VISUAL DISPLAYS

TEAMS ROOMS 2022 – looking to the future of hybrid meeting and teaching spaces

Webinar 20 January 2022

Greg Jeffreys

DISPLAYS, LIGHT & ENVIRONMENTAL EXPERTISE

PRODUCTS, SERVICES, SPECIALIST CONSULTANCY

VISUAL DISPLAYS

All roads lead to Rome

Presenter – Greg Jeffreys

VISUAL DISPLAYS

- Managing Director of Visual Displays (formerly Paradigm AV)
- Specialist consultant in standards, displays, light & lighting, VC lighting, teaching space & meeting room design
  - Not an AV consultant!
- Current chair, AVIXA Standards Steering Committee
- Lead writer, PISCR image contrast standard – and new ISCR standard task group
- Task group chair ANSI/AVIXA DISCAS standard – image size, resolution, viewing positions/angles, content size guidance
- Task group working on AVIXA's new UX for AV Design standard
- President of InfoComm/AVIXA 2012, board member 2008-13
- Writer and teacher
- 2020 Outstanding Contribution Award – AV Technology Awards
- Proud associate of LTSMG & AV User Group

AVIXA Standards – in 2022?

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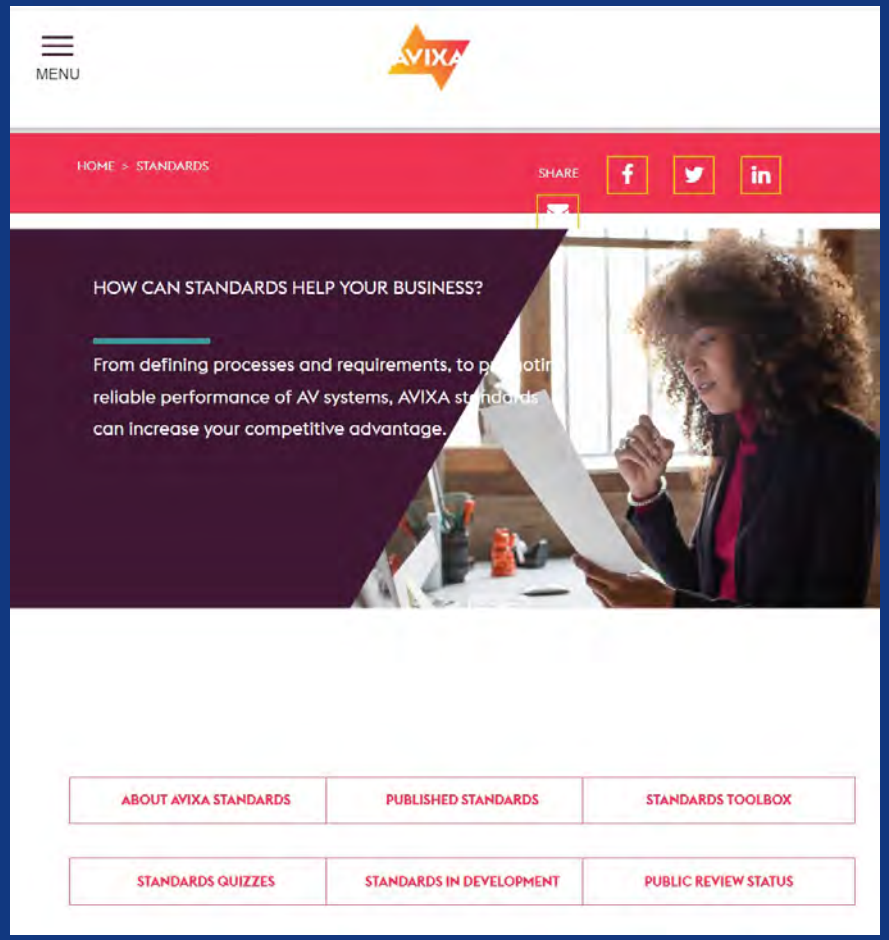

- https://www.avixa.org/standards

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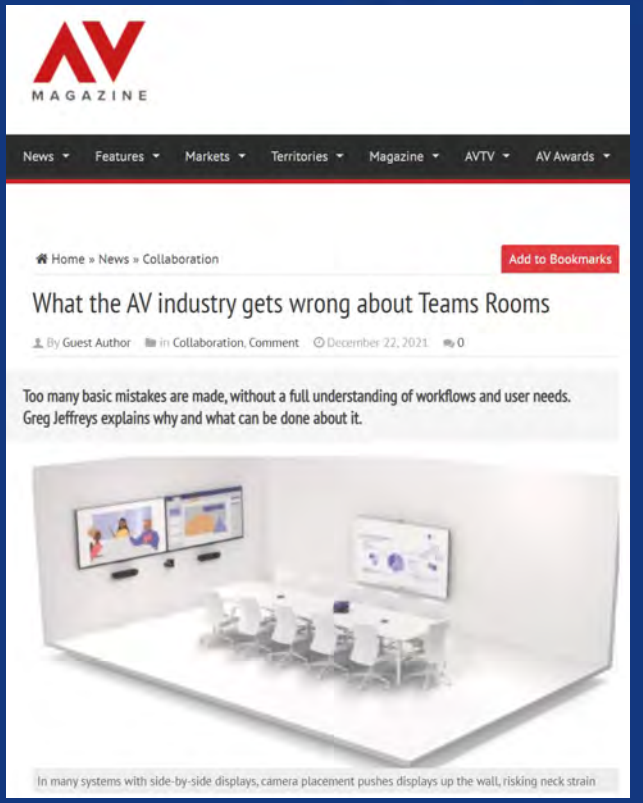
Teams Devices in the Workplace

Bringing Microsoft Teams to your meeting rooms

- https://info.microsoft.com/UK-TeamMCD-CNTNT-FY21-05May-20-BringingMicrosoftTeamstoyourmeetingrooms-AID-3019979-SRGCM4668_01Registration-ForminBody.html



- https://www.linkedin.com/posts/jimmyvaughan_what-the-av-industry-gets-wrong-about-teams-activity-6879448568025939968-fxKN/

Microsoft vision

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https://youtu.be/ljh7xlj0WjQ

Size really matters

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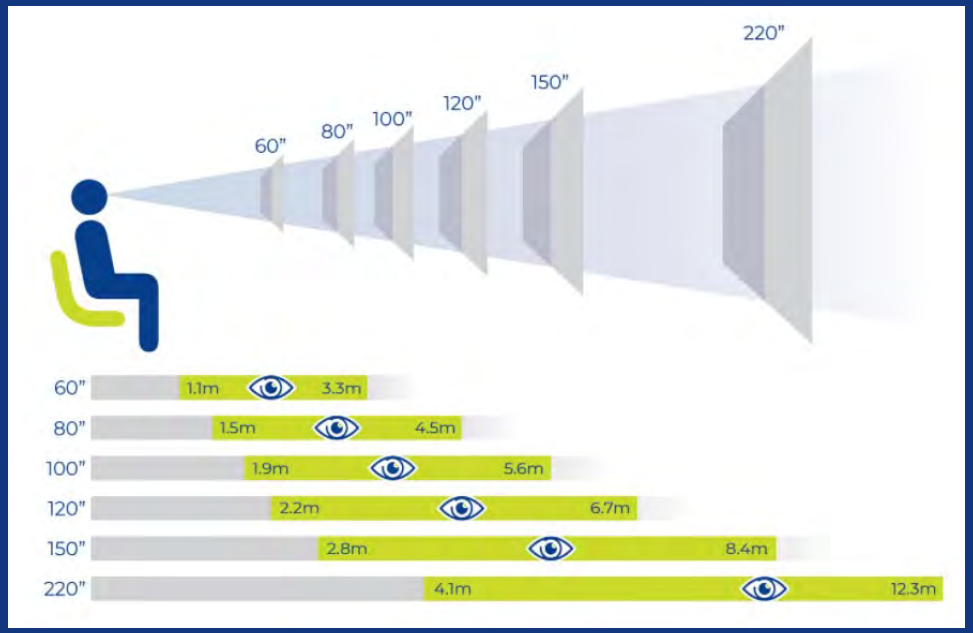
DISCAS

Display Image Size for 2D Content in Audiovisual Systems



Room design 101!

Twin displays

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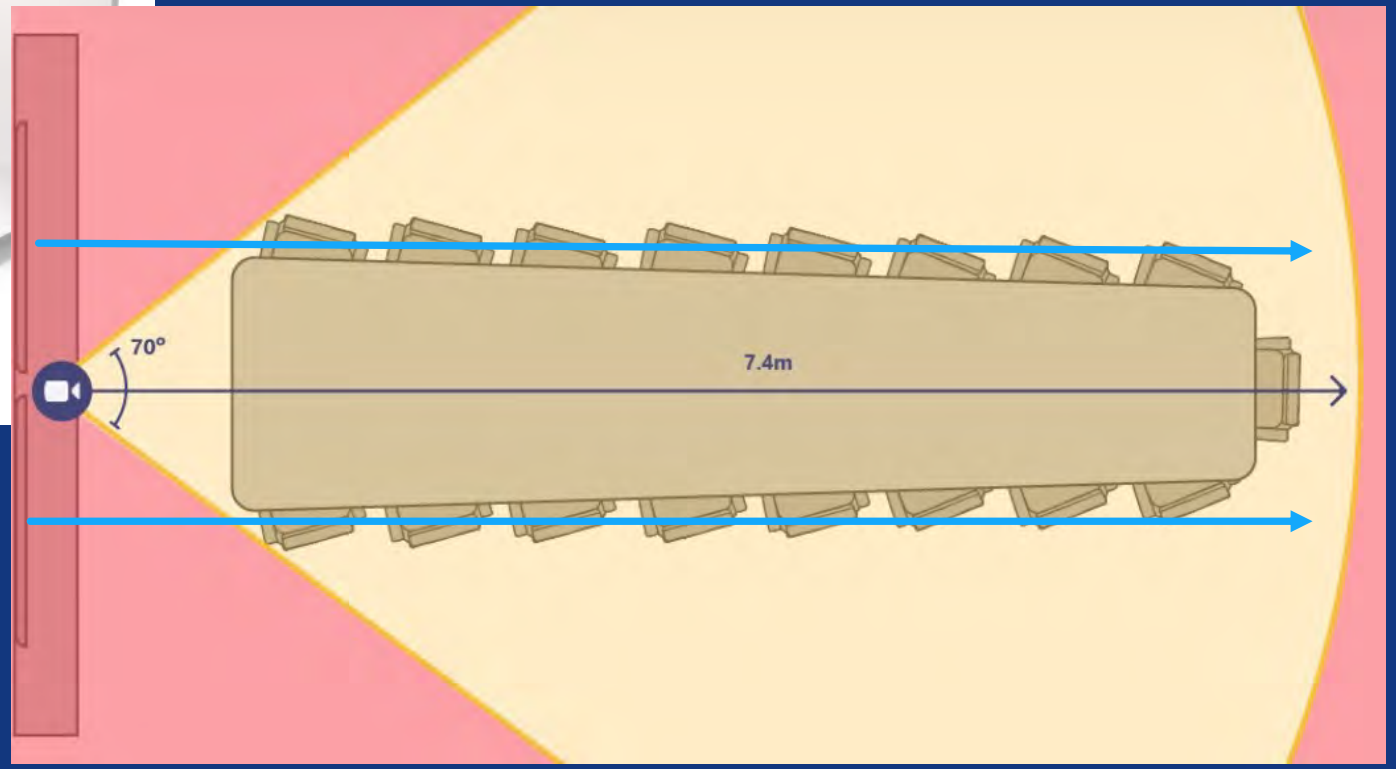
Midsize meeting room



DISCAS closest viewing positions
Vertical viewing angle

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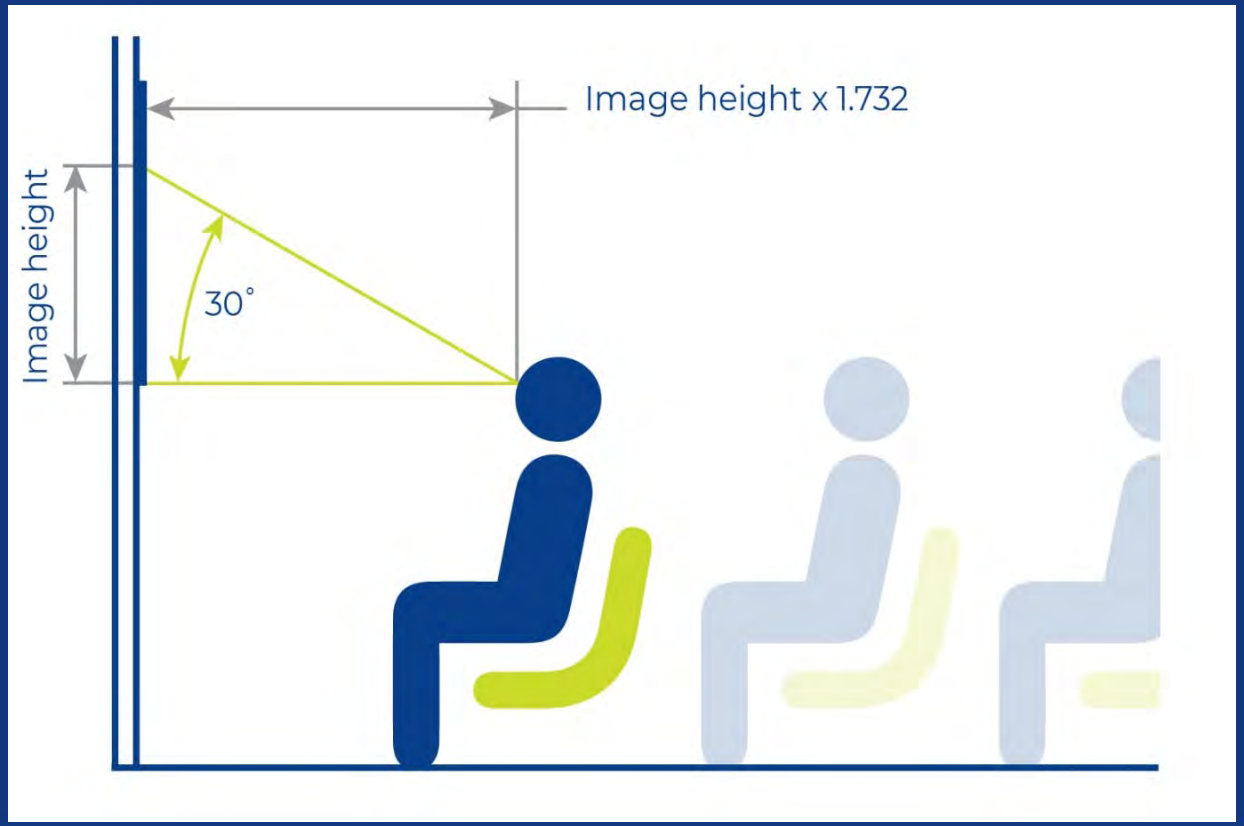
- Top of image < 30 deg° from eye position



Apply DISCAS to main content window height – not image height

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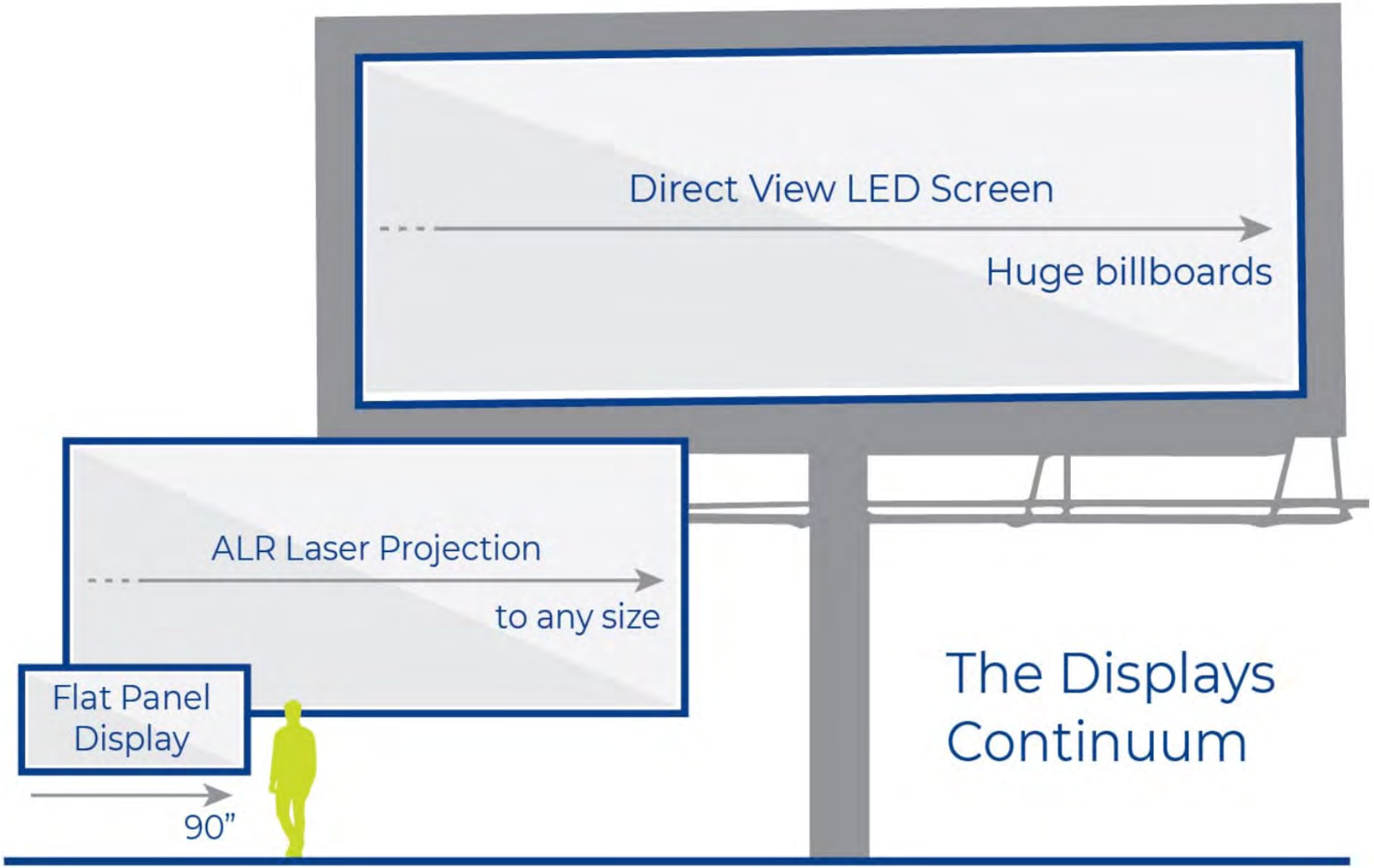
- DISCAS %ElementHeight (%EH) default = 3%
- 3%EH = 6 : 1
  - (Farthest viewer no more than 6 x image height)
- If content window = 60% of image height
- Then ratio becomes 3.6 : 1
  - (0.6 x 6 = 3.6)

VISUAL DISPLAYS



The Displays Continuum

www.visualdisplaysltd.com

2022 – Year of Projection Done Properly

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Environmental, sustainability

VISUAL DISPLAYS

Projection done properly = select screen first, projector last

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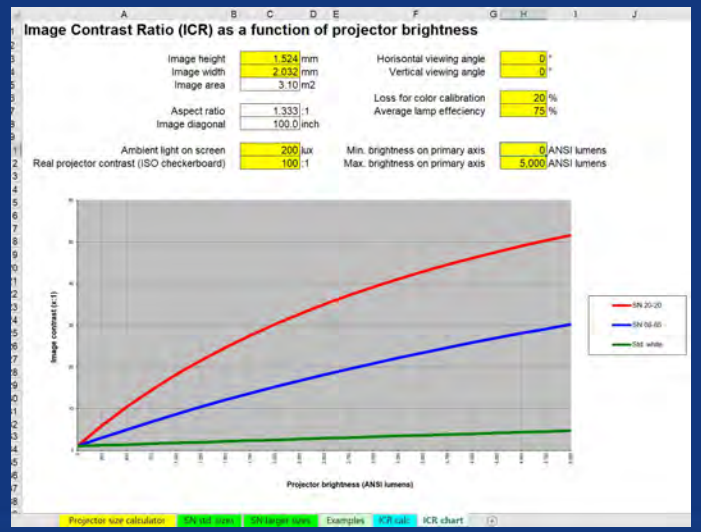
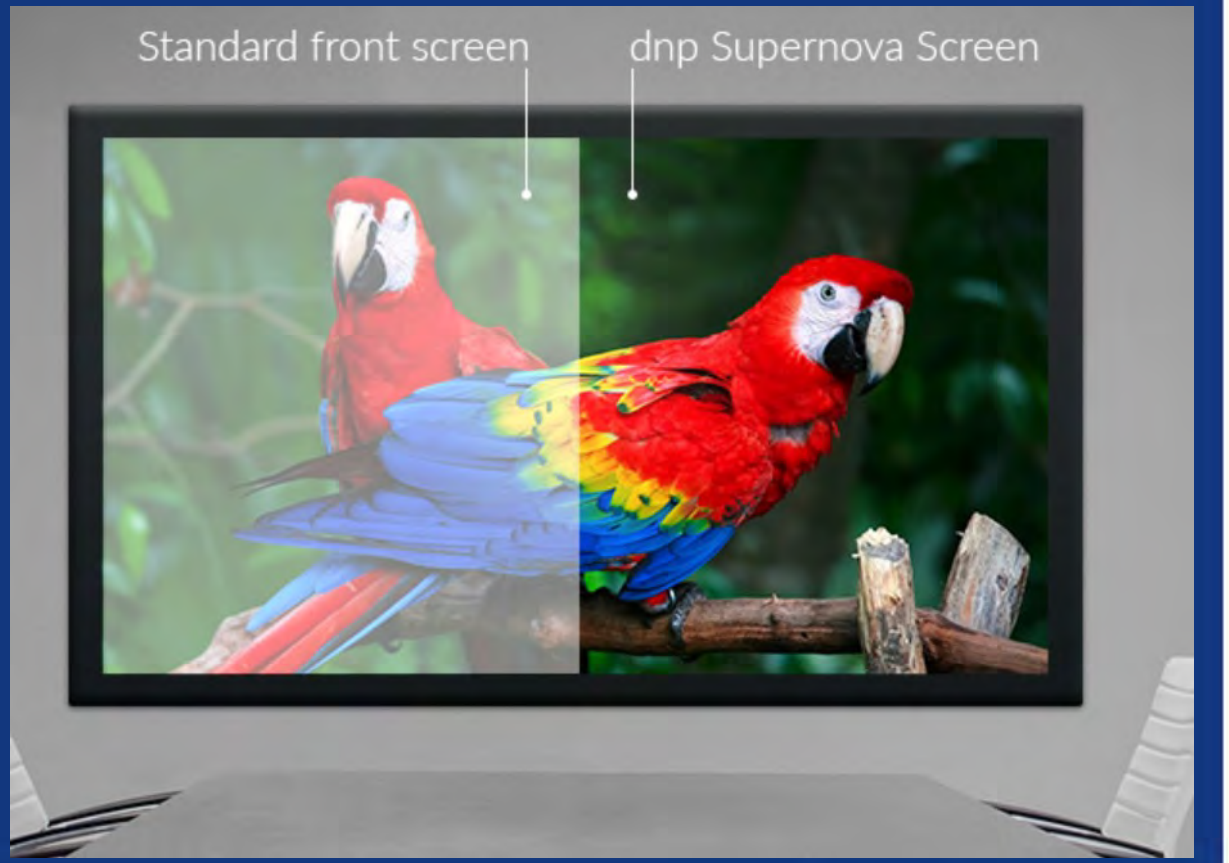
- Choose the correct ALR (ambient light rejecting) projection surface for each space
- Do the maths for correct projector lumens & contrast

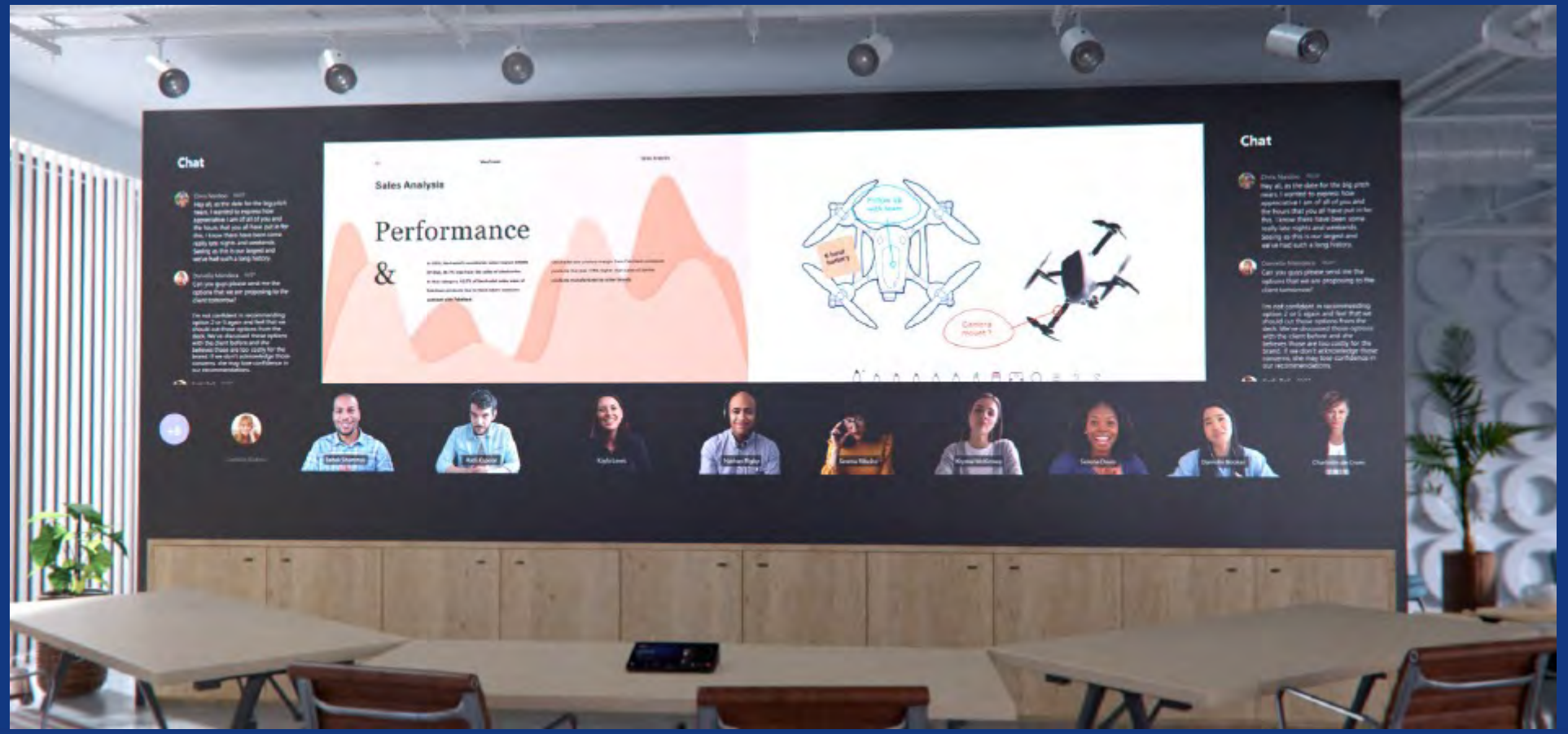
Image width (mm)	2500	mm
Image height (mm)	1406	mm
Screen area (m^2)	3.515	m^2
Image brightness required	350	cd/m^2 [nit]
Screen gain	.8	
LUMENS (lm) =	4829	These are the 'real' lumens required from the projector, once you have applied some kind of 'reality check' factor to the brochure lumens





Microsoft Front Row

VISUAL DISPLAYS



Camera position & deployment

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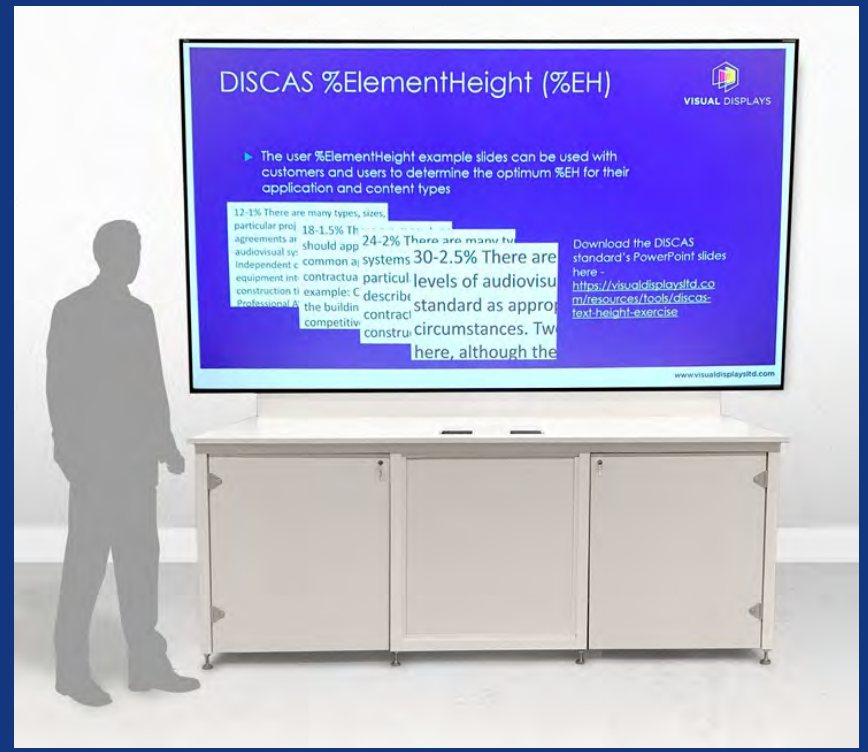
VDL Digital Canvas – 120”, 140” & bespoke sizes

VISUAL DISPLAYS



Find out more visit:
www.visualdisplaysltd.com/meeting-board-room-screens/teams-rooms

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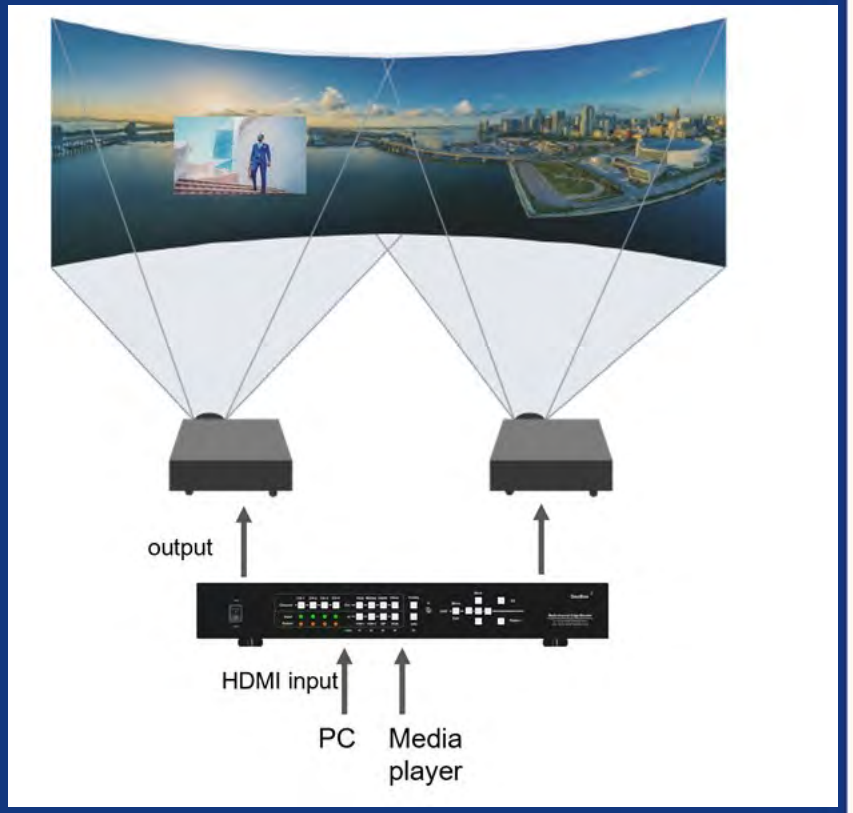
Using UST projection on special ALR surface allows camera placement behind small aperture

Moving to larger ‘digital canvas’ allows placement of small form factor VC cameras to be placed in front of screen

Allows optimising vertical positioning of image – and remote participants

Projection in 2022

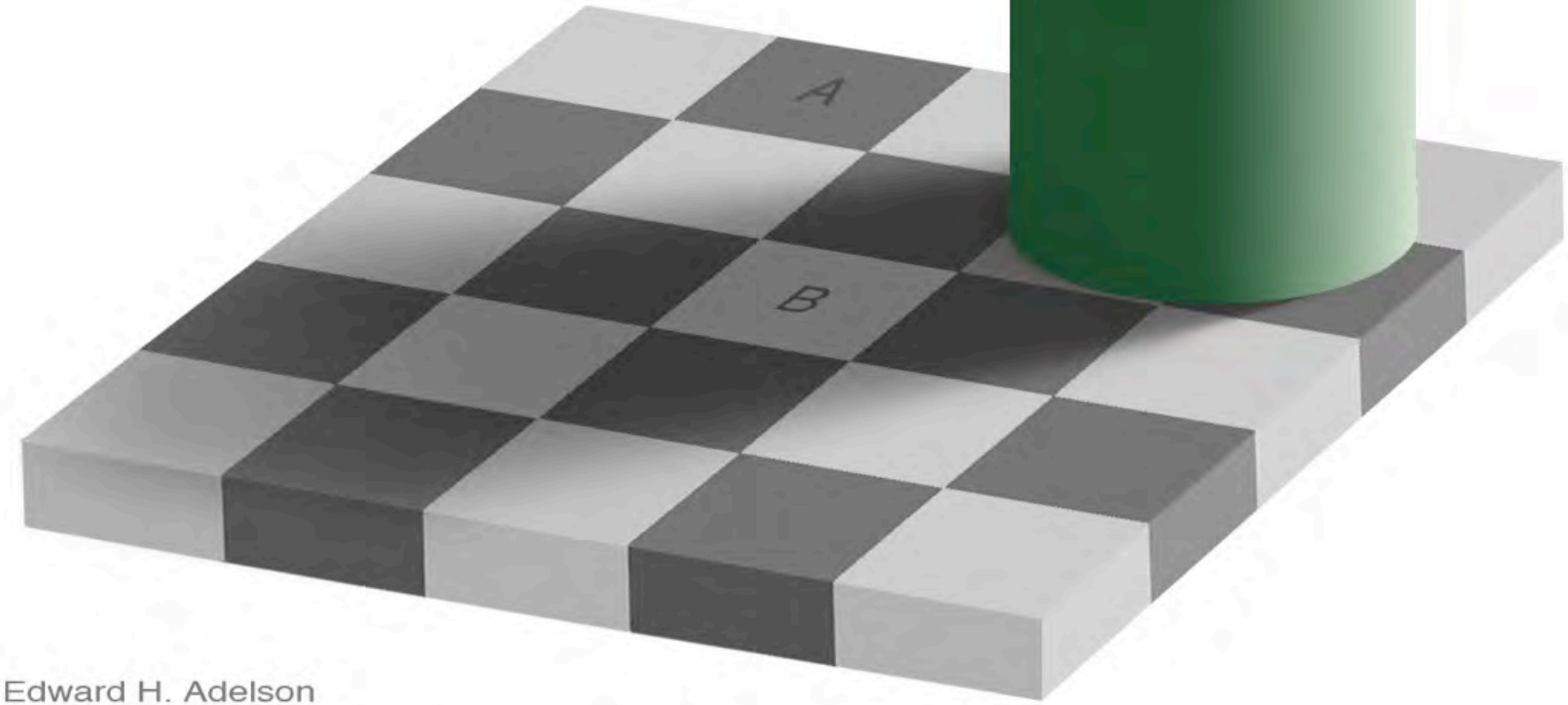
VISUAL DISPLAYS



How we see

VISUAL DISPLAYS

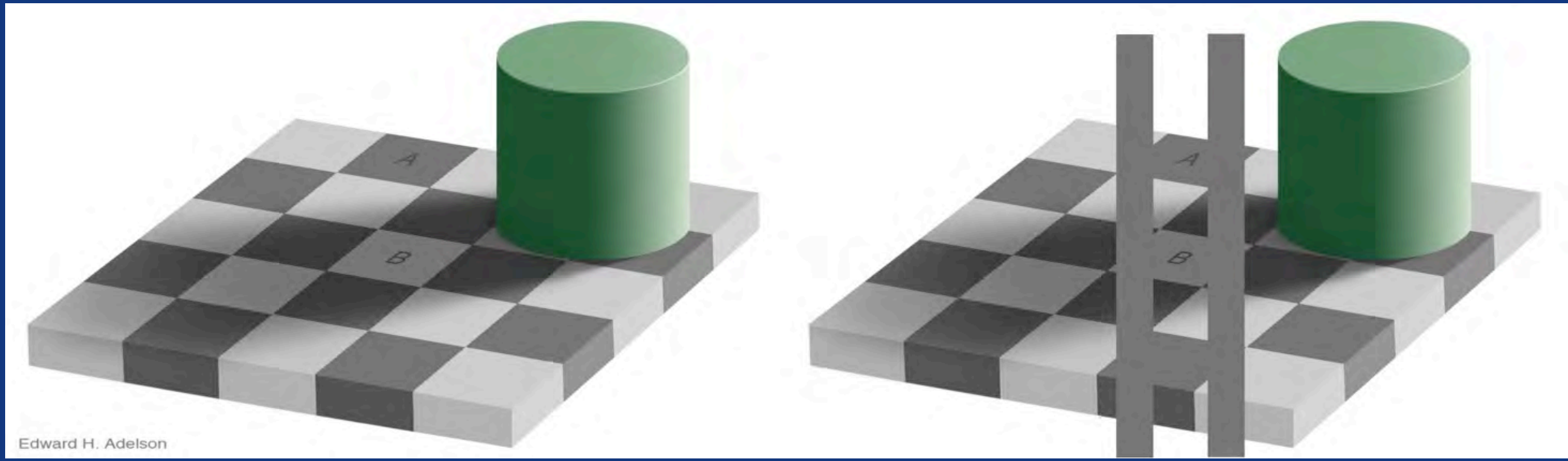
The squares marked A and B are the same shade of grey.



Edward H. Adelson

How we see

VISUAL DISPLAYS



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What resolution?

HD, 4K, UHD, WUXGA

or...?

Asthenopia ('eye strain')

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TO CALCULATE TASK LUMINANCE		
Task luminance = *lx* / *pi* x PG		
[lux = lumen / m2]		
Ambient light in lux	400	*You should have 300-500 lux on a meeting room table*
Peak Gain of task (eg paper)	1	
TASK LUMINANCE =	*127*	cd/m^2 [nit]
Task luminance ratio	2.5	: 1
MAX DESIRED IMAGE LUMINANCE =	*318*	cd/m^2 [nit]
PISCR contrast ratio required	15	: 1
MAX PERMITTED BLACK LEVEL (relative to the max white level permitted on your image	*21*	cd/m^2 [nit]

Black levels

Simulation & immersive displays

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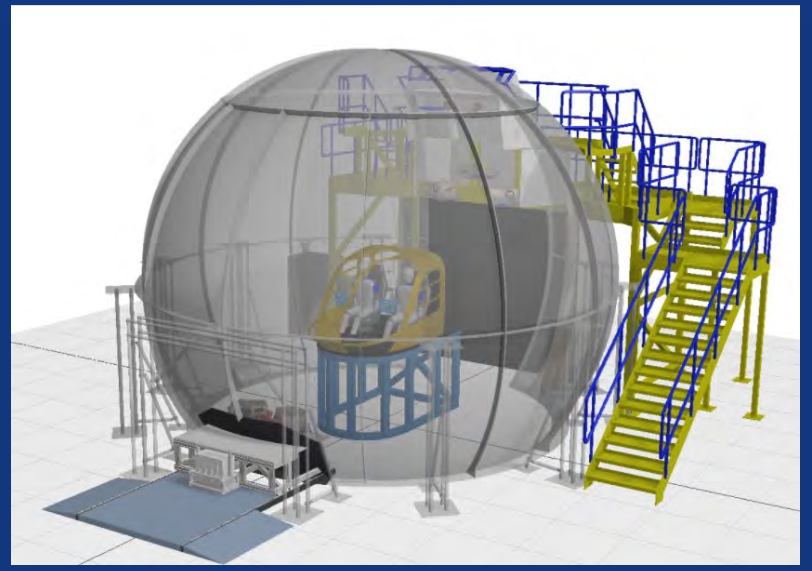
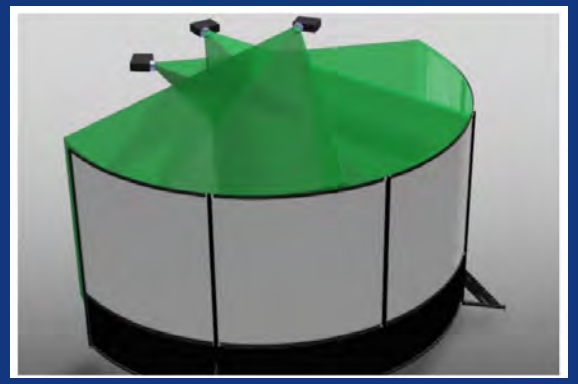
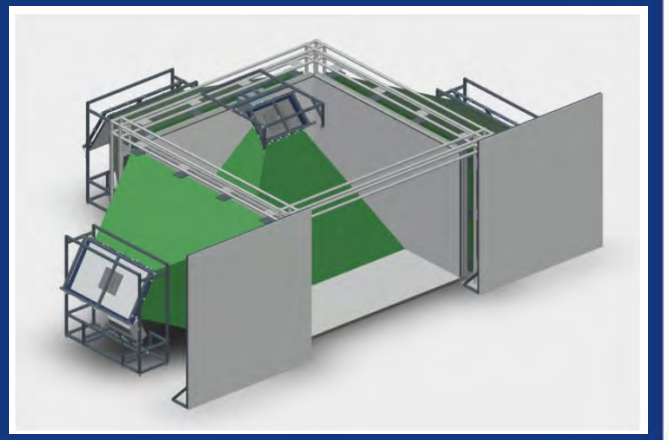
- Breaking the Fourth Wall
- Thinking in ‘cues’







Illuminating ENGINEERING SOCIETY AVIXA

ANSI/IES/AVIXA **RP-38-17**

Recommended Practice for Lighting Performance for Small to Medium Sized Videoconferencing Rooms

VISUAL DISPLAYS

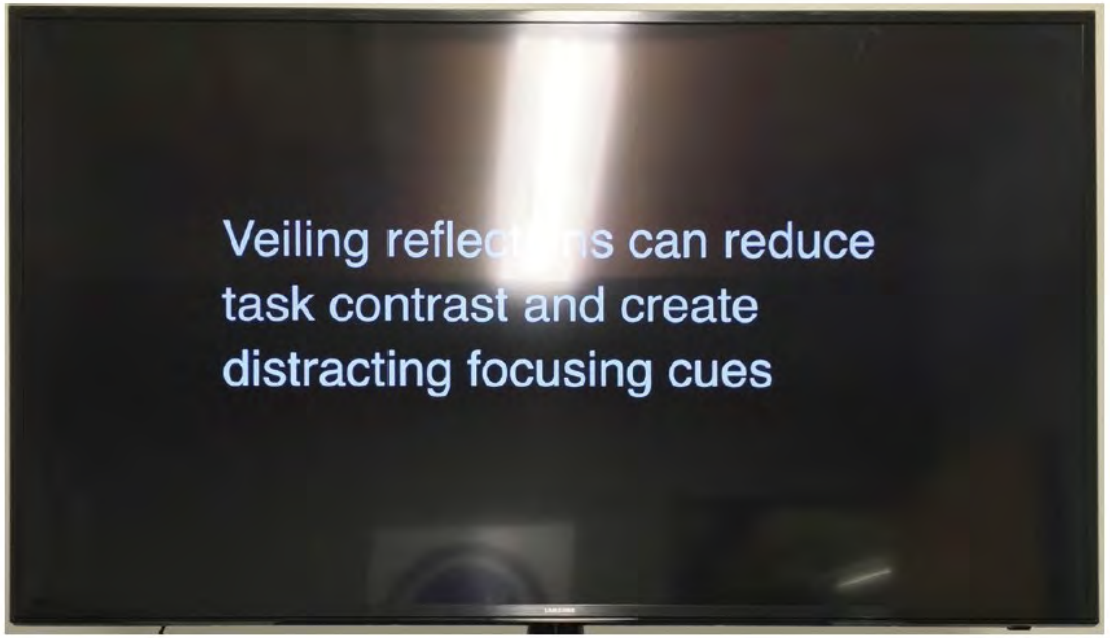


Image accessed from ANSI/IES/AVIXA RP-38-17 *Recommended Practice for Lighting Performance for Small to Medium Sized Videoconferencing Rooms* – available to AVIXA members

Shiny screens. Really?!

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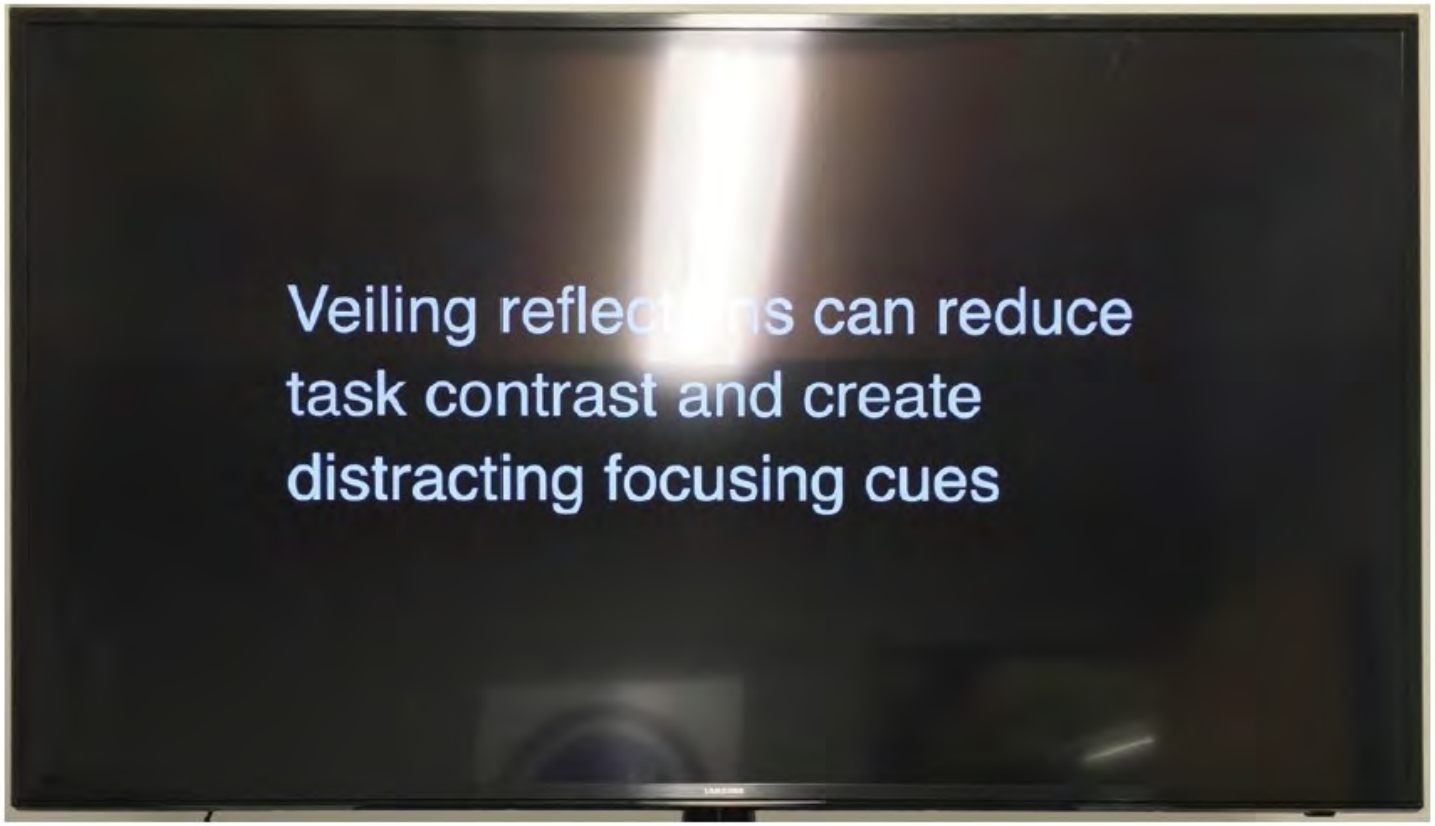

Balancing lighting & display

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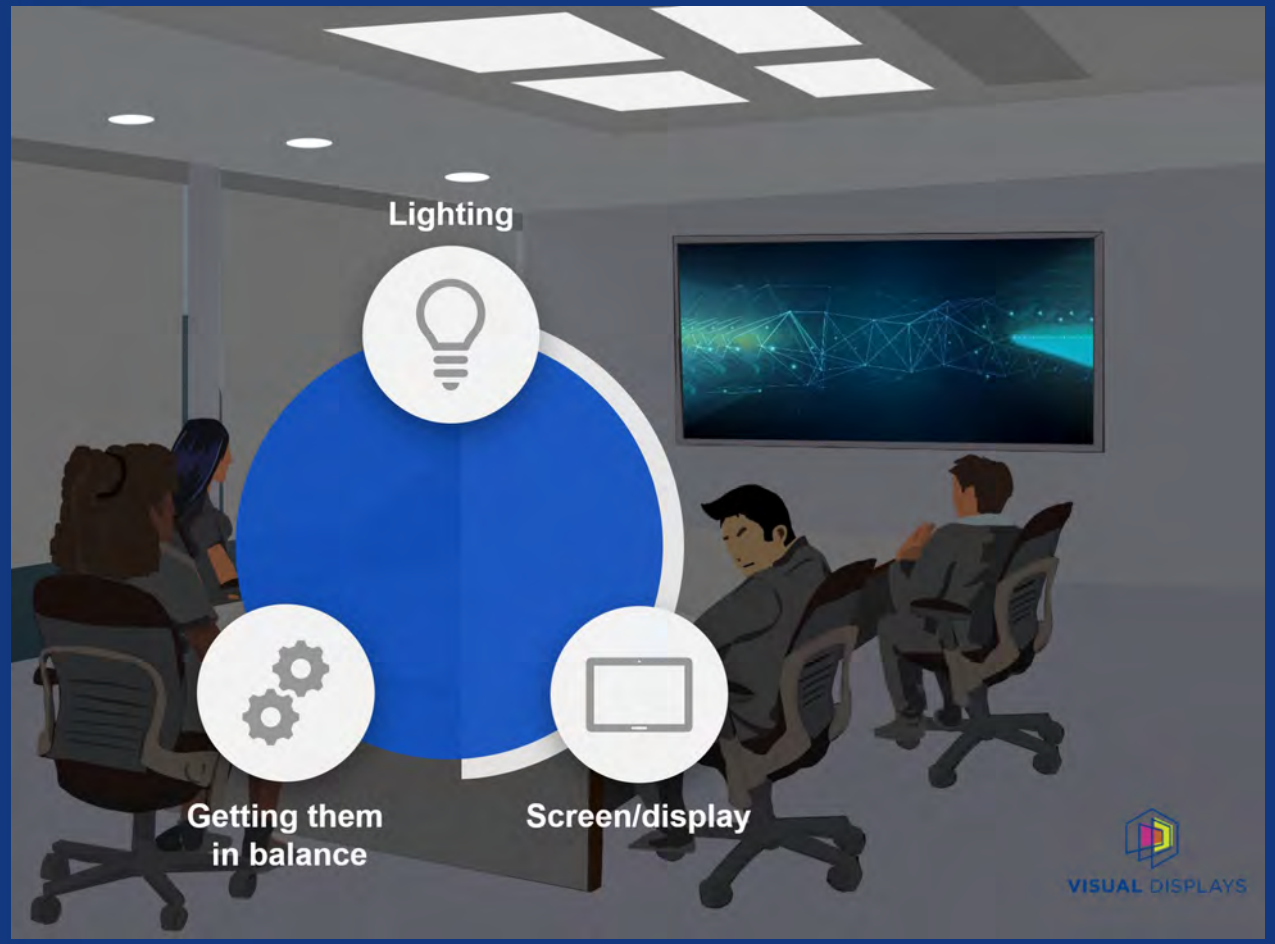

Room lighting				
	Reference standard	SLL Lighting Handbook (CIBSE)		
		CIBSE LG 1		
	Objective			
		Core area Illuminance	300 - 500	lux
		Colour temperature	3000 - 5000	CCT
		Discomfort glare	< 19	UGR
		Colour rendering (ex VC)	> 85	CRI
		General illuminance ratio	10 : 1	
		Core area illuminance ratio	< 5 : 1	
		Task illuminance uniformity	> 0.7	(esp work surfaces)
		Task luminance ratio (TLR)	< 3 : 1	(sets max display luminance)
Display				
	Reference standard	PISCR		
		ISCR		
		Information Display Measurements Standard		
		DISCAS		
	Objective			
		Max luminance (from TLR)	300 - 450	cd/m² [nit]
		ISCR contrast ratio	> 15 : 1	
		Max black level	20 - 30	cd/m² [nit]
		Size (DISCAS, height)	1400	mm
		Resolution (vertical pixel)	1080	pixel
		%Element height	2.5	%
		Max viewing distance ratio	6.3 : 1	farthest viewer : image height

UX & Testing

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User Experience Design for Audiovisual Systems

UX 701.01

This Standard will highlight key steps, actions and review / approval gateways required to achieve a successful User Experience Design for Audio Visual Systems and the related technologies with which they are integrated. This standard is currently in development.

https://ux-study.com/

WELL Building Standard v2™

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IWBI delivers the cutting-edge WELL Building Standard™, the leading global rating system and the first to be focused exclusively on the ways that buildings, and everything in them, can improve our comfort, drive better choices, and generally enhance, not compromise, our health and wellness.

- This standard captures every aspect of building and user wellbeing and management
- Provides 'hooks' into AV standards
- Powerful tool to work with senior management and other stakeholders
- Helps 'silo conflict' such as lighting damaging display performance – and learning outcomes

- https://v2.wellcertified.com/v/en/overview

INTERNATIONAL WELL BUILDING INSTITUTE™

Key points

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- A holistic approach is essential – the entire hybrid space (room, furniture, technology etc) is an inter-dependent system
  - Understand the individual components and strategise for each
- Use AV standards – critically and adapt to your needs
  - Use hard performance metrics
- Futureproof your spaces as your needs and workflows develop
- Get the image size right – a step change increase
- Understand what creates an authentic and natural experience – for in-person and remote users
- Get the technology right
- Avoid the pitfalls e.g. eye strain, reflective screen surfaces etc

The VDL Digital Canvas

VISUAL DISPLAYS

Display systems for Teams/Zoom/hybrid meeting and teaching spaces

Next-generation display solutions for the best possible hybrid meeting experience. The VDL Digital Canvas is the ultimate hybrid meeting display designed to deliver an authentic and inclusive user experience to bridge the gap between in-person and remote attendees and facilitate more effective collaboration.

Find out more visit:

www.visualdisplaysltd.com/meeting-board-room-screens/teams-rooms

zoom

www.visualdisplaysltd.com

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