



VISUAL DISPLAYS

Teams Rooms & Hybrid Spaces 2022 Microsoft Teams – Front Row – new aspect ratios

Webinar 15 February 2022
Greg Jeffreys

DISPLAYS, LIGHT & ENVIRONMENTAL EXPERTISE
PRODUCTS, SERVICES, SPECIALIST CONSULTANCY

Presenter – Greg Jeffreys



- ▶ 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



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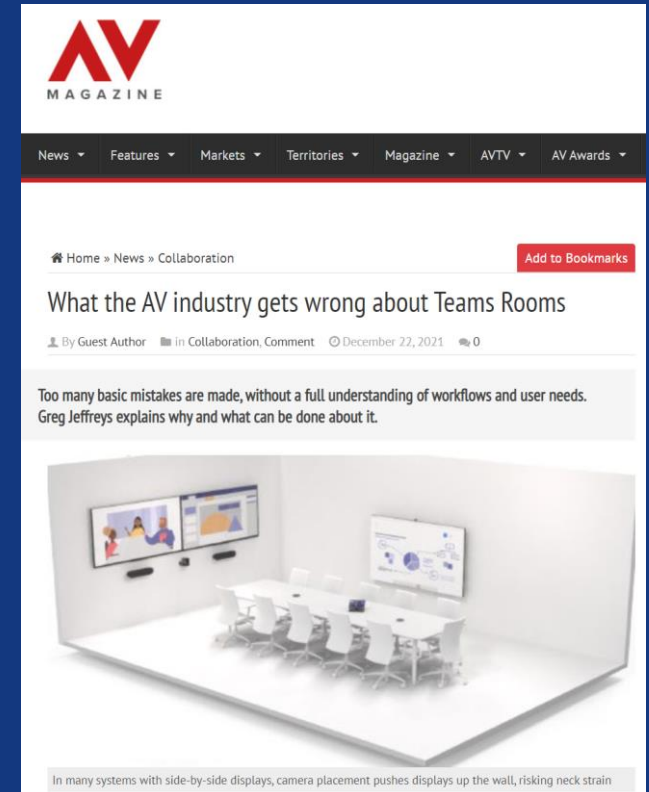


Teams Devices in the Workplace

Bringing Microsoft Teams to your meeting rooms

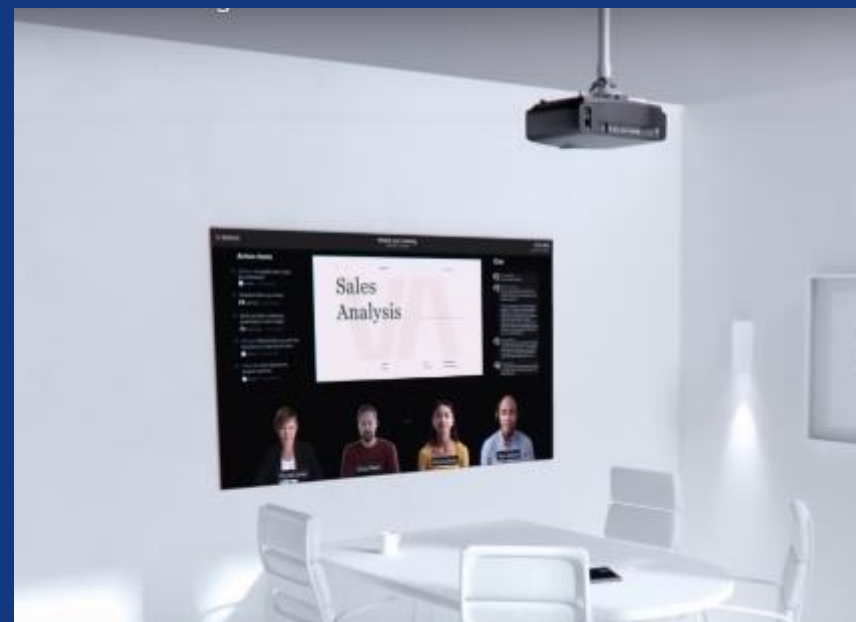
- ▶ https://info.microsoft.com/UK-TeamMCD-CNTNT-FY21-05May-20-BringingMicrosoftTeamstoyourmeetingrooms-AID-3019979-SRGCM4668_01Registration-ForminBody.html

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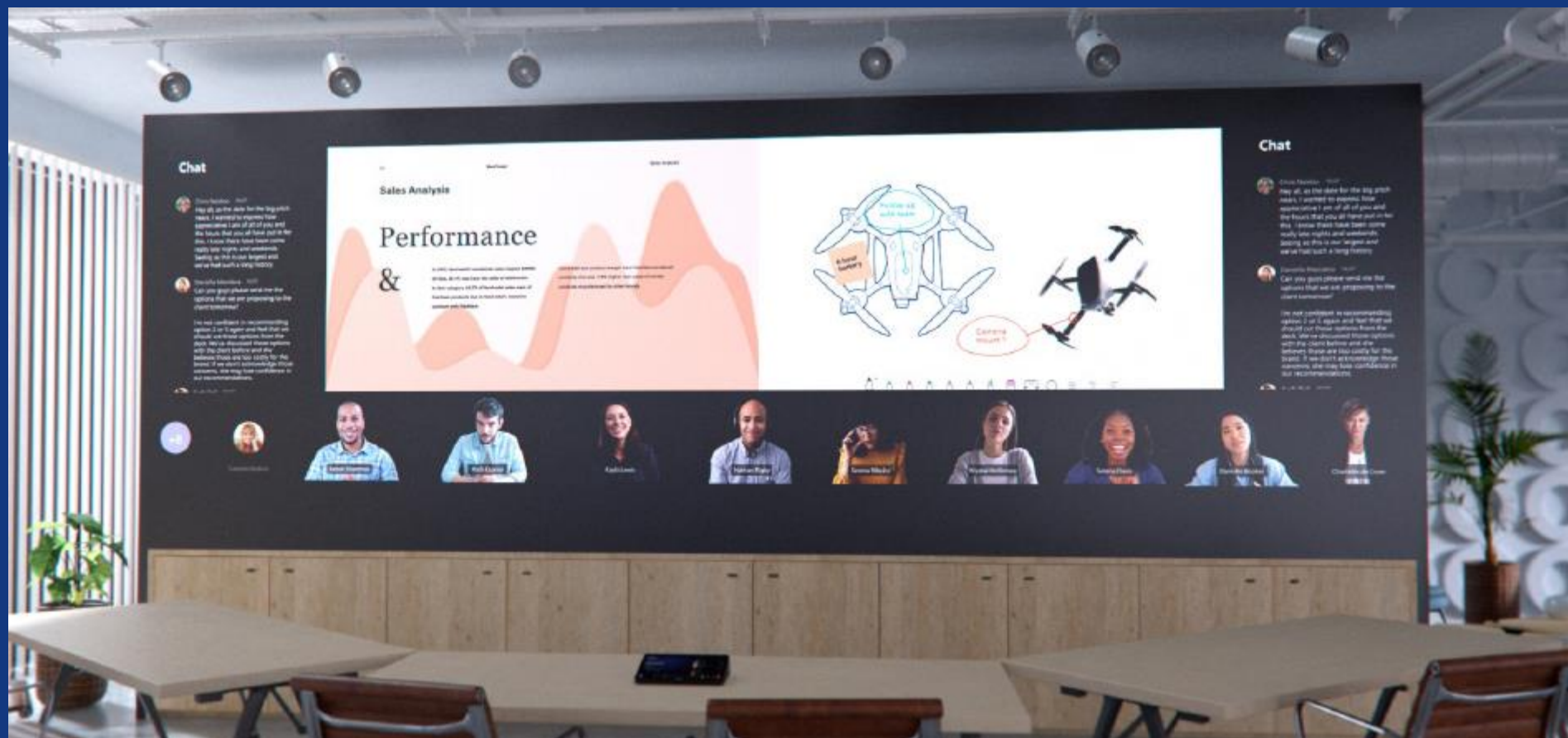


- ▶ https://www.linkedin.com/posts/jimmyvaughan_what-the-av-industry-gets-wrong-about-teams-activity-6879448568025939968-fxKN/

Projection delivering the MS vision



Microsoft Front Row – in principle



Microsoft Front Row – in practice



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Feb '22 release – 21:9



Aspect ratio 16:9 with 1920 x 1080 resolution or
21:9 with 2560x1080 resolution

New aspect ratios



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- ▶ Aspect ratio 16:9 with 1920 x 1080 resolution or 21:9 with 2560x1080 resolution

16:9

21:9

28:9

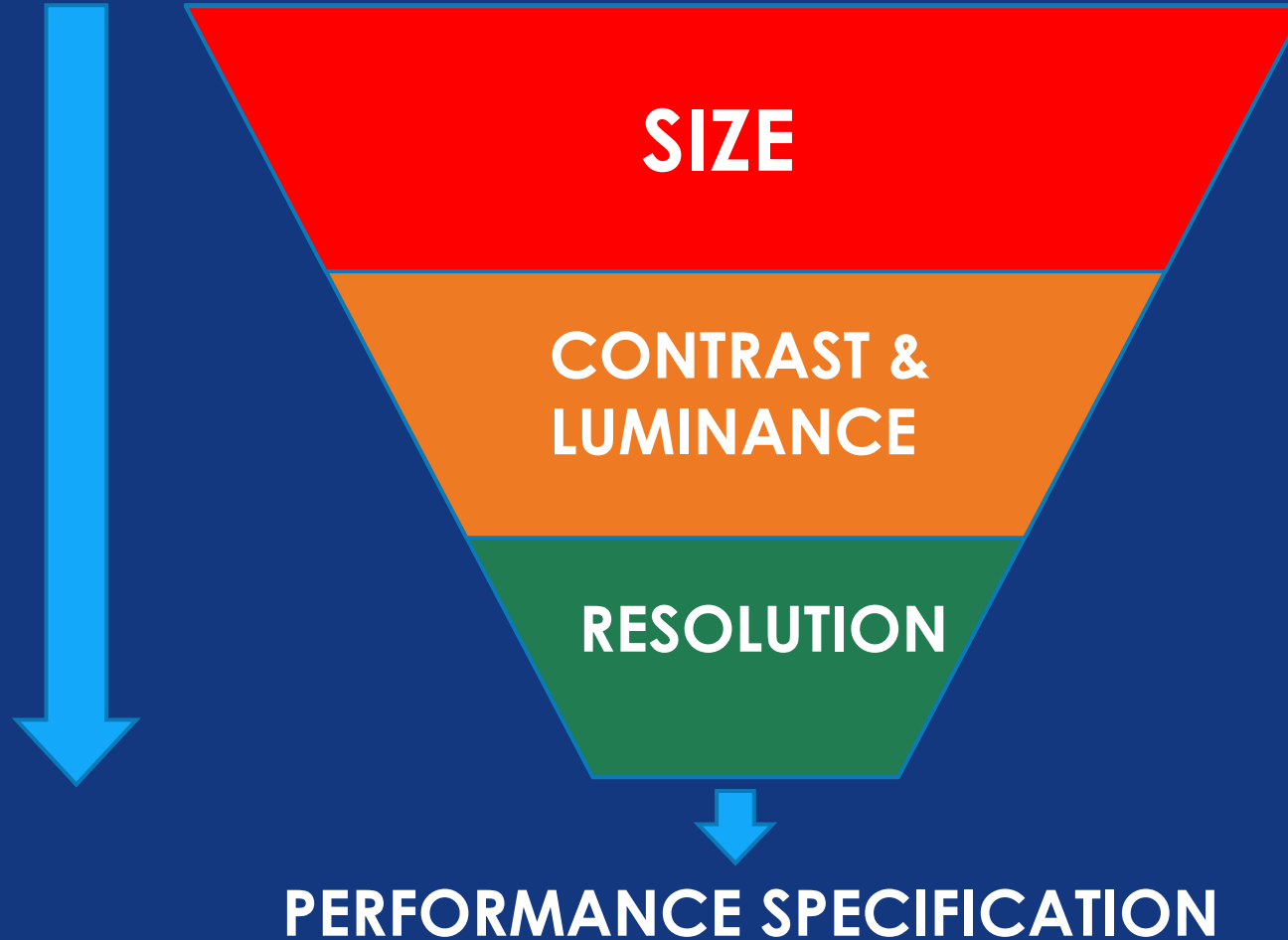
Example of 2 projector blended display – infinite options available

Specification funnel

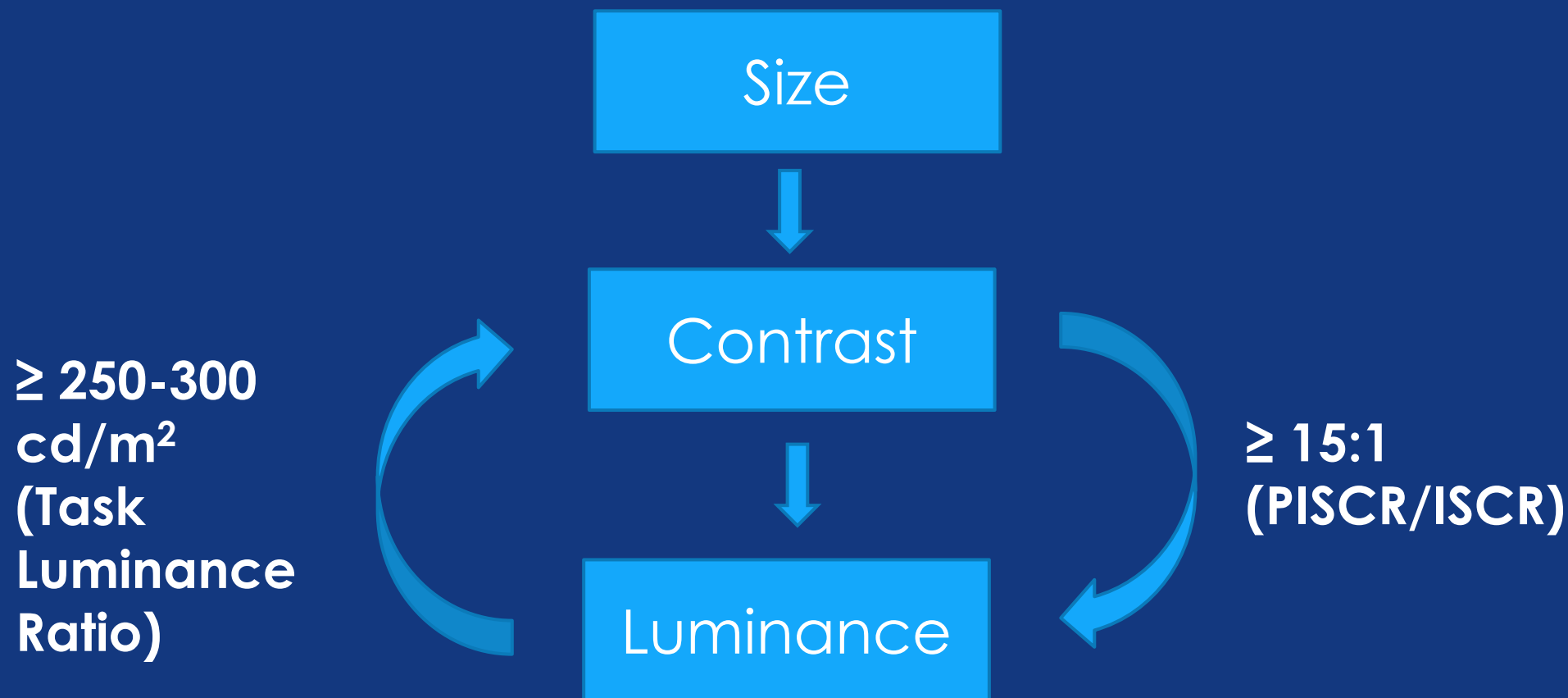
What needs delivering?



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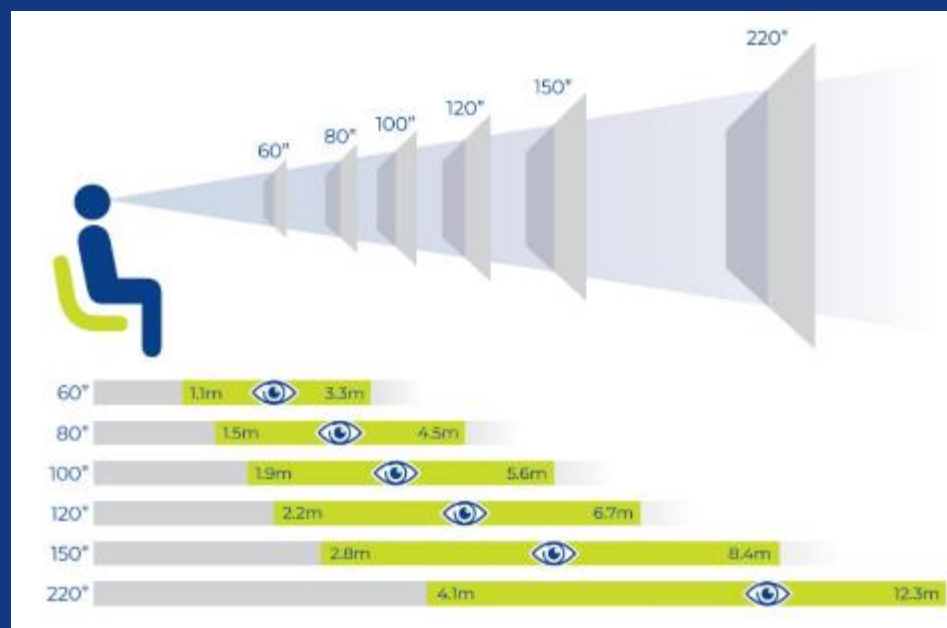
Projection specification process



Size really matters

DISCAS

Display Image Size
for 2D Content in
Audiovisual Systems

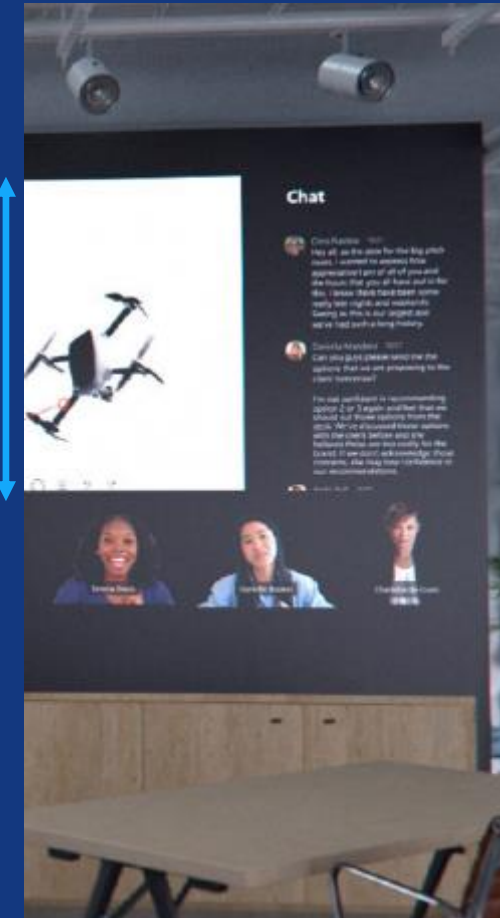


Room design 101!

Apply DISCAS to main content window height – not image height

- ▶ 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
 - ▶ $(0.6 \times 6 = 3.6)$

Content window
e.g. 60% of
image height



Full
image
height

2022 – Year of Projection Done Properly



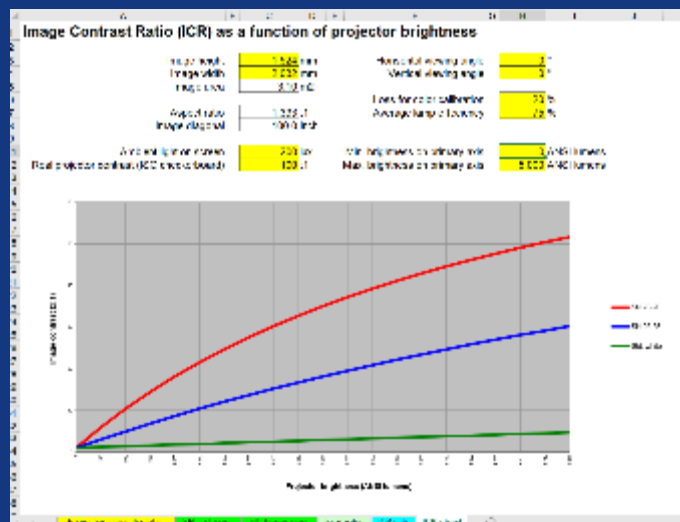
ALR (ambient light rejecting screen
+ 3LCD laser projection

Matt white screen + doesn't matter
which projector!

Projection done properly = select screen first, projector last

- ▶ 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)	3.516	m ²
Image brightness required	350	cd/m ² (nit)
Screen gain	.8	
LUMENS (lm) = 4029		
These are the 'real' lumens required from the projector, once you have applied some kind of reality check factor to the brochure lumens.		



Projection contrast tools



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Projector Brightness

Image Contrast

The Projector Brightness Calculator below is used to calculate how bright a projector you need according to a given screen and a specific desire for quality. The calculator enables you to compare two different setups - e.g. different size, different image quality, different light scenario etc.

All grey fields must have a numeric value.

Change to US unit

Copy information from scenario 1 to 2

Image brightness needed based on best estimates:		Scenario 1	Scenario 2
Ambient brightness level in the room	ALR	0 LUX	500 LUX
Ambient brightness level on the screen surface	ALS	200 LUX	150 LUX
Screen reflectance factor	SRF	8.0 %	8.0 %
Contrast level needed in final image	ICR	0.0 :1	15.0 :1
Projector checkerboard contrast	C	0 :1	120 :1
Ambient light reflected back to the audience	R	16.0 NIT	12.0 NIT
Image brightness needed based on best estimates	B	0.0 NIT	192.0 NIT
Maximum brightness allowed to be "eye-gonomical"	Bmax	0.0 NIT	477.5 NIT

Projector brightness needed for the actual screen size:		Scenario 1	Scenario 2
Image height	Set size	2,000 mm	1,975 mm
Image width		3,556 mm	3,511 mm
Image area		7.11 m2	6.93 m2
Peak gain		0.80	0.80
Gain efficiency for horizontal viewing position		0 %	89 %
Gain efficiency for vertical viewing position		0 %	90 %
Effective gain in viewing position		0.00	0.64
Effective (net) projector brightness needed	PBN	0 lum	6,527 lum

Dimensioning the projector(s):		Scenario 1	Scenario 2
Loss for start-up adjustment of colours		10 %	10 %
Number of projectors		1	1
Blending zone		100 %	100 %
Lamp efficiency		90 %	90 %
Brightness need adjusted for start-up adjustment of colours		0 lum	7,252 lum
Brightness need adjusted for loss for edgeblending		0 lum	7,252 lum
Brightness need adjusted for loss due to lamp decay		0 lum	8,058 lum
Specified (gross) projector brightness needed	PBG	0 lum	8,058 lum

Projector Brightness

Image Contrast

The Image Contrast Calculator below is the "basic formula" for calculating the image quality (contrast ratio) of a given setup. Used in cases where you want to determine the contrast ratio of a certain picture and you have information about the screen, projector and the environment.

$$\text{Image contrast ratio} = \frac{B + R}{\frac{B}{C} + R}$$

B = Image brightness (Determined from the projector Lumens and the screen gain and size)
R = The amount of ambient light reflected in the front surface of the screen
C = The projector checkerboard contrast measured according to the ANSI/ISO standard

Change to US unit

Effective gain in viewing position (EG):	0.00
Effective projector brightness (PBN):	0 lum
Image height (IH):	0 mm
Image width (IW):	0 mm
Image area =	0.00 m2
Screen Reflectance Factor (SRF):	0 %
Ambient light level on screen (ALS):	0 lux

$$\text{Image Brightness (B)} = \frac{\text{gain} * \text{lumens}}{\text{screen area} * \pi} = \frac{0.00 * 0}{0.00 * 3.14} = 0.0 \text{ nit}$$

$$\text{Reflected ambient light (R)} = \text{SRF} * \text{ambient light} = 0.000 * 0 = 0.0 \text{ nit}$$

$$\text{Measured brightness (B + R)} = 0.0 \text{ nit}$$

Projector checkerboard contrast (C): 0.0 :1

$$\text{ICR} = \frac{\frac{0.0}{0.0} + \frac{0.0}{0.0}}{0} = 0.0 :1$$

<http://pdf.dnp.dk/html/contrast.php>

<https://visualdisplaysltd.com/resources/tools/useful-calculator-tools>

Projector lumens calculation tools



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Image width (mm)	2000	mm
Image height (mm)	1125	mm
Screen area (m ²)	2.25	m ²
Image brightness required	382	cd/m ² [nit]
Screen gain	1	
LUMENS (lm) =	2699	These are the 'real' lumens required from the projector, once you have applied some kind of 'reality check' factor to the brochure lumens

Image width (mm)	2400	mm
Image height (mm)	1500	mm
Screen area (m ²)	3.6	m ²
Projector lumens	4000	
Screen gain	1	
NIT (cd/m ²) =	354	This is the theoretical luminance ('brightness') of your projected image

<https://visualdisplaysltd.com/resources/tools/useful-calculator-tools/projected-brightness-calculator>

<https://visualdisplaysltd.com/resources/tools/useful-calculator-tools>



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What resolution?

HD, 4K, UHD, WUXGA

or...?

21:9 – the practical specification call today



Aspect ratio 16:9 with 1920 x 1080 resolution or

21:9 with 2560x1080 resolution

2160 pixels

1646 pixels

21:9

Upscaled from external processor

3840 pixels

SOURCE(S)

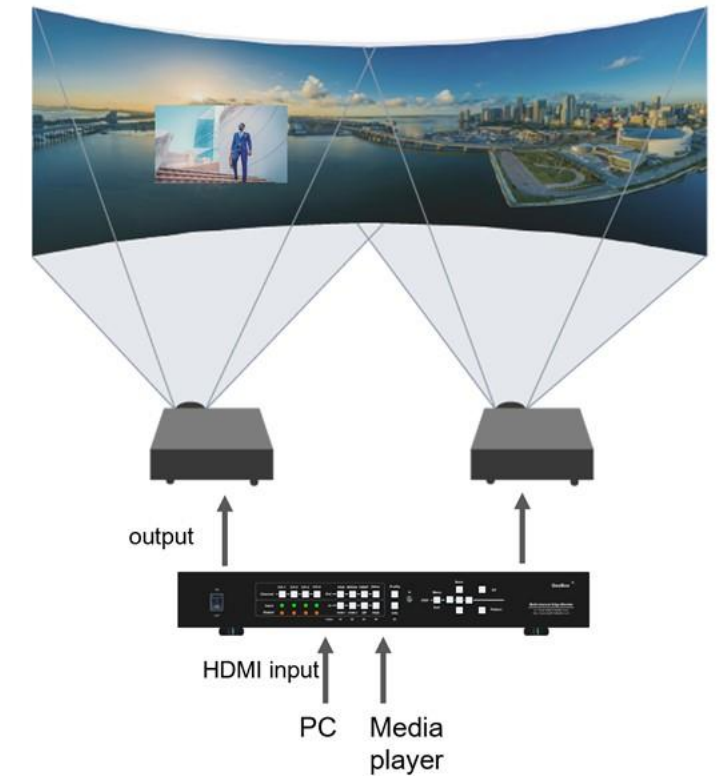


External processor



Single 4K UHD projector

Multiple projection Principles and practice



The VDL Digital Canvas

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



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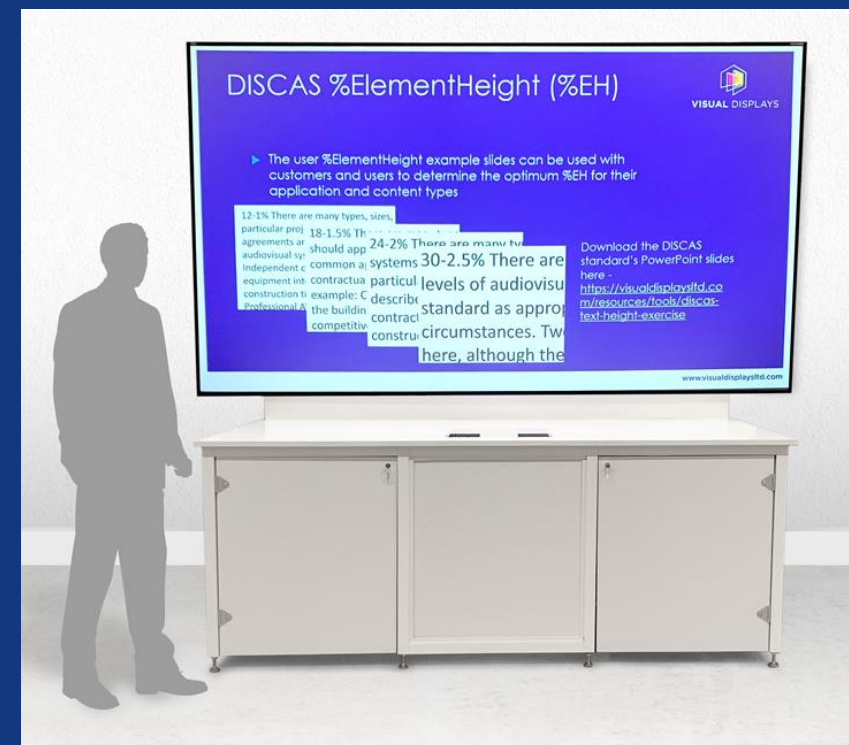


www.visualdisplaysltd.com

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



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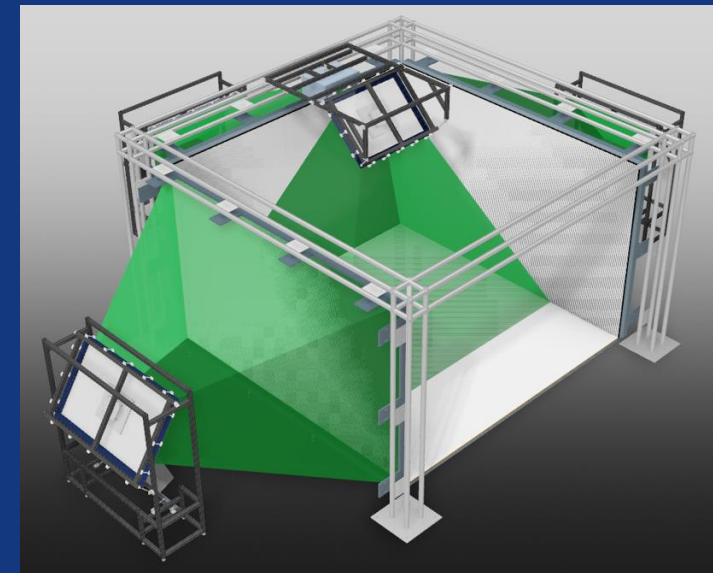
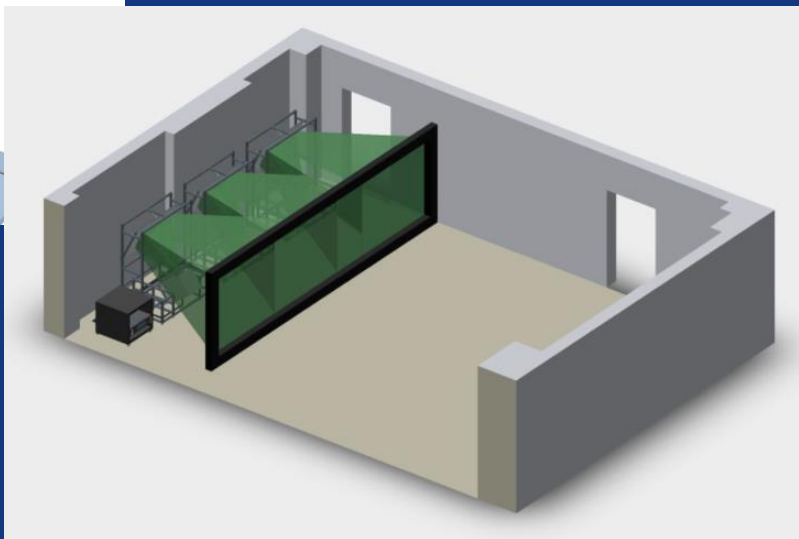
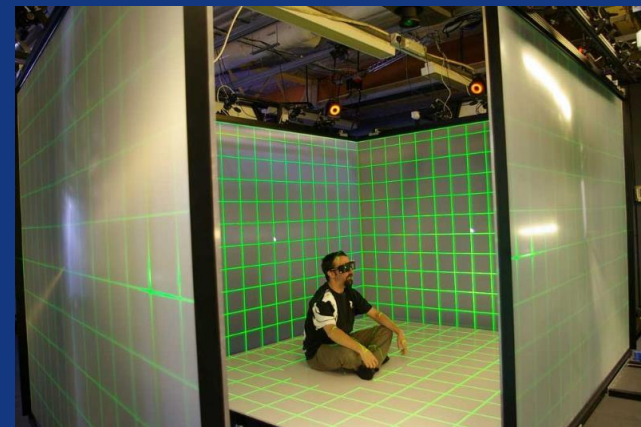
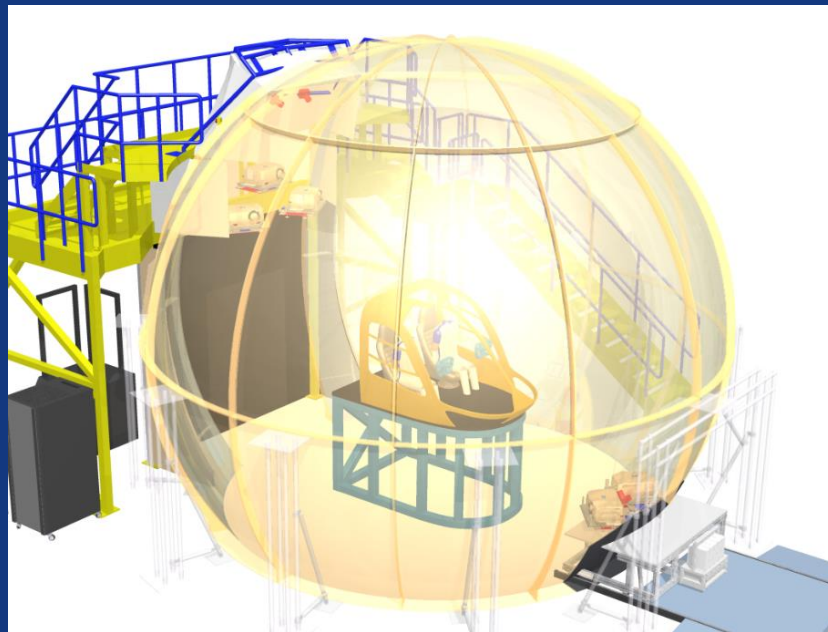
Find out more visit:

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

Our background in immersive brought us here



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Curved screen VDL Digital Canvas

- ▶ Reciprocity – remote & in-person are more equal
- ▶ Organic, human-friendly configuration
- ▶ UST vs standard lens
 - ▶ Impact on camera position
- ▶ Wide range of aspect ratios and resolutions
- ▶ IP and tools based on our simulation & immersive display modelling tools
- ▶ Part of our design consultancy



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Do you have an evaluation space?



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- ▶ Speed of change and development very rapid
- ▶ Workflows = work in progress
- ▶ Display layouts – how many new versions in 2022?!
 - ▶ User-created layouts
 - ▶ Multiple sessions/codecs for multi-point sessions with display running at high resolution?

AV User Group



► <https://www.avusergroup.com/>



LTSMG – Learning and Teaching Spaces Management Group



HE & FE campus technology managers association



<https://ltsmg.co.uk/>

What we can do for you

Use any or all of our services

- ▶ Specialist consultancy
 - ▶ (not AV consultancy!!)
- ▶ Design
- ▶ Manufacture
- ▶ Solutions & technology
 - ▶ VDL Digital Canvas Displays
 - ▶ Projection screens of all types
 - ▶ Immersive displays
- ▶ Proof of concept, product development, system troubleshooting
- ▶ Advanced laser tools
- ▶ We work actively with all parts of the channel - from end user through to reseller
- ▶ All hardware and solutions supplied through reseller/integrator channel



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