



**Optoma**

**PROJECTOR BUYING GUIDE**

## Why choose a projector?

### Low cost, Big fun!

In terms of ££ per inches nothing can match a projector for sheer size and fun.

### Easy plug and play

Quick and easy to set up a projector, can simply be connected to:

Source devices:

DVD or Blu-ray players™

Sky / Set-top boxes

Games consoles

PC / Laptops

Wireless streaming devices:

Google Chromecast®

Amazon Fire Stick®

Apple TV®

Great for external meetings and impromptu movie nights at friends.

Spectacular for sports | Fantastic for films | Perfect presentations

### A cinema-feel

Most of us don't have the space for a dedicated home cinema room and want the 'cinema feel' in our living room. Optoma projectors can give you this! And they can accept high definition sources at 24 frames per second to display movies exactly as the director intended.

### Great for gaming

The low latency in Optoma projectors give lightning response times for gaming, leaving you to simply focus on winning.

### Total immersion

Filling your field of vision with a super-size screen immerses you in the action – making you feel like you are actually there!



YOU CAN GO BIG, REALLY BIG





## Why choose Optoma?

### Established in Europe for almost two decades

Optoma is a world leading designer and manufacturer of projection and audio products for business, education, professional audio/video and home entertainment.



GT5500+ Ultra-Short  
Throw Projector  
100 inch image from  
30cm away



Optoma is the market leading brand for 1080p projectors

Its range includes 3D glasses, screens, mounts, wireless dongles and other accessories for your projector.

A technology innovator

Optoma has developed both LED and Ultra Short Throw home cinema projectors. No other projector manufacturer

offers these within its home range. Quite simply, Optoma has the best and widest range of home cinema projectors in the market.

Optoma projectors combine superior image processing technologies with exceptional engineering and innovation to deliver stunning crystal clear images with ultimate reliability.

They are powered by

DLP® technology, pioneered by Texas Instruments. This uses millions of mirrors to produce high quality imagery which does not suffer colour degradation over time, as sometimes experienced in other projector technologies.



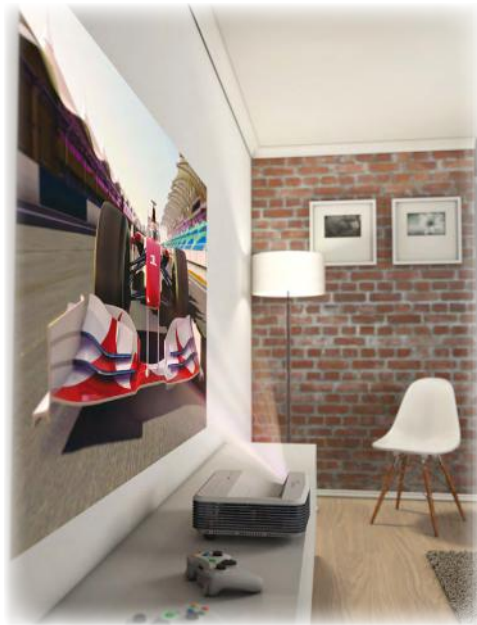


## Which projector?

Asking yourself a few key questions will quickly hone down the right projector for you.

**Home entertainment:** You will need a high resolution projector to ensure the contrast and picture quality is crystal clear.

**Business:** Does it need to be light and portable for occasional business use and off-site meetings or will it be installed in the boardroom? This will help you choose between mobile, ultra-mobile, desktop or larger projectors for installation.



## What resolution do I need?

Resolution is simply the number of pixels in an image. The higher number of pixels, the greater the resolution and the better the image quality will be. Please see below the ratio of pixels and the aspect ratio depending on the resolution.

Most projectors these days are at least XGA (1024 x 768) resolution - ideal for business PowerPoint presentations.

In the home nearly all projectors are at least HD Ready (1280 x 800) with home cinema setups typically being Full HD 1080p (1920 x 1080) and now 4K UHD (3840 x 2160) resolutions.

Optoma 4K Ultra HD provides four times as many pixels as Full HD 1080p. That's 8.3 million on screen pixels (3840 x 2160) bringing greater realism to every scene with increased depth and light and shadow detail for a truly immersive experience.



## Resolutions and their aspect ratios

**UHD** (3840 x 2160) pixels – 16:9

**WUXGA** (1920x1200) pixels – 16:10

**Full HD 1080p** (1920 x 1080) pixels – 16:9

**WXGA or HD Ready** (1280 x 800) pixels – 16:10

**XGA** (1024 x 768) pixels – 4:3

General rule of thumb is - the bigger the screen, the higher resolution you will ideally need



How far from the screen will you install the projector?

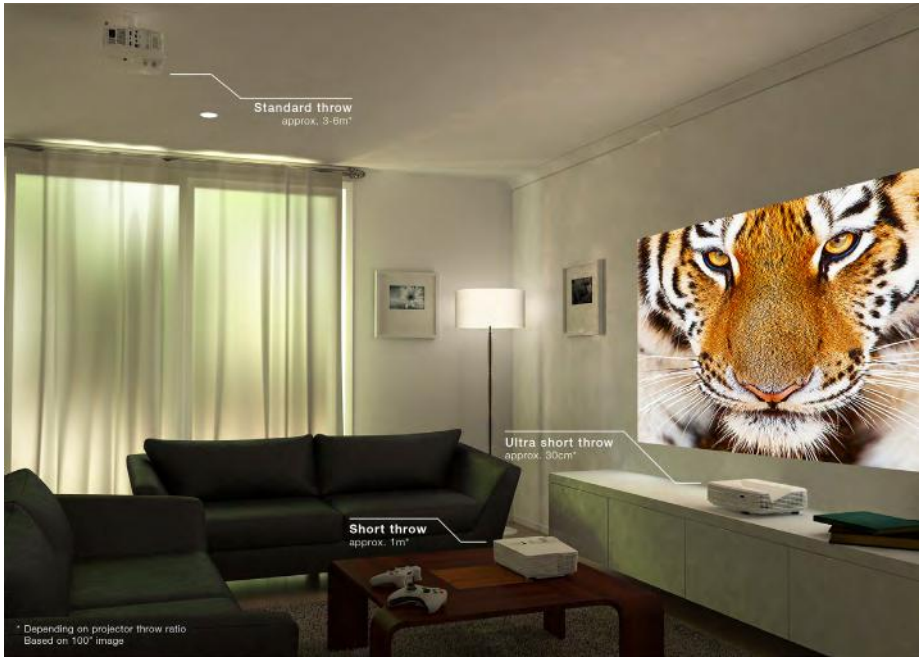
Where you would like to place the projector is an important part of choosing the right projector for you. Ultra-short throw projectors can be positioned very close to the wall and short-throw projectors can be placed on a coffee table and still provide a big image on the screen. The benefits here are no shadows and they tend to be brighter by being closer to the screen or wall. Normal or standard throw projectors will sit further back and tend to mounted on the ceiling and above/behind where you would be seated.

Throw ratio

Once you know where you want to place the projector, a projectors throw will tell you if it can do the job. The projectors throw ratio can let you know the following:

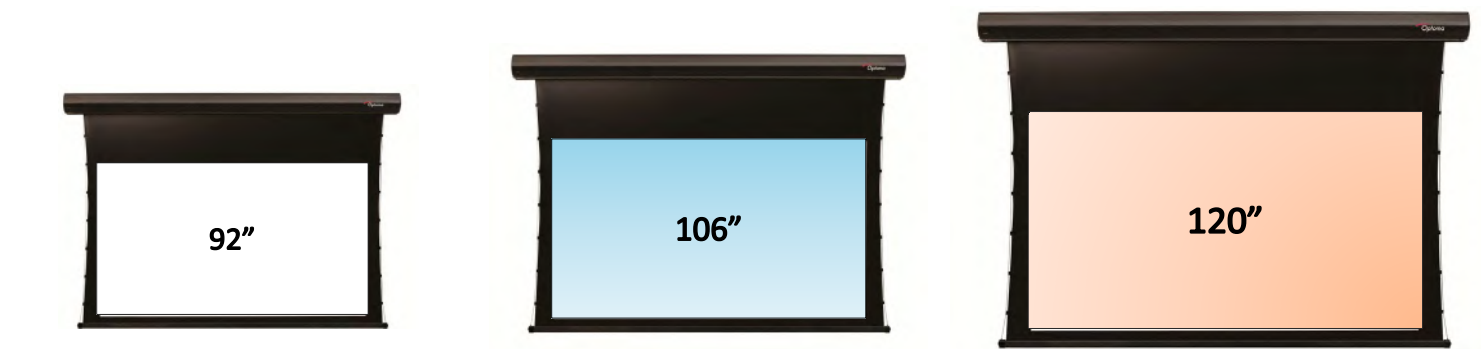
- 1. How far the projector will be from the screen (throw distance)
- 2. How wide the screen can be

For example, if your screen is 2m wide and the projector is 4m away the throw is twice the width. This is shown 2:1 in the specifications.



Typical projection distances

- Ultra-short throw ratio tends to be: 0.25:1 (GT5500+)
- Short-throw ratio tends to be: 0.5:1 (GT1080Darbee)
- Standard throw ratio tends to be from: 1.4 -2:1 (HD27, HD50, UHD60, UHD65)



Screen size (diagonal inches)	92”		106”		120”	
Image width (cms)	203		234		266	
Projector model	Projection distance (metres)					
	Min	Max	Min	Max	Min	Max
GT5000+ / GT5500+	0.51		0.59		0.67	
GT1080E / GT1080Darbee	0.99		1.14		1.30	
HD27 / HD28DSE	3.01	3.30	3.47	3.80	3.93	4.3
HD50	2.83	4.26	3.25	4.91	3.70	5.56
UHD60 / UHD65	2.83	4.51	3.25	5.19	3.70	5.91

## How bright is your room?

Whilst throw ratio is very important, brightness is also an important factor to bear in mind. Optoma projectors offer amazing contrast and detail but the ambient light in the room will affect performance.



Here are some examples of recommended lumens:

- A cinema room with the lights turned off or very low, curtains closed on 2.5m screen: 2,000 lumens
- A living room with some lights on and 2m wide screen: 3,000 lumens
- A lecture hall requiring a 3m wide screen with moderate amounts of ambient light: 5,000 lumens

Projector brightness is normally measured in:  
**ANSI lumens**



DLP® is a technology developed by Texas Instruments that has revolutionised projection. At the heart of every Optoma projector is a DLP® chip.

This chip has millions of microscopic mirrors, each measuring less than one-fifth the width of a human hair and generally corresponds to one pixel on the final projected image.

### How does DLP® work?

A spinning colour wheel made up of coloured segments is placed between the light source and DMD chip. The mirrors are then turned on and off perfectly in time with the right colour - this allows us to display a total of 16.7 million different colours creating a fantastically vibrant, life-like picture.

Optoma is so confident the colour quality of its projectors will remain as good as the day it is bought, it guarantees this for five years.



All Optoma projectors use DLP® technology

## What is DLP®?





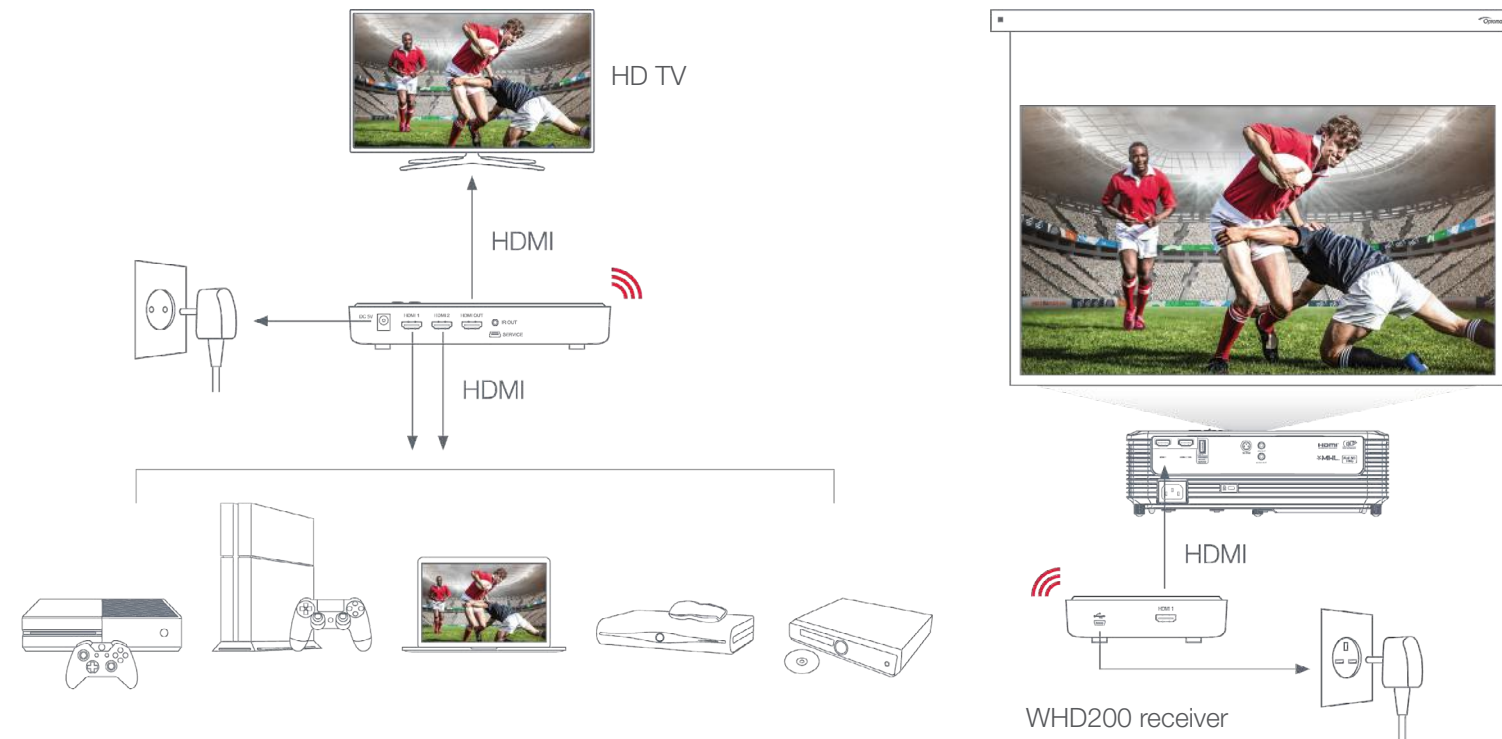
## WHD200 - Full HD 1080p Wireless System

This wireless HDMI system allows movie fans, TV buffs and keen gamers to experience 1080p 2D and 3D image quality on a big screen, without having to run cables across a room.

The system consists of a small receiver which is connected to the projector and an HDMI transmitter with 2x HDMI outputs to plug into source (i.e. Sky box and BluRay player). The device has been designed to be as straightforward as possible with easy set-up auto-detection. And for added convenience, two sources can be simultaneously connected to the WHD200 and a second display can also be connected using the HDMI out port.

Your existing TV can still receive the same signal and it will even control your player/sky box from another room via their remote control.

**Stream wirelessly up to 20m**





## Screens

Optoma screens are manufactured to the highest standard build quality and include electric and manual screens (pull up or pull down) in a range of sizes to suit any meeting room or home.

## 3D glasses

Optoma offers two main types of Active 3D glasses. Both are bright, stylish and lightweight and will fit over most prescription glasses.

ZD302 incorporate DLP Link™ technology which use line of sight to the screen to produce a 3D image.

ZF2300 use Radio Frequency technology to sync with the projector. You will need a ZF2300 starter kit that includes the emitter and a pair of glasses.



**Get the full home cinema experience**





# Dos

- Pick the perfect image size you ideally want to have on your wall or screen.
- Work out where you want the projector to be in the room.
- Establish what you want to use the projector for and how much light will be in the room. Is there a way to control the light?
- Think about cabling and power and if you would like wireless video instead.
- Consider a site survey and professional installation for total peace of mind.

# Don'ts

- Forget to centre the projector. If this is not possible look for a projector with horizontal lens shift or geometric correction such as Optoma's HD28DSE.
- Mount the projector on top of a shelf when near the ceiling. If using a shelf install the projector under the shelf rather than above - ideally with a universal mount.
- Forget audio as part of the solution. If you are using wireless video, ensure you can run the audio separately from the source to the speakers.
- Be afraid to contact your local store if you have any questions or if we can help.

Understanding these dos and don'ts will help you choose the perfect projector for your space.



Amazing colour technology offers vibrant, accurate and long-lasting colour performance to match any application or environment - whether it is for business, education or home entertainment.

For more information visit [optoma.co.uk/amazing-colour](http://optoma.co.uk/amazing-colour)



Optoma genuine lamp modules are designed specifically and uniquely for Optoma projectors.

To read more please visit [www.optoma.co.uk](http://www.optoma.co.uk)



# Final checklist

- ☐ Work out your screen size, measure the size of the wall and decide what would be the best image for you.
- ☐ What distance do you have to mount the projector. Do you require ultra short throw, short throw or a standard throw?
- ☐ Is the room in a bright or dark environment? How many lumens do you need?
- ☐ Have you thought about accessories: projector mount, cables, home cinema system etc.?



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**4K: (see UHD 4K)**

**Ambient Light:** Any light in the viewing room created by a source other than the projector or screen.

**ANSI Lumens:** ANSI lumens give the most accurate measurement of the overall brightness of a projector. Because the centre of a projected image is brighter than its corners, ANSI lumens are calculated by dividing a square meter image into 9 equal rectangles, measuring the brightness of each rectangle, and averaging these nine points.

**Aspect Ratio:** The ratio of image width to image height.

**Auto Balance:** A system for detecting errors in colour balance in white and black areas of the picture and automatically adjusting the white and black levels of both the red and blue signals as needed for correction.

**Brightness:** Overall light output from an image. While a brightness control can make an image brighter, it is best used to better define the black level of the image.

**BrilliantColor™:** Advanced colour processing for bright, vibrant, deep saturated colour for lifelike reproduction.

**Colour Saturation:** Measure of colour purity. Highly saturated colours emit a very narrow band of wavelengths of light instead of the broader spectrum of frequencies emitted from mixed colours. A display with good saturation will look vibrant.

**Colour Wheel:** Rotating wheel with three or more translucent colour filters used to display sequential colour in a DLP projector.

**Contrast Ratio:** The ratio between white and black. The larger the contrast ratio the greater the ability of a projector to show subtle colour details and tolerate ambient room light.

**DLP:** The commercial name for the display technology from Texas Instruments that is within each Optoma projector. This uses millions of mirrors to produce high quality imagery which does not suffer colour degradation over time, as sometimes experienced in other projector technologies.

**Full HD:** High-Definition, high resolution 1080p (1920 x 1080 pixels)

**HD Ready:** WXGA resolution (1280 x 800 pixels).

**HDMI:** High Definition Multimedia Interface is an uncompressed, all-digital audio/video interface that supports audio/video sources such as a set-top box, DVD player, A/V receiver, and projectors.

**High Dynamic Range (HDR):** HDR gives better contrast, greater brightness levels and a wider colour palette. It allows for more natural, true-to-life colours that are closer to how we see them in real life.

**Hz:** Hertz. Also called cycles per second and in video displays is the rate at which an image is refreshed.

**Invert Image:** Invert image flips the image from top to bottom, to allow for ceiling mounting a projector upside down.

**Lamp life:** The average expected life of a lamp used in a particular projector.

**Latency:** The time between a device being requested to do something and the start of the device actually doing it. Important in gaming, the shorter the latency the better.

**LED:** Light Emitting Diode. A light generating technology that uses a semiconductor diode that emits monochromatic (single colour) light when charged.

**Lens Shift:** This allows the optical lens to be physically shifted up and down (vertical) and/or left and right (horizontal). Some lens shift mechanisms are motorised. Lens shift can avoid the need for keystone correction.

**Long Throw Lens:** A long throw lens allows greater distance between the projector and the screen while being able to maintain the image size and brightness of a shorter throw lens for any given projector.

**Lumens:** A measurement unit of total illumination. Projector light output is measured in ANSI lumens. A projector with a higher number will produce a brighter image for a given image size. See ANSI Lumens.

**Maximum Distance:** Sometimes used to refer to the distance from the screen that a projector can focus the image.

**Native Aspect Ratio:** All Optoma projectors support multiple aspect ratios. Images shown in the projector's native aspect ratio will use the entire resolution of the display and achieve maximum brightness. Images shown in other than native aspect ratio will always have less resolution and less brightness than images shown in native aspect ratio.

**Native Resolution:** Native Resolution is the number of physical pixels in a display device. The higher the number of pixels, the greater the resolution and the better the image quality will be: Full HD 1080p (1920 x 1080 pixels) and HD Ready (1280 x 800 pixels).

**Power Zoom:** A zoom lens that is driven by a motor and controlled from the projector's control panel and/or remote control.

**Resolution:** See Native Resolution above.

**Saturation:** Saturation is a measure of colour intensity. In the absence of saturation the colour hue is a shade of grey. A highly saturated hue has a vivid, intense colour, while a less saturated hue appears more muted and grey.

**Short Throw Lens:** A lens designed to project the largest possible image from a short distance.

**SVGA:** SVGA is a display resolution measuring 800 x 600 pixels. SVGA has a 4:3 aspect ratio.

**Throw Ratio:** The ratio between the projection distance and image width. Normally quoted as a range as most projectors have a zoom facility.

**UHD 4K:** Display resolution 3840 x 2160 pixels - 8.3 million on screen pixels (four times as many as Full HD 1080p) bringing greater realism to every scene with increased depth and light and shadow detail.

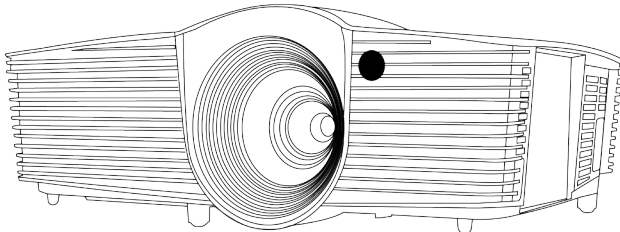
**WXGA:** Also called HD Ready display resolution 1280 x 800 pixels.

**XGA:** Display resolution 1024 x 768.

**XPR:** A fast-switching technology via dual-position precision optical actuator with state-of-the-art image processing to project 8.3 million distinct pixels for each frame.

**Zoom:** A lens with a variable focal length providing the ability to adjust the size of a projected image without moving the projector

**Zoom Ratio:** The ratio between the smallest and largest image a lens can projector from a fixed distance.







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