# Projector Throw Ratio, Aspect Ratio & Lumen Matrix

> **Companion Reference Sheet for:** Golf Simulator Projector Brightness: Match Lumens to Light
> Save this PDF to your phone or print a copy for field reference. Verify room measurements and manufacturer specs before buying or mounting equipment.

## Key Takeaways

- **Start with screen area.** The same projector output spreads across a larger image, reducing brightness per square foot.
- **Compare ANSI lumens, not vague lumen claims.** ANSI lumens identify a more comparable measurement method, but a projector's selected picture mode and zoom position can deliver less light than its headline rating.
- **Control light at the impact screen.** Daylight and reflections raise the apparent black level, making the image look washed out even when the projector is bright.
- **Light the hitting area separately.** Aim fixtures at the mat and away from the screen to support safe movement without washing out the image.
- **Check placement and shadows.** Throw ratio, mounting distance, and the golfer's position determine whether the projector can fill the screen without casting avoidable shadows.
- **Judge the whole picture.** Brightness matters alongside contrast, color accuracy, focus, and resolution.

## Estimate On Screen Brightness from Lumens and Screen Area

| 16:9 image width × height | Image area | Idealized output for 20 fL at gain 1.0 |
|---|---|---|
| 10 × 5.625 feet | 56.25 square feet | About 1,125 lumens |
| 12 × 6.75 feet | 81 square feet | About 1,620 lumens |
| 14 × 7.875 feet | 110.25 square feet | About 2,205 lumens |

## Match Room Lighting to the Image You Want

| Image area | Estimated output at gain 1.0 | Estimated output at gain 1.2 |
|---|---|---|
| 56.25 square feet | 1,125 lumens | About 938 lumens |
| 81 square feet | 1,620 lumens | 1,350 lumens |
| 110.25 square feet | 2,205 lumens | About 1,838 lumens |

## Projector Brightness and Room Lighting Checklist

☐ **Measure the screen.** Record width and height, calculate area in square feet, and estimate foot-lamberts using actual projector output and screen gain.

☐ **Find light sources and reflections.** Identify daylight, fixtures, and bright surfaces that send light onto the screen, then reduce those sources before relying on more projector output.

☐ **Confirm the projector position.** Check throw ratio and mounting distance to fill the image without putting the projector in the golfer's swing or creating avoidable shadows.

☐ **Test the finished picture.** Use the planned resolution and picture mode with the hitting area lit as it will be during play, then judge contrast, color, detail, and brightness.

☐ **Keep tracking requirements distinct.** Follow the manufacturer's setup conditions for the launch monitor model instead of treating projector brightness as a tracking specification.

See also: golf simulator room dimensions.

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Published by Launch Monitor Pro (launchmonitorpro.com), a publication of Viking Trading Group LLC.

Source URL: https://launchmonitorpro.com/golf-simulator-projector-brightness-match-lumens-to-light/