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Trade Show and Conference

Designers Lighting Forum

Designing Light for Video Conference

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Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.

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Learning Objectives

At the end of this course, participants will be able to:

1. Identify the collaborative process for creating functional and aesthetic spaces for interpersonal video communication.
2. Describe the design principles that apply to video conferencing
3. Utilize design skills to evaluate the importance of light reflectance values from people and objects, luminance versus illuminance.
4. Evaluate video camera and display criteria, the technical accommodation between capture and display, contrast ratios, and lighting control.

Introduction

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Key Principles

1. Understanding the space
2. Contrast Ratio
3. Color Temperature

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Key Principles

4. White balance
5. Luminance vs. illuminance
6. Vertical luminance

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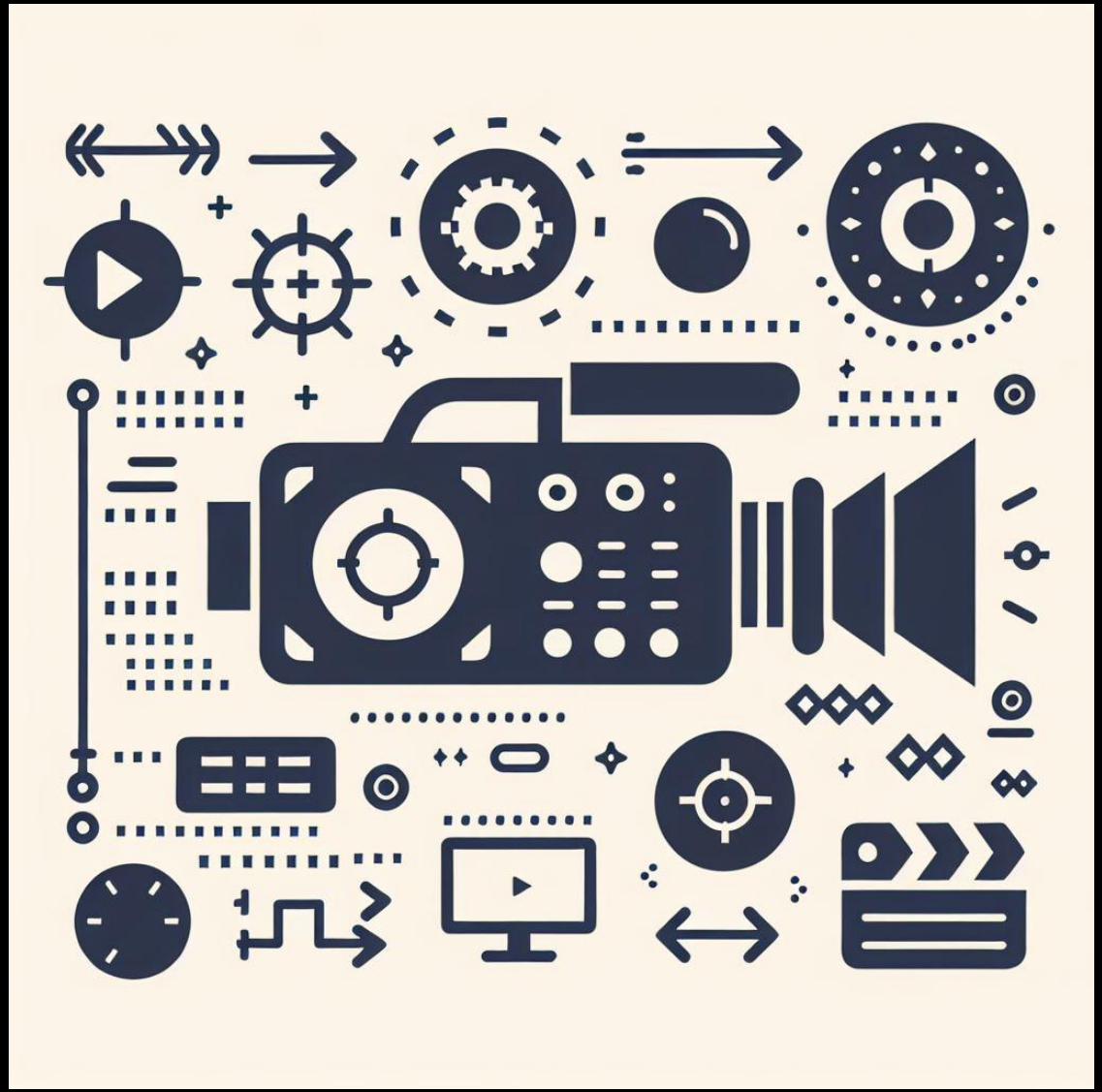

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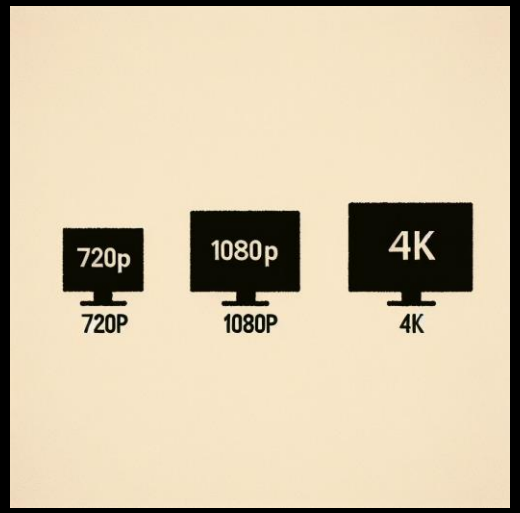
Technical Considerations

BASIC FEATURES OF VIDEO CAMERAS

1. Resolution (pixels)



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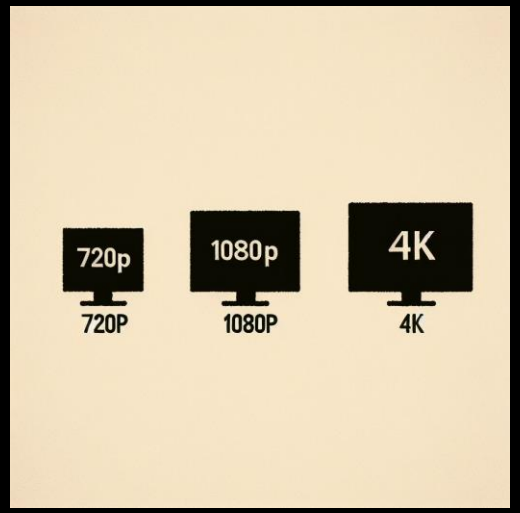
Technical Considerations

BASIC FEATURES OF VIDEO CAMERAS

1. Resolution (pixels)
2. Lens



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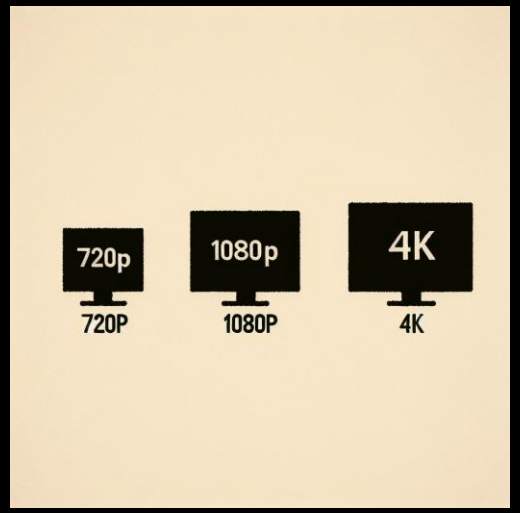
Technical Considerations

BASIC FEATURES OF VIDEO CAMERAS

1. Resolution (pixels)
2. Lens
3. ISO



- ISO 100 (low ISO)
- ISO 200.
- ISO 400.
- ISO 800.
- ISO 1600.
- ISO 3200.
- ISO 6400 (high ISO)

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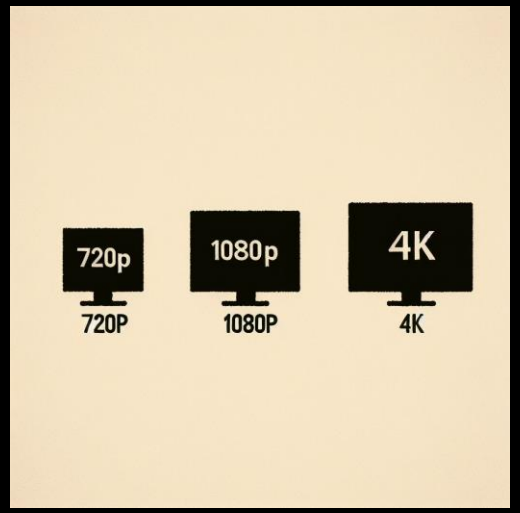
Technical Considerations

BASIC FEATURES OF VIDEO CAMERAS

1. Resolution (pixels)
2. Lens
3. ISO
4. Frame Rate (Frames Per Second, FPS)



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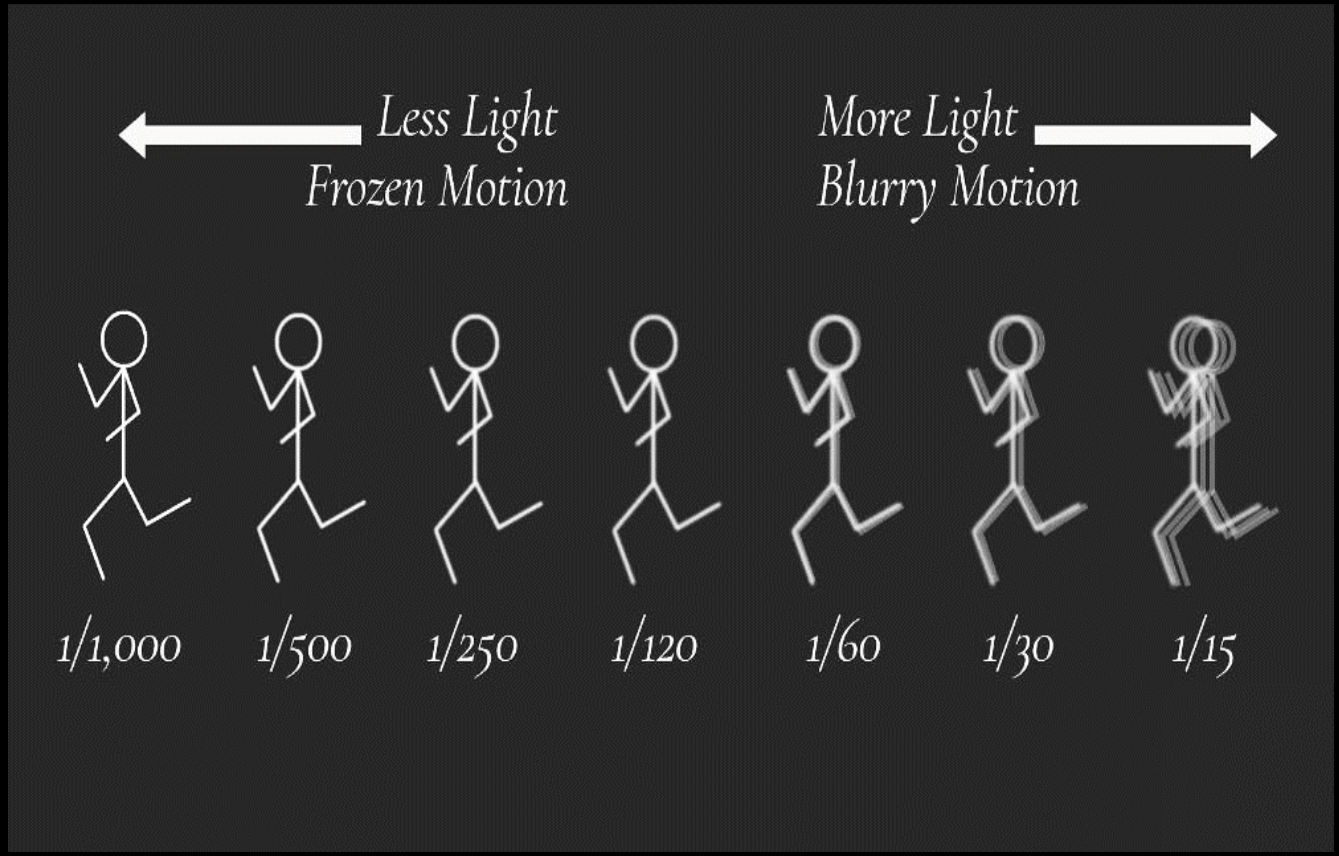
Technical Considerations

BASIC FEATURES OF VIDEO CAMERAS

1. Resolution (pixels)
2. Lens
3. ISO
4. Frame Rate (Frames Per Second, FPS)
5. Shutter Speed



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Technical Considerations

BASIC FEATURES OF VIDEO CAMERAS

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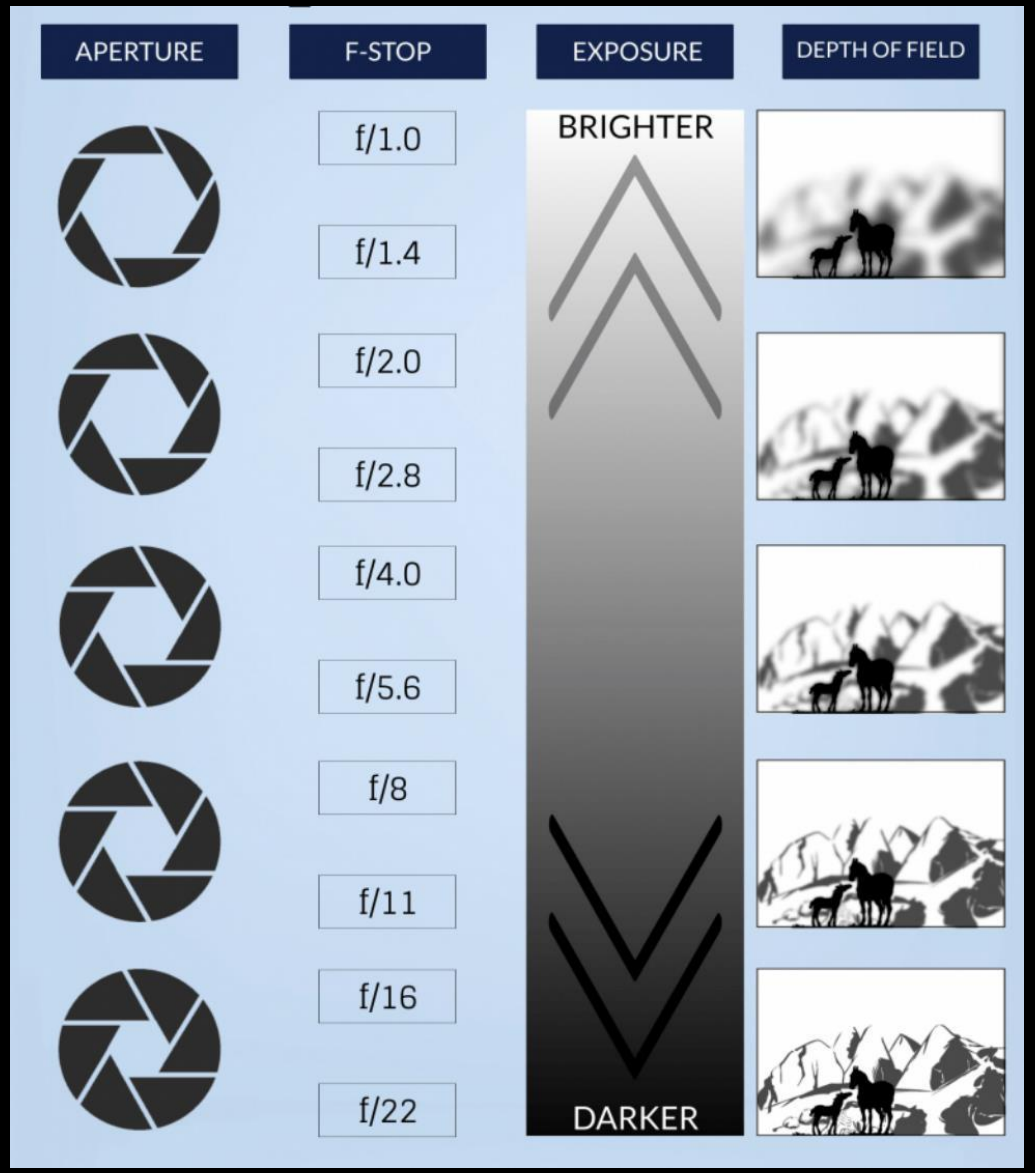
2. Lens
3. ISO
4. Frame Rate (Frames Per Second, FPS)
5. Shutter Speed
6. Aperture (F-Stop)



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4. Frame Rate (Frames Per Second, FPS)
5. Shutter Speed
6. Aperture (F-Stop)
7. White Balance


ISO: 100
F-STOP: f/25
SHUTTER: 8"
WB: INCANDESCENT
SOURCE: 3000K


ISO: 100
F-STOP: f/25
SHUTTER: 6"
WB: DAYLIGHT
SOURCE: 5600K


ISO: 100
F-STOP: f/25
SHUTTER: 8"
WB: DAYLIGHT
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ISO: 100
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Technical Considerations

BASIC FEATURES OF VIDEO CAMERAS

1. Resolution (pixels)
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4. Frame Rate (Frames Per Second, FPS)
5. Shutter Speed
6. Aperture (F-stop)
7. White Balance
8. AI-powered features & Video Analytics

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Technical Considerations

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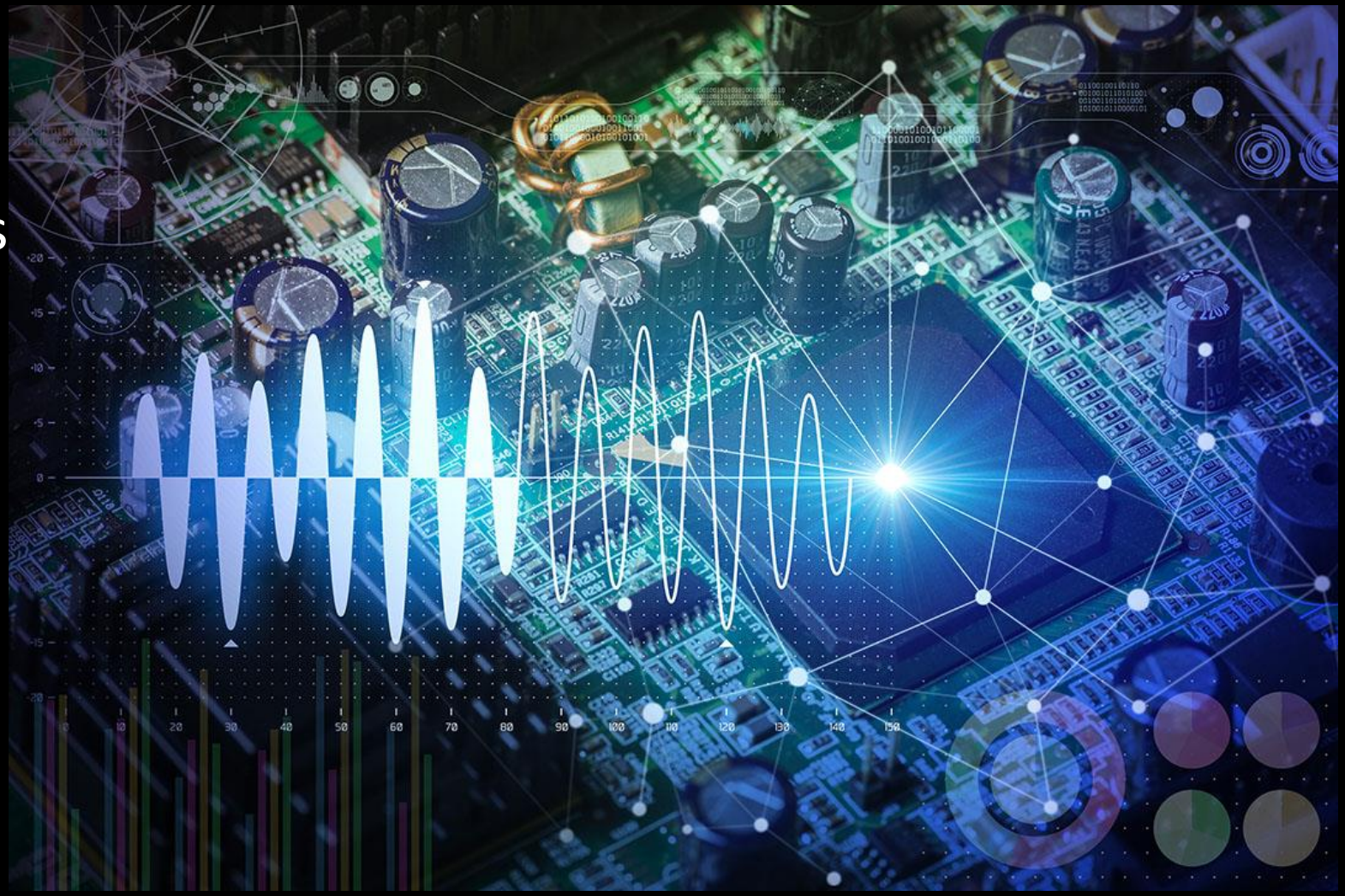

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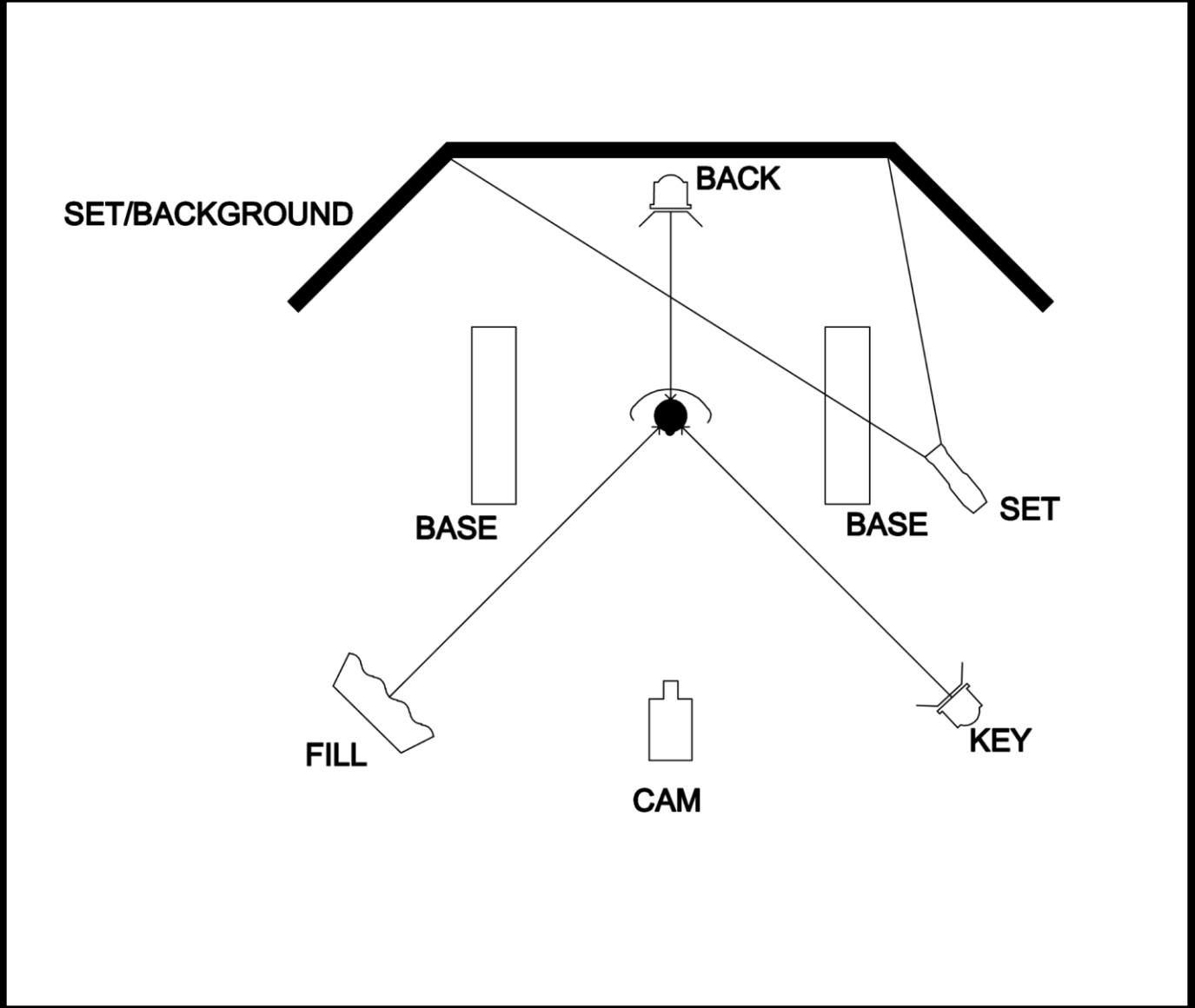
Types of Lighting for TV Studio



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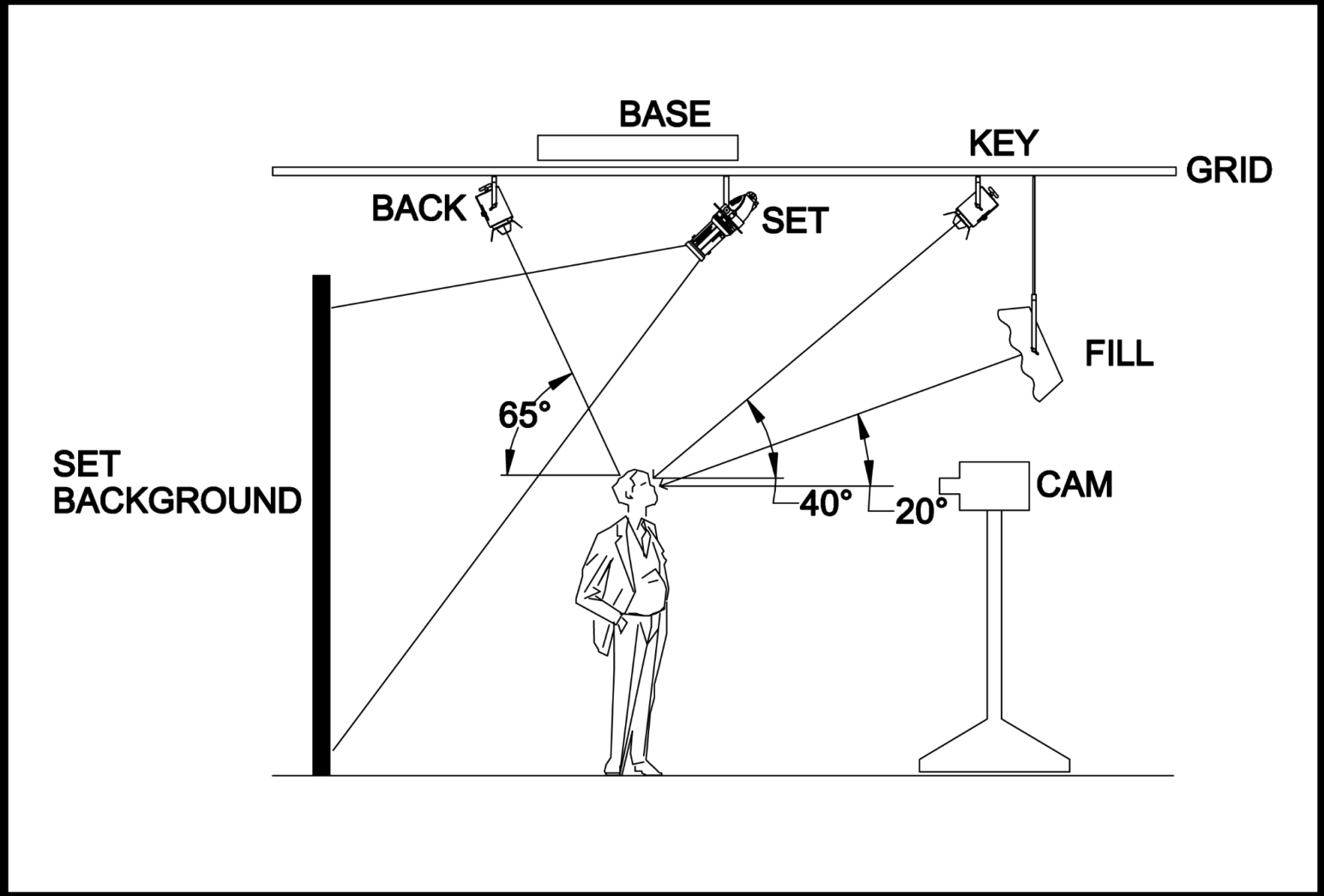

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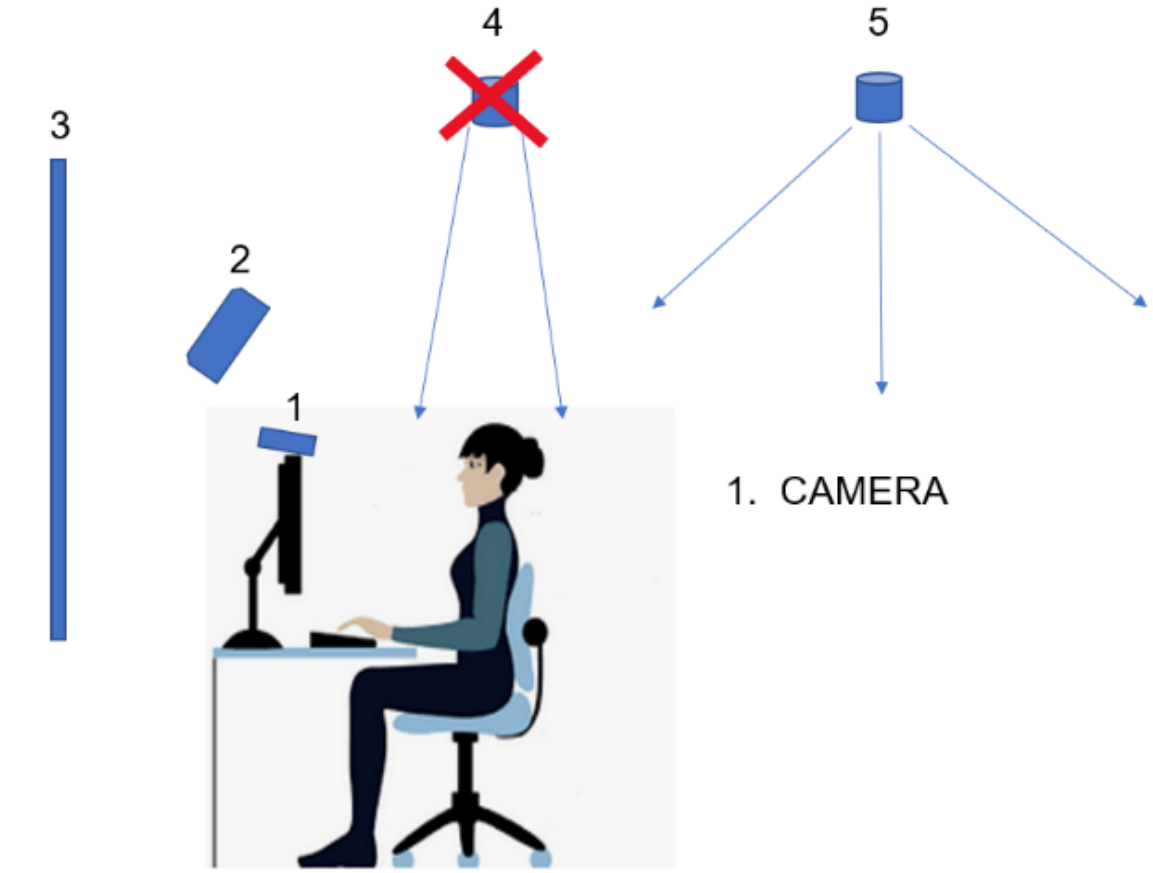
7. Home Office Setup



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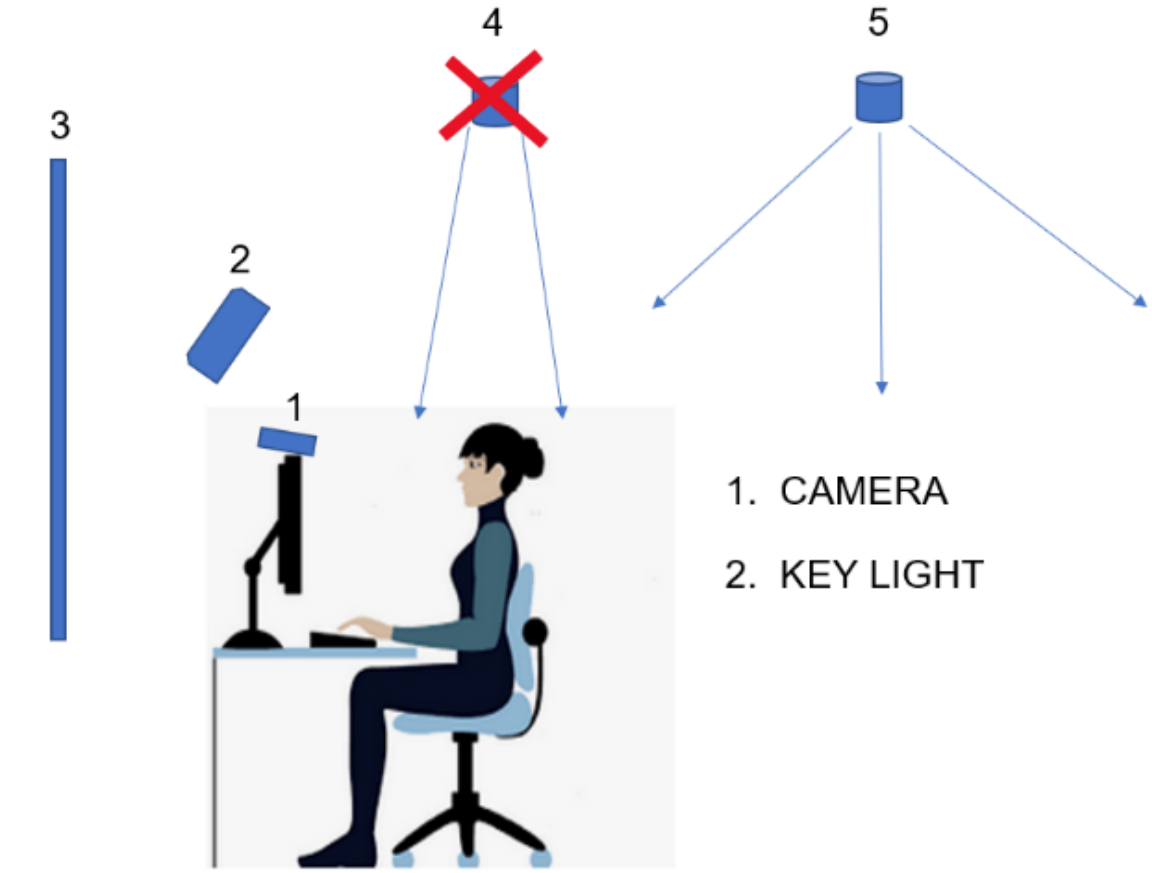

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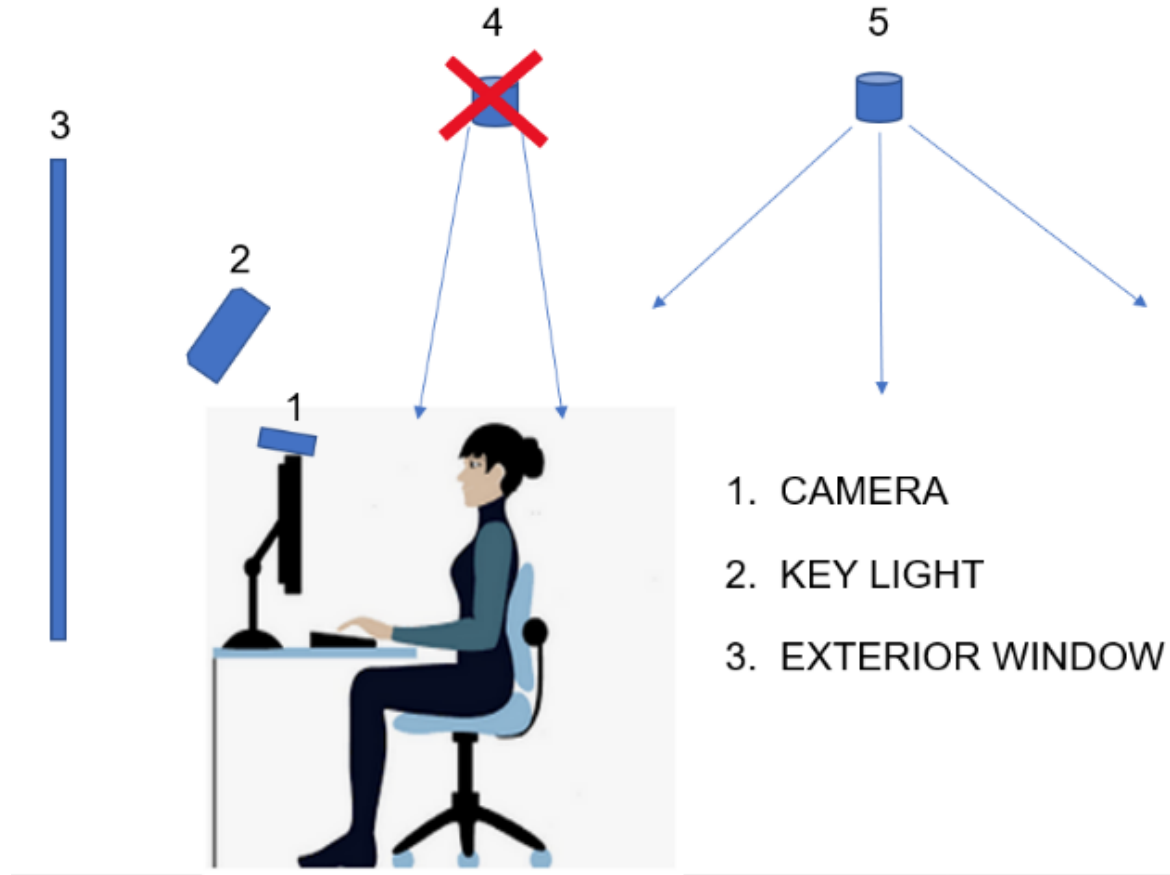

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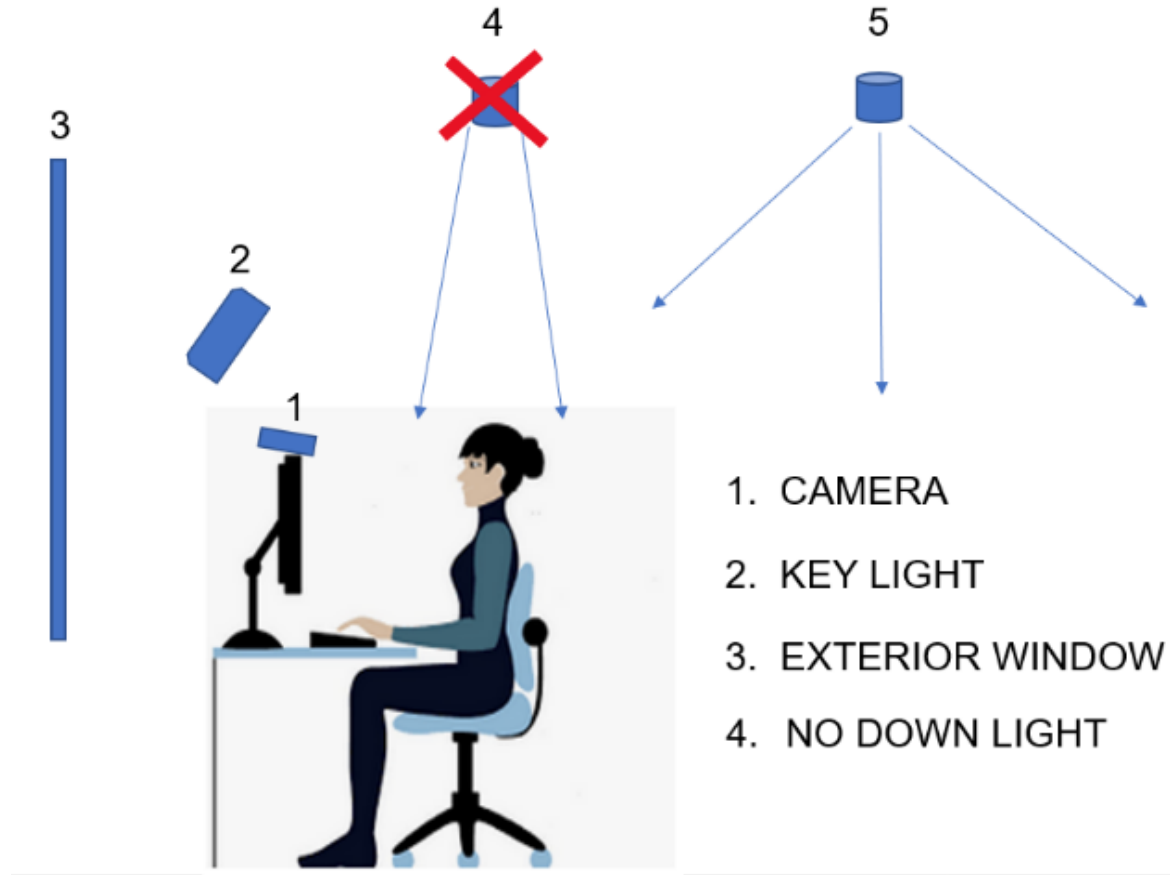

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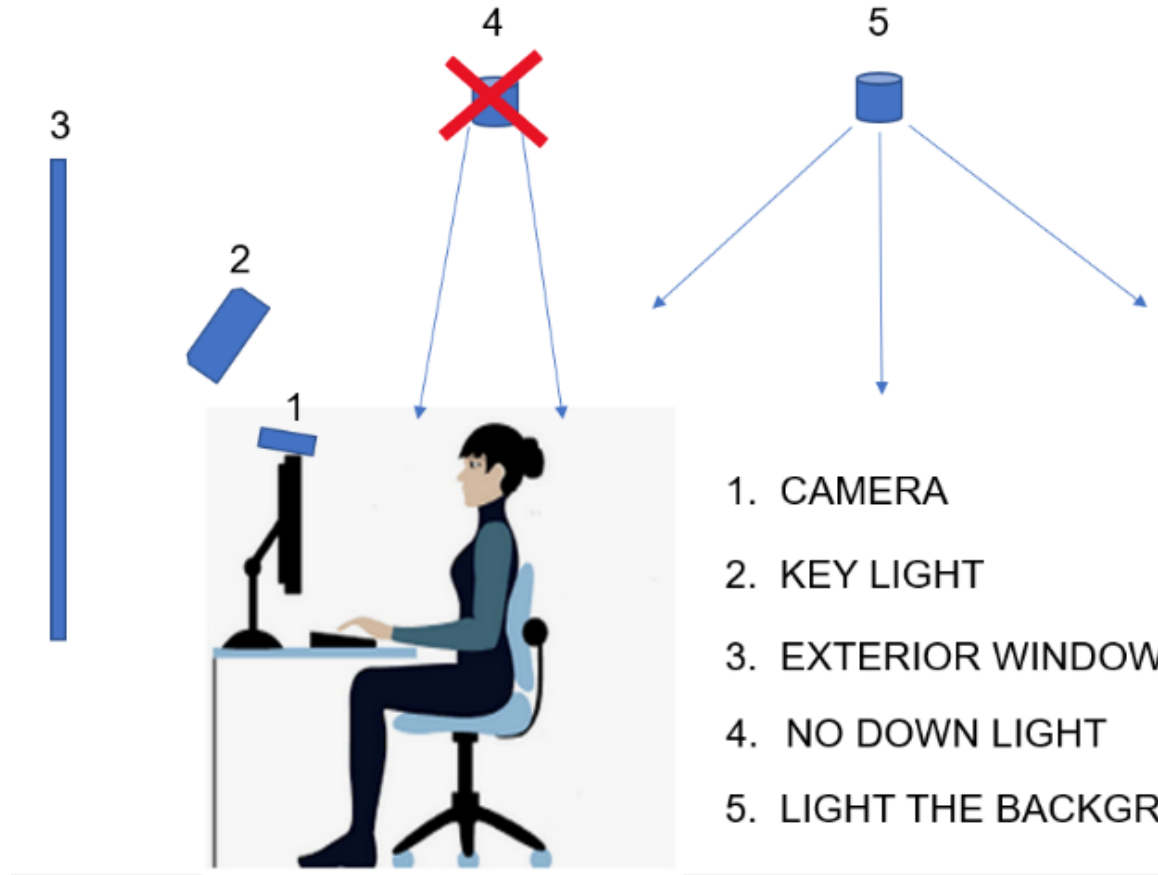

1. CAMERA
2. KEY LIGHT
3. EXTERIOR WINDOW
4. NO DOWN LIGHT
5. LIGHT THE BACKGROUND & BASE

Key Considerations

PERMANENT INSTALLATIONS

1. Layout of the space
2. Where are the seats? Where will subjects/participants be located?
3. One camera or multiple? Where are they?
4. What kind of field of view will the camera(s) have? A wide shot showing the whole room and all participants at once? Closer shots to focus more on one participant at a time?
5. Where are the displays?

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Designing the Lighting

PERMANENT INSTALLATIONS

Key Considerations:

2. Finishes
    - What color finishes on walls, ceiling, furniture?
    - Are there any specular surfaces like windows, glossy desktops, or whiteboards? Where are they?


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Designing the Lighting

PERMANENT INSTALLATIONS

Key Considerations:

3. Lighting Equipment and Layout
    - Standard Lighting zones like general/ambient and task
    - Subject/participant lighting – vertical illuminance
    - Lighting surfaces and backgrounds – 3:1 Contrast Ratio
    - Source angles and fixture positioning – Direct glare and veiling glare

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Common Assemblies
Basic Assembly
Basic Lane Transition
Divided Highway
Primary Road Full Section
Secondary Road Full...
Intersections
Primary Road - Through In...
Tool Palettes - Civil Imperial Subassemblies
Command: _USSAVE
Command: Specify opposite corner:
Command:

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Designing the Lighting

PERMANENT INSTALLATIONS

Key Considerations:

4. Controls

- Dimming
- Zone separation
- Color temperature control
- Stored presets
- Shading control interface
- AV interface

Practical Considerations

1. Natural light – it's free! But…
    - Too much of a good thing
    - 35,000,000,000,000,000,000,000,000,000 lumens
    - 100,000 lux
2. Harsh lighting = harsh shadows
3. Window Direction
4. Shading

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Practical Considerations

Importance of Background

- Light Balance
- Professionalism
- Visibility

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Key Takeaways

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Key Takeaways

- Contrast ratio: Do not make the camera choose. Avoid high contrast.
- Vertical illuminance: The camera sees the luminance from a subject. Good lighting on faces allows the camera to see the important details for visual communication
- Color rendering: Consider the effects of color as perceived through a camera and viewed on a display
- Lighting angles: Key, fill, back and careful to avoid glare
- Room Layout: Understand where cameras, subjects, and displays will be located
- Consider lighting controls
- Communication with AV designer & Interior Designer

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Thank you!

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This concludes The American Institute of Architects Continuing Education Systems Course

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Thank you for attending!

Please scan the QR code to rate it and leave feedback.

Sutton North Room

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