays in helpful places when you want them, and invisible when off
High optical efficiency/low power	Brighter displays given power and size constraints
High contrast	On/off contrast ratio of >1000:1 are possible, dependent on optical design tradeoffs, which enables more vivid images and lower black levels
Compact projection systems	Digital micromirror device (DMD) arrays as small as 0.16" diagonal enable extremely compact projection systems that can fit in just about any product



Recommended Chipsets for Appliances

The DLP® Pico chipset portfolio offers several solutions. The best fit will depend on target size, power, & performance level of the display system.

For smaller, lower brightness systems, DLP Pico chipsets that include a 0.16" or 0.2"-class micromirror array diagonal are recommended. These solutions enable extremely compact optical systems and the lowest possible power consumption.

For higher performance display systems, the 0.3" and 0.4"-class of DMDs enable higher brightness levels.

Table 1. DLP Pico Chipsets for Appliances

Smallest Size, Lowest Power	Small Size, High Resolution	High Brightness, High Resolution
DLP160AP (180p)	DLP230KP (720p)	DLP3010 (720p)
DLP160CP (360p)	DLP230NP (1080p)	DLP3310 (1080p)
DLP2010 (480p)		DLP4710 (1080p)
DLP230GP (540p)		

Brightness and DMD sizes for image sizes

Image Diagonal (inches)	Brightness Output (Lumens) ⁽¹⁾	DMD Diagonal (inches)
5"	10	≥0.16"
10"	45	
15"	100	≥0.2"
20"	175	
25"	300	≥0.23"
30"	400	≥0.3"

(1) Assumes 400 nits display. Consider application typical lighting environment.

Example Product Concepts

- Refrigerator glass window display
- Countertop, cooktop, or backsplash display
- Appliance floor display
- Washer/dryer door display
- Augmented reality cooking display

Additional Technical Resources

- Watch [Getting started with DLP display technology](#)
- Watch [DLP technology for major appliance displays](#) training
- Contact [Optical engine suppliers](#)
- Order [DLP Pico evaluation modules \(EVMs\)](#)
- Download [DLP Pico reference designs](#)

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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
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