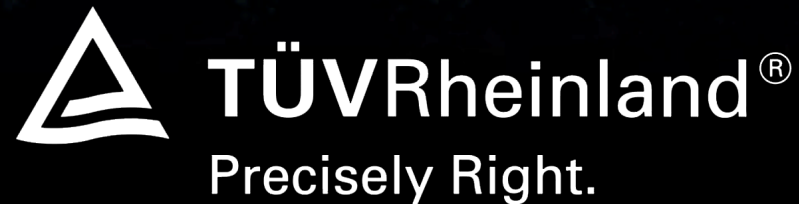


# **PART X: TÜV RHEINLAND**

## **Industry Leading Certification and Requirements Roadmap**



BLUE LIGHT  
SUMMIT 2020



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Vice President of Electronics, TÜV Rheinland





**STANLEY LIU**

Technical Competence Center Director,  
TÜV Rheinland Group



# Designed for Human Health



High-Energy Blue Light



Maximum Energy



Color Performance

# **Our Mission**

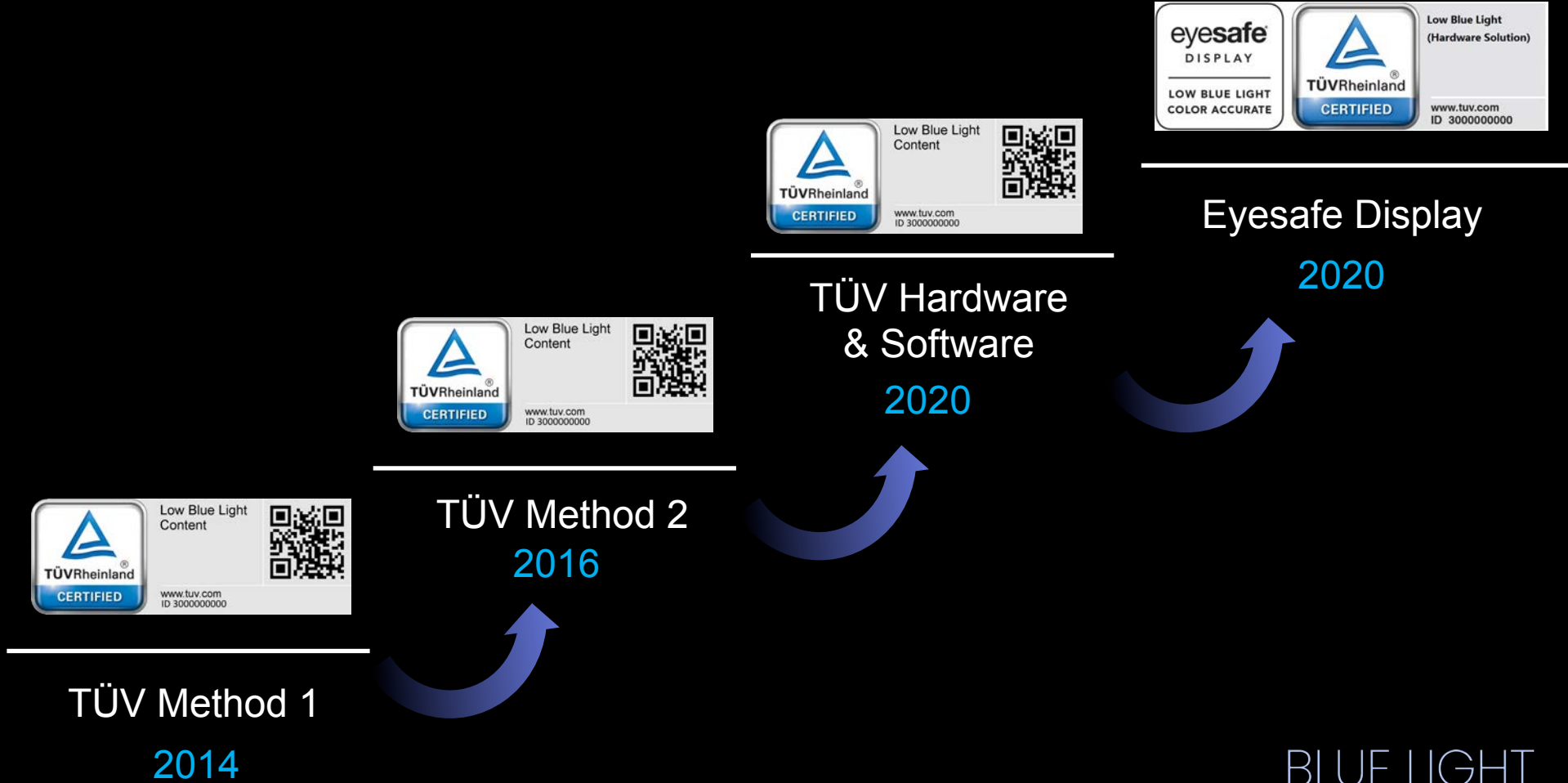
**To develop health-driven research  
and standards for certification of the  
healthiest displays in the world**

**TÜV Rheinland Certification is now the  
largest low blue light certification  
program in the world**

# Industry Leading Low Blue Light Solution Roadmap

Health & Safety Parameters ↑

Evolution of Low Blue Light



# Eyesafe Display Standard & Certification Program






**TÜV Rheinland Eyesafe Display Standard is jointly developed by TÜVR and Eyesafe based on the latest scientific research about blue light and display technology**

Third party independent testing and certification

Manufacturers can use Eyesafe label for promotion based on the Eyesafe low blue light solution and authorization

# Eyesafe Display Requirements & Service Label

CATEGORY	ITEMS	REQUIREMENTS
 High-Energy Blue Light	Blue light emission in the 415 to 455nm toxic region	The ratio of light in the range from 415-455nm compared to 400-500nm must be less than 50%
	Weighted blue light toxicity emissions based on ICNIRP Guidelines	The Blue light toxicity of weighted blue light vs total lux must be less than 0.085
 Maximum Energy	Photobiological Safety requirement based on IEC/EN 62471	The blue light emission of the product must meet exempt group limits (Must be lower than 100 W.m-2.str-1)
 Color Performance	Color Gamut Coverage %	<ul style="list-style-type: none"> <li>For product with sRGB color mode: ≥95% of standard sRGB color space in CIE 1931;</li> <li>For product with Adobe RGB color mode: ≥90% of standard Adobe RGB color space in CIE 1931;</li> <li>For product with DCI-P3 color mode: ≥90% of standard DCI-P3 color space in CIE 1931;</li> <li>For product with NTSC color mode: ≥72% of standard NTSC color space in CIE 1931</li> </ul>
	Color Temperature	The Correlated Color Temperature (CCT) shall be within the range of 5500K and 7000K Note: only applies to AIO and Monitor





# EYESAFE CERTIFIED PANELS

Customer	Panel type			Model Information		
	Monitor	Laptop	Tablet	Model #	Size (in Inch)	Resolution
BOE	X			MV215FHM-N71	21.5"	1920 x 1080
	X			MV230FHM-N41	23"	1920 x 1080
	X			MV238QHM-N12	23.8"	2560 x 1440
	X			MV240WUM-N51	24"	1920 x 1200
	X			MV270FHM-N41	27"	1920 x 1080
	X			MV270QHM-N61	27"	2560 x 1440
		X		NE140FHM-N46	14"	1920 x 1080
TCL CSOT	X			MG2701B01-X	27"	1920 x 1080
			X	CSOT 10.X WQXGA Tablet	11"	2560 x 1600
		X		CSOT 14.0 UHD Notebook	14"	3840 x 2160
Wistron	X			W238HIAP1-LWD02	23.8"	1920 x 1080
	X			W238HBAP1-PWD03	23.8"	1920 x 1080
Innolux	X			M238HCA-L5Z	23.8"	1920 x 1080
AUO	X			M270DAN07.1	27.0"	1920 x 1080
IVO		X		M140NWHE R0	14.0"	2240 x 1400

# EYESAFE CERTIFIED DEVICES

Customer	Product category		Model Information		
	Monitor	Laptop	Model #	Size (in Inch)	Resolution
Lenovo	X		P24h-2L		
	X		T24i-2L	23.8	1920x1080
	X		T24i-2L	23.8	1920x1080
				23.8	1920x1080
				27	2560x1440
	X		T27h-2L	27	2560x1440
				27	2560x1440
				27	2560x1440
	X		S28u-10	28"	
	X		T27hv-20		
	X		F19238F**		1920 X 1080
	X		F19270Q**)		1920 X 1080
	X	Yoga Slim 7 Pro	14"	2240 x 1440	
			14"	2880 x 1800	
			14"	2240 x 1440	
Acer	X		BL270*****	27"	1920 X 1080
	X		XV272 LV, VG272 LV, KG271 LV, KG272 LV, XF273 LV	27	1920 x 1080
HP		X	TPN-Q225	13.3	3840 x 2160
				13.3	3840 x 2160
		X	TPN-C149	15.6	3840 x 2160
		X	TPN-Q250	13.5	3000 x 2000
		X	TPN-Q226	15.6	3840 x 2160



**TÜVRheinland<sup>®</sup>**  
Precisely Right.