

Chart definition of the Universal Test Target

Chart definition of the Universal Test Target						
D						
						if not mentioned x and y coordinates describe the lower left corner of the structure and all geometric values are given in mm
Document height	420					lower left corner of the document is defined as 0,0 mm
Document width	300					
surrounding black line	The chart is surrounded by a black line with 1mm thickness with the center of the line being the border of the chart. Line is on top of all structures					
gray bars	x	y	width	height	aimed L* value	
horizontal black	0	290	420	5	max black	
horizontal white	0	285	420	5	substrate white	
horizontal gray	0	280	420	5	50	
vertical black	5	0	5	300		
vertical white	10	0	5	300		
vertical gray	15	0	5	300		
Background checker board	x	y	width	height	aimed L* value	
first white patch	0	0	10	10	substrate white	
first gray patch	10	0	10	10	50	
continued as checker board	Each patch is surrounded by a black line of 0,38 mm thickness with the line center being the border of each patch.					
vertical scale	x	y	width	height	aimed L* value	Contour
center line	30	0	0	300	max black	0.19
mm lines	29	every mm	1	0	max black	0.19
5 mm lines	28.5	every 5 mm	1.5	0	max black	0.19
10 mm lines	27.5	every 10 mm	2.5	0	max black	0.19
lettering	every 10 mm, Verdana 8 pt on left side of scale					
1/16 Inch lines	30	every 1/16 Inch	1	0	max black	0.19
1/2 Inch lines	30	every 1/2 Inch	1.5	0	max black	0.19
Inch lines	30	every Inch	2.5	0	max black	0.19
lettering	every Inch, Verdana 8 pt on right side of scale					
surrounding white	0	20	20	300	substrate white	behind both gscales
Scale on top of background checker board and behind horizontal gray bars						
horizontal scale	x	y	width	height	aimed L* value	Contour
center line	0	272.4	420	0	max black	0.19
mm lines		every mm	0	1	max black	0.19
5 mm lines		every 5 mm	0	1.5	max black	0.19
10 mm lines		every 10 mm	0	2.5	max black	0.19
lettering	every 10 mm, Verdana 8 pt on upper side of scale					
1/16 Inch lines		every 1/16 Inch	0	1	max black	0.19
1/2 Inch lines		every 1/2 Inch	0	1.5	max black	0.19
Inch lines		every Inch	0	2.5	max black	0.19
lettering	every Inch, Verdana 8 pt on lower side of scale					
surrounding white	0	265	420	15	substrate white	behind both scales
Scale on top of background checker board and behind vertical gray bars						



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left vertical gray scale											
	x	y	width	height	aimed L*	Density	Tolerances	Mean	Max		
GS_L_1	105	83,5	15	7	95	0,06	Delta L	<2	<3		
GS_L_2	105	90,5	15	7	90	0,12	Delta E	<2	<3		
GS_L_3	105	97,5	15	7	85	0,18					
GS_L_4	105	104,5	15	7	80	0,25	Numbering	Color	Typo		
GS_L_5	105	111,5	15	7	75	0,32	Numbers on right side	orange	Verdana 8pt		
GS_L_6	105	118,5	15	7	70	0,39					
GS_L_7	105	125,5	15	7	65	0,47					
GS_L_8	105	132,5	15	7	60	0,55					
GS_L_9	105	139,5	15	7	55	0,64					
GS_L_10	105	146,5	15	7	50	0,73					
GS_L_11	105	153,5	15	7	45	0,84					
GS_L_12	105	160,5	15	7	40	0,95					
GS_L_13	105	167,5	15	7	35	1,07					
GS_L_14	105	174,5	15	7	30	1,21					
GS_L_15	105	181,5	15	7	25	1,36					
GS_L_16	105	188,5	15	7	20	1,52					
GS_L_17	105	195,5	15	7	15	1,72					
GS_L_18	105	202,5	15	7	10	1,95					
GS_L_19	105	209,5	15	7	5	2,26					
GS_L_20	105	216,5	15	7	3	Dmax >2.3					
right vertical gray scale											
	x	y	width	height	aimed L*	Density	Tolerances	Mean	Max		
GS_R_1	315	216,5	15	7	95	0,06	Delta L	<2	<3		
GS_R_2	315	209,5	15	7	90	0,12	Delta E	<2	<3		
GS_R_3	315	202,5	15	7	85	0,18					
GS_R_4	315	195,5	15	7	80	0,25	Numbering	Color	Typo		
GS_R_5	315	188,5	15	7	75	0,32	Numbers on left side	orange	Verdana 8pt		
GS_R_6	315	181,5	15	7	70	0,39					
GS_R_7	315	174,5	15	7	65	0,47					
GS_R_8	315	167,5	15	7	60	0,55					
GS_R_9	315	160,5	15	7	55	0,64					
GS_R_10	315	153,5	15	7	50	0,73					
GS_R_11	315	146,5	15	7	45	0,84					
GS_R_12	315	139,5	15	7	40	0,95					
GS_R_13	315	132,5	15	7	35	1,07					
GS_R_14	315	125,5	15	7	30	1,21					
GS_R_15	315	118,5	15	7	25	1,36					
GS_R_16	315	111,5	15	7	20	1,52					
GS_R_17	315	104,5	15	7	15	1,72					
GS_R_18	315	97,5	15	7	10	1,95					
GS_R_19	315	90,5	15	7	5	2,26					
GS_R_20	315	83,5	15	7	3	Dmax >2.3					

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upper horizontal gray scale											
	x	y	width	height	aimed L*	Density	Tolerances	Mean	Max		
GS_U_1	276,5	212,5	7	15	95	0,06	Delta L	<2	<3		
GS_U_2	269,5	212,5	7	15	90	0,12	Delta E	<2	<3		
GS_U_3	262,5	212,5	7	15	85	0,18					
GS_U_4	255,5	212,5	7	15	80	0,25	Numbering	Color	Typo		
GS_U_5	248,5	212,5	7	15	75	0,32	Numbers on lower side	orange	Verdana 8pt		
GS_U_6	241,5	212,5	7	15	70	0,39					
GS_U_7	234,5	212,5	7	15	65	0,47					
GS_U_8	227,5	212,5	7	15	60	0,55					
GS_U_9	220,5	212,5	7	15	55	0,64					
GS_U_10	213,5	212,5	7	15	50	0,73					
GS_U_11	206,5	212,5	7	15	45	0,84					
GS_U_12	199,5	212,5	7	15	40	0,95					
GS_U_13	192,5	212,5	7	15	35	1,07					
GS_U_14	185,5	212,5	7	15	30	1,21					
GS_U_15	178,5	212,5	7	15	25	1,36					
GS_U_16	171,5	212,5	7	15	20	1,52					
GS_U_17	164,5	212,5	7	15	15	1,72					
GS_U_18	157,5	212,5	7	15	10	1,95					
GS_U_19	150,5	212,5	7	15	5	2,26					
GS_U_20	143,5	212,5	7	15	3	Dmax >2.3					
lower horizontal gray scale											
	x	y	width	height	aimed L*	Density	Tolerances	Mean	Max		
GS_D_1	143,5	87,5	7	15	95	0,06	Delta L	<2	<3		
GS_D_2	150,5	87,5	7	15	90	0,12	Delta E	<2	<3		
GS_D_3	157,5	87,5	7	15	85	0,18					
GS_D_4	164,5	87,5	7	15	80	0,25	Numbering	Color	Typo		
GS_D_5	171,5	87,5	7	15	75	0,32	Numbers on upper side	orange	Verdana 8pt		
GS_D_6	178,5	87,5	7	15	70	0,39					
GS_D_7	185,5	87,5	7	15	65	0,47					
GS_D_8	192,5	87,5	7	15	60	0,55					
GS_D_9	199,5	87,5	7	15	55	0,64					
GS_D_10	206,5	87,5	7	15	50	0,73					
GS_D_11	213,5	87,5	7	15	45	0,84					
GS_D_12	220,5	87,5	7	15	40	0,95					
GS_D_13	227,5	87,5	7	15	35	1,07					
GS_D_14	234,5	87,5	7	15	30	1,21					
GS_D_15	241,5	87,5	7	15	25	1,36					
GS_D_16	248,5	87,5	7	15	20	1,52					
GS_D_17	255,5	87,5	7	15	15	1,72					
GS_D_18	262,5	87,5	7	15	10	1,95					
GS_D_19	269,5	87,5	7	15	5	2,26					
GS_D_20	276,5	87,5	7	15	3	Dmax >2.3					

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color patches left											
	x	y	width	height	aimed L*	aimed a*	aimed b*	Tolerances Delta E	Mean	Max	
A1	140	190	10	10	18	24	-61	A1:C4	<5	<7	
A2	140	180	10	10	82	3	90	A5:C6	<4	<5	
A3	140	170	10	10	61	38	74	A7:C9	<2	<4	
A4	140	160	10	10	21	35	-32				
A5	140	150	10	10	32	24	32	Numbering	Color	Typo	
A6	140	140	10	10	45	-32	38	Letters at bottom	orange	Verdana 8pt	
A7	140	130	10	10	85	-2	-9	Numbers on right side	orange	Verdana 8pt	
A8	140	120	10	10	86	13	7				
A9	140	110	10	10	90	-17	6				
B1	150	190	10	10	53	-45	38				
B2	150	180	10	10	49	56	-14				
B3	150	170	10	10	35	12	-53				
B4	150	160	10	10	72	-25	65				
B5	150	150	10	10	64	20	19				
B6	150	140	10	10	53	8	-27				
B7	150	130	10	10	85	13	0				
B8	150	120	10	10	85	-11	26				
B9	150	110	10	10	85	4	-6				
C1	160	190	10	10	46	64	34				
C2	160	180	10	10	48	-34	-31				
C3	160	170	10	10	48	54	21				
C4	160	160	10	10	71	19	80				
C5	160	150	10	10	47	-5	-25				
C6	160	140	10	10	69	-35	-1				
C7	160	130	10	10	86	-19	-1				
C8	160	120	10	10	87	10	18				
C9	160	110	10	10	85	-14	-9				
color patches right											
	x	y	width	height	aimed L*	aimed a*	aimed b*	Tolerances Delta E	Mean	Max	
D1	260	190	10	10	85	-14	-9	D6:F9	<5	<7	
D2	260	180	10	10	87	10	18	D4:F5	<4	<5	
D3	260	170	10	10	86	-19	-1	D1:F3	<2	<4	
D4	260	160	10	10	69	-35	-1				
D5	260	150	10	10	47	-5	-25	Numbering	Color	Typo	
D6	260	140	10	10	71	19	80	Letters at bottom	orange	Verdana 8pt	
D7	260	130	10	10	48	54	21	Numbers on left side	orange	Verdana 8pt	
D8	260	120	10	10	48	-34	-31				
D9	260	110	10	10	46	64	34				
E1	270	190	10	10	85	4	-6				
E2	270	180	10	10	85	-11	26				
E3	270	170	10	10	85	13	0				
E4	270	160	10	10	53	8	-27				
E5	270	150	10	10	64	20	19				
E6	270	140	10	10	72	-25	65				
E7	270	130	10	10	35	12	-53				
E8	270	120	10	10	49	56	-14				
E9	270	110	10	10	53	-45	38				
F1	280	190	10	10	90	-17	6				
F2	280	180	10	10	86	13	7				
F3	280	170	10	10	85	-2	-9				
F4	280	160	10	10	45	-32	38				
F5	280	150	10	10	32	24	32				
F6	280	140	10	10	21	35	-32				
F7	280	130	10	10	61	38	74				
F8	280	120	10	10	82	3	90				
F9	280	110	10	10	18	24	-61				



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additional chart border	x	y	width	height	aimed L* value	Contour	contour color							
Frame for additional color chart	135	100	150	100	transparent	0,76	max black							
labeling patch (for sponsor logo, chart provider etc.)	x	y	width	height	aimed L* value	Contour	contour color							
patch	175	175	70	25	substrate white	0,38	max black							
Universal test chart lettering	centered at 210, 195, Verdana Bold 14pt max black													
Serialization	at right border vertical orientation using verdana 10pt and the following format Serial No. 000001, Type: standard, expires 03/2012, manufactured by XXX													
slanted edge box TL	center x	center y	width	height	aimed L* value	Contour	contour color							
outer slanted edge box 0	210	150	25	25	62									
inner tilted rectangle	210	150	15	15	44			5° tilted						
upper left cross	199	161	3	3		0,38	max black							
middle left cross	199	137,5	3	3		0,38	max black							
lower left cross	199	114	3	3		0,38	max black							
upper right cross	221	161	3	3		0,38	max black							
middle right cross	221	137,5	3	3		0,38	max black							
lower right cross	221	114	3	3		0,38	max black							
visual resolution box	210	125	25	25	substrate white									
in visual resolution box the structures of an ISO pattern No. 2 at frequencies of 2.8 to 18 cycles per mm shall be inserted (centered) at highest density possible (rotated 135° clockwise from vertical orientation)														
slanted edge box TC	center x	center y	width	height	aimed L* value	Contour	contour color							
outer slanted edge box 1	350	150	25	25	62									
inner tilted rectangle	350	150	15	15	44			5° tilted						
upper left cross	339	161	3	3		0,38	max black							
middle left cross	339	137,5	3	3		0,38	max black							
lower left cross	339	114	3	3		0,38	max black							
upper right cross	361	161	3	3		0,38	max black							
middle right cross	361	137,5	3	3		0,38	max black							
lower right cross	361	114	3	3		0,38	max black							
visual resolution box	350	125	25	25	substrate white									
in visual resolution box the structures of an ISO pattern No. 2 at frequencies of 2.8 to 18 cycles per mm shall be inserted (centered) at highest density possible (rotated 135° clockwise from vertical orientation)														
slanted edge box TR	center x	center y	width	height	aimed L* value	Contour	contour color							
outer slanted edge box 2	350	250	25	25	62									
inner tilted rectangle	350	250	15	15	44			5° tilted						
upper left cross	339	261	3	3		0,38	max black							
upper middle cross	362,5	261	3	3		0,38	max black							
upper right cross	386	261	3	3		0,38	max black							
lower left cross	339	239	3	3		0,38	max black							
lower middle cross	362,5	239	3	3		0,38	max black							
lower right cross	386	239	3	3		0,38	max black							
visual resolution box	375	250	25	25	substrate white									
in visual resolution box the structures of an ISO pattern No. 2 at frequencies of 2.8 to 18 cycles per mm shall be inserted (centered) at highest density possible (rotated 45° clockwise from vertical orientation)														
slanted edge box CL	center x	center y	width	height	aimed L* value	Contour	contour color							
outer slanted edge box 3	210	250	25	25	62									
inner tilted rectangle	210	250	15	15	44									
upper left cross	199	261	3	3		0,38	max black							
upper middle cross	222,5	261	3	3		0,38	max black							
upper right cross	246	261	3	3		0,38	max black							
lower left cross	199	239	3	3		0,38	max black							
lower middle cross	222,5	239	3	3		0,38	max black							
lower right cross	246	239	3	3		0,38	max black							
visual resolution box	235	250	25	25	substrate white									
in visual resolution box the structures of an ISO pattern No. 2 at frequencies of 2.8 to 18 cycles per mm shall be inserted (centered) at highest density possible (rotated 45° clockwise from vertical orientation)														



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slanted edge box CC	center x	center y	width	height	aimed L* value	Contour	contour color						
outer slanted edge box 4	70	250	25	25	62								
inner tilted rectangle	70	250	15	15	44								
upper left cross	59	261	3	3		0,38	max black						
upper middle cross	82.5	261	3	3		0,38	max black						
upper right cross	106	261	3	3		0,38	max black						
lower left cross	59	239	3	3		0,38	max black						
lower middle cross	82.5	239	3	3		0,38	max black						
lower right cross	106	239	3	3		0,38	max black						
visual resolution box	95	250	25	25	substrate white								
in visual resolution box the structures of an ISO pattern No. 2 at frequencies of 2.8 to 18 cycles per mm shall be inserted (centered) at highest density possible (rotated 45° clockwise from vertical orientation)													
slanted edge box CR	center x	center y	width	height	aimed L* value	Contour	contour color						
outer slanted edge box 5	70	150	25	25	62								
inner tilted rectangle	70	150	15	15	44								
upper left cross	59	161	3	3		0,38	max black						
middle left cross	59	137.5	3	3		0,38	max black						
lower left cross	59	114	3	3		0,38	max black						
upper right cross	81	161	3	3		0,38	max black						
middle right cross	81	137.5	3	3		0,38	max black						
lower right cross	81	114	3	3		0,38	max black						
visual resolution box	70	125	25	25	substrate white								
in visual resolution box the structures of an ISO pattern No. 2 at frequencies of 2.8 to 18 cycles per mm shall be inserted (centered) at highest density possible (rotated 135° clockwise from vertical orientation)													
slanted edge box BL	center x	center y	width	height	aimed L* value	Contour	contour color						
outer slanted edge box 6	70	50	25	25	62								
inner tilted rectangle	70	50	15	15	44								
upper left cross	59	61	3	3		0,38	max black						
upper middle cross	82.5	61	3	3		0,38	max black						
upper right cross	106	61	3	3		0,38	max black						
lower left cross	59	39	3	3		0,38	max black						
lower middle cross	82.5	39	3	3		0,38	max black						
lower right cross	106	39	3	3		0,38	max black						
visual resolution box	95	50	25	25	substrate white								
in visual resolution box the structures of an ISO pattern No. 2 at frequencies of 2.8 to 18 cycles per mm shall be inserted (centered) at highest density possible (rotated 45° clockwise from vertical orientation)													
slanted edge box BC	center x	center y	width	height	aimed L* value	Contour	contour color						
outer slanted edge box 7	210	50	25	25	62								
inner tilted rectangle	210	50	15	15	44								
upper left cross	199	61	3	3		0,38	max black						
upper middle cross	222.5	61	3	3		0,38	max black						
upper right cross	246	61	3	3		0,38	max black						
lower left cross	199	39	3	3		0,38	max black						
lower middle cross	222.5	39	3	3		0,38	max black						
lower right cross	246	39	3	3		0,38	max black						
visual resolution box	235	50	25	25	substrate white								
in visual resolution box the structures of an ISO pattern No. 2 at frequencies of 2.8 to 18 cycles per mm shall be inserted (centered) at highest density possible (rotated 45° clockwise from vertical orientation)													
slanted edge box BR	center x	center y	width	height	aimed L* value	Contour	contour color						
outer slanted edge box 8	350	50	25	25	62								
inner tilted rectangle	350	50	15	15	44								
upper left cross	339	61	3	3		0,38	max black						
upper middle cross	362.5	61	3	3		0,38	max black						
upper right cross	386	61	3	3		0,38	max black						
lower left cross	339	39	3	3		0,38	max black						
lower middle cross	362.5	39	3	3		0,38	max black						
lower right cross	386	39	3	3		0,38	max black						
visual resolution box	375	50	25	25	substrate white								
in visual resolution box the structures of an ISO pattern No. 2 at frequencies of 2.8 to 18 cycles per mm shall be inserted (centered) at highest density possible (rotated 45° clockwise from vertical orientation)													
optional document reference chart													
An optional document reference chart can be placed in the center bottom part of the UTT.													
It should not be higher than 25 mm and nor wider than 250 mm and shall be horizontally and vertically centered between the bottom and the lower slanted edge boxes.													
The design of the scan reference chart is up to the manufacturer but it should meet the tolerances defined for the UTT.													

