

VISUAL DISPLAYS TEAMS ROOMS, HYBRID MEETING/TEACHING 2022 WEBINAR #12 ALR (AMBIENT LIGHT REJECTING) PROJECTION SCREENS

17 January 2023 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 chair ANSI/AVIXA DISCAS standard image size, resolution, viewing positions/angles, content size guidance
- Task group working on AVIXA's new UX Design for AV (UXD4AV) 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
- Writing book on hybrid teaching and meeting spaces

Specialist consultancy



- Greg provides specialist consultancy in tightlydefined packages or on retainer:
 - Space design & configuration
 - Lighting and VC lighting design
 - Displays design
 - AV Standards
 - Environmental standards (including lighting)
- (This is NOT AV consultancy or design it's complementary services and disciplines)
- Available through AV consultants and major AV integrators, except Government
- Greg holds current UK Government Security Clearance (SC)



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Today's webinar on aspect ratios



- AVIXA's DISCAS standard getting size right is still prerequisite
- 16:9 or 16:10 special relevance for Higher Education
- New widescreen formats 32:9, 28:9 and 21:9
 - Mission-critical decisions for Microsoft Front Row
- The bigger picture for displays

PLEASE PUT QUESTIONS IN Q&A & CHAT DIALOGUE !!

Quick DISCAS revision



- Image size defined by height
- Aspect ratios vary, but...
- …image height remains the constant we work with

AVIXA DISCAS viewer categories



Only two taken from ISCR's four and only one is relevant:

- Basic Decision Making (= most systems)
 - Viewers can make decisions by reading and engaging with content
 - Based on 'element' (e.g. character / font height)
 - We use %Element Height: the height of an element (character / effective font size) in relation to the overall Image Height
- Analytical Decision Making (= special systems)
 - Viewers can make decisions by seeing the finest detail displayed
 - Based on image resolution

Image height is a factor of element height (%ElementHeight)

Element Height = X-Height



X-height = 'element' (lower case character)

'Element' = neutral term to allow for formulae, special characters etc

12-1% There are many types, sizes, and complexity levels of audiovisual systems. The user should apply this standard as appropriate to fit the particular project circumstances. Two common approaches are described here, although there are many possible variations in contractual agreements and relationships between the design and construction team. For example: Consultant-led projects when the monetary value of the audiovisual systems is high, the building design and construction timeframe is long, or the installation work must be competitively bid. Independent consultants are persons or firms having neither financial interest in the products specified nor obligations or partnerships with equipment integrators, contractors, manufacturers, and their representatives. Design-build projects (also known as turnkey projects) when the construction timeframe is accelerated, the installation systems are proprietary, and/or the project does not require competitive bidding. Professional AV integrator firms are in the business of selling, engineering, installing and providing ongoing service and support for a wide variety of audiovisual and related technologies, systems, and equipment. Equipment manufacturers may also provide turnkey systems design, installation, and service. In addition, owners may choose to have audiovisual systems designed and/or built by their in-house staff. InfoComm International to the leading non-profit association serving the professional Afformmentations of using working the multiple and the serving the professional Afformmentations of using working the multiple and the serving the professional Afformmentations of using the professional Afformmentation afformmentations of using the professional Afformmentations of using the professional Afformmentations of using the professional Afformmentation afformmen association has 5,000 men bars in studing bar ut outers, systems at gators, cealers and distributors, independent consultants, programmers, rental and staging companies, end users, and multimedia professionals from more than 80 countries. InfoCommoffers industry expertise and market research serving press and ethers seeking information about the industry. Through activities that include trade hows, education, certification of mentions of the chand information environment on more motion. In find stry an environment' ability to conduct business successfully and competently. InfoComminternational is the ANSI accredited standards Developer (ASD) dedicated to the dissemination of the knowledge of audiovisual systems performance parameters. About ANSI The American National Standards Institute, Inc. (ANSI) is the national coordinator of voluntary standar is nevel coment and the clearinghouse in the United States for information on national and international standards. An Amelic in the onal tancard mplies arous et sus of this strugs at tany concerned with its scope and provisions. Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered and that a concerted effort be made toward their resolution. The use of an American National Standard is completely voluntary. Its existence does not in any respect preclude anyone, whether he or she has approved the standard or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standard. The purpose of this standards so p/o/it/ pstession and integration projects. The intention of the structure outlined in this Standard is to enable clients and other design and construction team members persected services. Modern AV systems have become increasingly complex and interconnected to other building systems such as network, electrical, HVAC and building automation/energy conservation. In many instances, AV systems provide critical operational functions for the owner, warranting a thoughtful and well-organized approach to commonly accepted planning, design, and integration procedures. In addition, the AV systems design and integration process may span and parallel a lengthy design and construction cycle, including input and review by many key personnel from divergent disciplines, trades, and backgrounds. This standard provides a practical guideline for defining the audiovisual system requirements and a clear accountability structure for the development and execution of the system design components. It provides a consistent reference for the project team from the initial design phase through construction, project completion, and building occupancy. This document is a Standard Practice Guide outlining design considerations and accepted procedures for accomplishing the task of integrating audiovisual systems into the design and construction of facilities in the built environment. This guide outlines a comprehensive set of procedures for the design and construction of professional audiovisual systems, and does not suggest a specific course of action. Qualified, experienced professionals are required to interpret,

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24-2% There are many types, sizes, and complexity levels of audiovisual systems. The user should apply this standard as appropriate to fit the particular project circumstances. Two common approaches are described here, although there are many possible variations in contractual agreements and relationships between the design and construction team. For example: Consultant-led projects when the monetary value of the audiovisual systems is high, the building design and construction timeframe is long, or the installation work must be competitively bid. Independent consultants are persons or firms having neither financial interest in the products specified nor obligations or partnerships with equipment integrators, contractors, manufacturers, and their representatives. Design-build projects (also known as turnkey projects) when the construction timeframe is accelerated, the installation systems are proprietary, and/or the project does not require competitive bidding. Professional AV integrator firms are in the business of selling, engineering, installing and providing ongoing service and support for a wide variety of audiovisual and related technologies, systems, and equipment. Equipment manufacturers may also provide

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36-3% There are many types, sizes, and complexity levels of audiovisual systems. The user should apply this standard as appropriate to fit the particular project circumstances. Two common approaches are described here, although there are many possible variations in contractual agreements and relationships between the design and construction team. For example: Consultant-led projects when the monetary value of the audiovisual systems is high, the building design and construction timeframe is long, or the installation work must



Use 3% Element Height as starting point



- Otherwise use 3%EH
- 3%ElementHeight = 6 from old 4/6/8 rule
- Farthest viewer to be no farther than 6 x Image Height (IH)
 - e.g. if Image Height = 1m, then farthest viewer should be within 6m
 - e.g. if Farthest Viewer is 12m from screen, then Image Height to be at least 2m high

REMEMBER – THIS IS MINIMUM!!

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16:9 or 16:10?

Using 16:10 is tempting...



- For any given image size in diagonal inches (e.g. 100", 140" etc) the image size is 8.1% higher
- But most content and computer video output is 16:9
- So how does it work if content will be both 16:9 and 16:10?

On a 16:9 display 16:10 images display at full height





But on a 16:10 screen 16:9 images have reduced height



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100" example



A 100" 16:9 image is 2214mm x 1245mm.

A 100" 16:10 image is 2154mm x 1346mm.

- A 100" 16:10 image is 60mm less wide than its 16:9 equivalent
 - (2214mm 2154mm = 60mm)
- Add the lost height
 - (1346mm 1212mm = 134mm)
- Total lost height = 194mm
- YOU LOSE 10% IMAGE HEIGHT WHEN SHOWING 16:9 IMAGES ON 16:10 SCREENS



16:9 is 3% wider than 16:10 But combined impact gives this 10% height difference

16:10 is a heritage aspect ratio



16:10 is exclusively driven by WUXGA resolution
1920 x 1200
This is being replaced by UHD ('4K')
3840 x 2160
UHD is 16:9

- Using DISCAS, 'image size' really means 'image height'.
- To maximise image height, use 16:9.

16.9

Unless there's another special reason, or all your content will be 16:10, then use 16:9 as your go-to option.





Getting wider...!

Microsoft first showed 32:9





The theory...



...and the practice

- > Two low cost UST projectors
- ➤ 'Hard edge' blend
- Difficult to engineer
- Disappointing quality











Risk of viewing angles too acute for widest in-person participants

Alternative option – 28:9





- > Two pro-grade projectors with UST lenses
- 'Soft-edge' blend (overlapping image)
- Approx 28:9 aspect ratio
- > Difficult to engineer
- Good quality
- > Expensive!

Twin displays – not for Front Row!!



Microsoft cracks it! 21:9





Unpacking Front Row





Main content window

Status and chat windows

21:9 is close to Cinemascope – a validated format

Remote participants:

> As close to lifesize as possible

As close to eye height as possible

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
 - \blacktriangleright (0.6 x 6 = 3.6)
 - Use AVIXA DISCAS standard
 Use it critically
 Adapt it to your use case it's not a law
 Show your workings get user buy in



Cisco Telepresence room conversion to Signature Meeting Room



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- ▶ IX5000 etc end of life
- Display unit being removed
- Room furniture and configuration being retained
- NB specify screen size relative to table width





Max image size in standard room height?





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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







So what are the implications?



The move to radically larger display sizes
 Microsoft backs projection
 But if projection, it must be done properly

...so it has to be Projection Done Properly!



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- Both images are projected, shot with mobile phone – unretouched (no Photoshop!)
- Which one do we need for MTRs?
- What do we need for MTRs?!
 - AVIXA ISCR standard!
 Focus on black levels



https://youtu.be/W-cAxx_n8Gg

Use of ALR (ambient light rejecting) screens = essential

- You need a screen that is black until projected light hits it
- Its ALL about black levels!
- The only material to use with Front Row is dnp Supernova
- On Epson and Digital Projection booths at ISE



dnp VISIOSIGN

New Front Row display at ISE 2023



Please come to the Epson booth 3J100 to see something new and exciting!
 Please book a slot to meet me there!

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





Support and reference materials

MTR Displays – Visual Displays' Quick Guide

- Comprehensive coverage of specification issues
- Wide range of display choices and sizes
- Based in VDL's Digital Canvas
- Standards-curated bundles of dnp ALR (ambient light rejecting) screens, projectors, mounts/credenzas
- Download here: <u>https://visualdisplaysltd.com/resources</u> <u>/resources/MTR-quick-guidedownload</u>





All-in-one

credenza unit

Floorstanding system

What's included... What's included...





dnp Supernova

Epson projector with UST lens

Floor mounting

system

ALR screen

Ceiling mounted

What's included...

	dnp Superno ALR screen
_	

Epson projector with UST lens and Ceiling mounting



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MTR White Paper



Microsoft Teams Rooms – Displays, Projection and the bigger picture

A White Paper by Greg Jeffreys, Visual Displays Ltd

A White Paper concerned at high level with the design and deployment of Microsoft Teams Rooms (MTRs) into physical three-dimensional workspaces.



Download here: <u>https://visualdisplaysltd.com/resources/resources/Microsoft-Teams-Rooms-Displays-Projection-and-the-bigger-picture</u>

All calculators & tools – free downloads from Visual Displays





application?

viewing and gaming

Resources				
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Webinars Our education program offers something for everyone including CTS RU accredited sessions. Our 1 hour entine webinars are free to join and supported by comprehensive materials.	Videos Watch our useful and educational video content including webinar recordings. For advice and type to help ensure you get the vitry best from jour displays.	ALR Projection Use this reference quide to learn about ambient light rejecting (ALR) projection screen technology and how it con transform your AV offering:	Microsoft Teams Rooms - Displays, Projection and the bigger picture A When Paper by Grog Jeffreys, Visual Displaye Ltd	
SMC A				-
How to choose the right screen One size definitely does NOT to all	3 Step Guide to Display Success Summary Table Use this table to calculate required image size and choose the right display.	AV Industry Standards Using AV standards is the single most powerful way you can impact the way you are seen by clients. Find links to all relevant standards here.	White Papers, best practice and articles Want to understand more detailed background and reductive background and reducting bout the principles and practices thus interm our work?	l
		16:9 or 16:10	0	
VDL Digital Canvas brochure The ultimate display solution for Microsoft Teams Rooms. Zeom and all hybrid meeting and toaching spaces	VDL Digital Canvas for Higher Education Brochure Large screen staching and hybrid learning display system for Higher Education	16:9 or 16:10 - aspect ratio made easy We are requerently asked about screen aspect ratio and which one to use. Why is this and what's the answer?	Eyestrain & eyegonomics * Tayognamics * regonomics for the eyes Learn have to create displays that are balanced with the surrounding cmirrorment to get bight, cliat images without eye strain.	
2		e ő •	<u>eö</u> v•	
Meeting & teaching room design Achieve better results and significant spiking, using our took and expensive to deliver ouristanding technology enabled spaces for yeas of productive use	Choosing the right display Understanding the four main display technology categories, how to avoid expensive matsakes and how to get the best results.	Projection vs LED Optical ambient light rejecting (ALT) projection displays are essential part of the toolius for those specifying larger images whether for signage, meeting rooms, teaching or kikosooft Tearms Rooms.	Projection vs LCD Video Wall Why wate for an image that, is binken up by benef lines when specialist empresion offers bright, sharp and seamless with significant cost savings?	
ي الآلي ال	570	4K FULLHD		
Projection vs Single Flat Panel You are looking for a single panel display for a bright miscraig room, a classroom or a common arts. It looks like a choice botween LCDLLD fise panels or a projection	Futureproofing your investment At a time when the next Clympics will be partly broadcast in BK resolution, the issue of future profing clients systems has to be considered.	The myth of 4K - content and resolution Why HD is better than 4K in practice for PixAV	Complete Laser Displays Brochures Download our Complete Laser Dinglay and Complete Laser Display XL Biochures and Technical Specifications	

Useful calculator tools

Use these tools to calculate projected image contrast, brightness, and display image size. Includes dnp Supernova ALR demo.







Projected Image Contrast Calculator

Projected Image Brightness Calculators

DISCAS calculator

The dnp Supernova comparison

https://visualdisplaysltd.com/resources

Microsoft Signature Meeting Rooms How to specify the display?



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SCREEN

- dnp Supernova Infinity STW, 3.5m 4m wide, 21:9
- Sized using DISCAS related to Front Row content window

► PROJECTOR

- Epson EB-PU series
- UST lens
- Lumens specified using AVIXA ISCR standard calculator
- MOUNT
 - Floor mount (Heckler, VDL etc)
 - Credenza (VDL etc)
 - Ceiling
- DESIGN
 - VDL wrap-around packages
 - ▶ Complete specification, room audit, 3D CAD, standards calculations service
 - Guaranteed results





Webinar programme





See other videos on our YouTube channel

Visual Displays

PLAYLISTS

COMMUNITY

Webinar: Projection or dvLED?

28 views - 2 weeks ago

Webinar: MTR update

83 views - 1 month ago

for Education spaces

VDL Digital Canvas demonstration at LTSMG : The VDL Digital Canvas for Higher Education : Visual Displays create stunning display

CHANNELS

ABOUT

13 views • 1 month ago

Avoiding glare and poor quality images with

n-depth look at Front P

.....

An in-depth look at Front Row - specification,

design, deployment and certification

36 views · 4 months ago

the use of matt screens at the University of ...

specification, des

@visualdisplays3690 17 subscribers VIDEOS

Standards update - The new Avixa Image

Working with consultants on the University :

System Contrast Ratio (ISCR)

10 views · 13 days add

of Glasgow project

7 views • 1 month app

https://www.youtube.com/chan nel/UCmkU84QIZcet6URkVK8mJS w/videos



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We design, supply, install and support

visual display systems for the ProAV channel

Subscribed

Showing how ALR projection created

127 views - 1 month add

68 views + 5 months ago

stunning AV spaces at the University of ...

a deeper dive into Mic

WEBINAR - MTR update - a deeper dive into

Microsoft's new Meet the Hive release

: VDL Digital Canvas demonstration at LTSMG



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Greg Jeffreys, Director

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ALR technology demonstration





Play video here https://www.yout ube.com/watch? v=i8209xYxRxk

Ambient Light Rejecting projection materials

Latest Microsoft materials



- Updated & extended Hive video
 - <u>https://www.microsoft.com/ enus/videoplayer/embed/RE5</u> <u>0xgt?autoplay=false</u>

New online materials

<u>https://learn.microsoft.com/en-us/microsoftteams/teams-meeting-room-guidance?tabs=uses</u>



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Upgrade from Skype for Business Security, compliance, and privacy Manage and monitor Teams Chat, teams, and channels Meetings and audic conferencing Plan your deployment Meetings, webinars, and live events Quick start 3 Manage meeting policies Manage meetings settings

Emails sent to users when their settings change > Manage meetings and meeting features Set up the Meeting Migration Service (MMS) Set up for webinars in Microsoft Teams > Live events

Create a Teams hybrid meeting experience

Learn / Microsoft Teams / Microsoft Teams Rooms / Plan /

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Meeting room guidance for Teams

Article • 08/03/2022 • 23 minutes to read • 8 contributors • Applies to: Microsoft Teams

C Feedback

This article is intended to guide users on how to optimize meeting spaces with Microsoft Teams Rooms solutions and devices. It includes information on Teams Rooms device and solution uses, layouts, and specifications.

Meeting room uses and layouts Enhanced Microsoft Teams Room

Overview

Microsoft Teams Rooms solutions offer flexibility of purpose and even flexibility of movement throughout a space that traditional meeting rooms do not. For example, with Teams Rooms devices, users can enhance their collaboration with a digital whiteboard, and Intelligent people-tracking cameras make sure every local participant can be seen no matter where they are in the room. Any type of space and any type of meeting can be optimized with Teams Rooms devices or Teams Rooms solutions.

Presentation-focused meetings

Meet and present meetings are the first bucket, and this meeting is generally more formal. Audio-visual is a priority, and there is a focus on presenting content. The device is typically fixed, allowing users to remain seated while

New AV Magazine feature







Microsoft Teams Rooms (MTRs) represent a once-in-a-generation business opportunity for the AV industry. Here, **Greg Jeffreys** explains how... https://edition.pagesuiteprofessional.co.uk/html5/reader/production/default.aspx?pubnam e=&edid=ee4e18d1-75b2-42e9-9670-d60d3620b73d&pnum=41

AV User Group





https://www.avusergroup.com/



LTSMG – Learning and Teaching Spaces Management Group



HE & FE campus technology managers association



https://ltsmg.co.uk/



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 2022/23?!
 - User-created layouts
- Need to see how room self-presents to other rooms
- If you can't have evaluation spaces then you need reference spaces

Let us help you design and build your test spaces.

VDL Digital Canvas – Freestanding, complete, UST projection





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

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







Our background in immersive brought us here



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Simulation & immersive displays



- Breaking the Fourth Wall
- Thinking in 'cues'













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