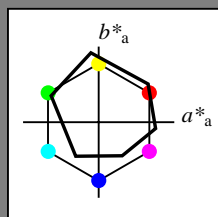


Input: Colorimetric Offset Reflective System ORS18a

with *rgb* data of the four elementary hues

- 1 0 0 = Red *R*
- 1 1 0 = Yellow *J*
- 0 1 0 = Green *G*
- 0 0 1 = Blue *B*



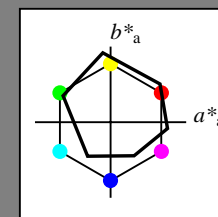
ORS18a; adapted (a) CIELAB data

	$L^*=L^*_a$	$a^*_a$	$b^*_a$	$C^*_{ab,a}$	$h^*_{ab,a}$
$O_{Ma}$	47.94	65.39	50.52	82.63	38
$Y_{Ma}$	90.37	-10.26	91.75	92.32	96
$L_{Ma}$	50.9	-62.83	34.96	71.91	151
$C_{Ma}$	58.62	-30.34	-45.01	54.3	236
$V_{Ma}$	25.72	31.1	-44.4	54.22	305
$M_{Ma}$	48.13	75.28	-8.36	75.74	354
$N_{Ma}$	18.01	0.0	0.0	0.0	0
$W_{Ma}$	95.41	0.0	0.0	0.0	0
$R_{CIE}$	39.92	58.66	26.98	64.57	25
$J_{CIE}$	81.26	-2.16	67.76	67.79	92
$G_{CIE}$	52.23	-42.25	11.76	43.87	164
$B_{CIE}$	30.57	1.15	-46.84	46.86	271

Output: Colorimetric Offset Reflective System ORS18a

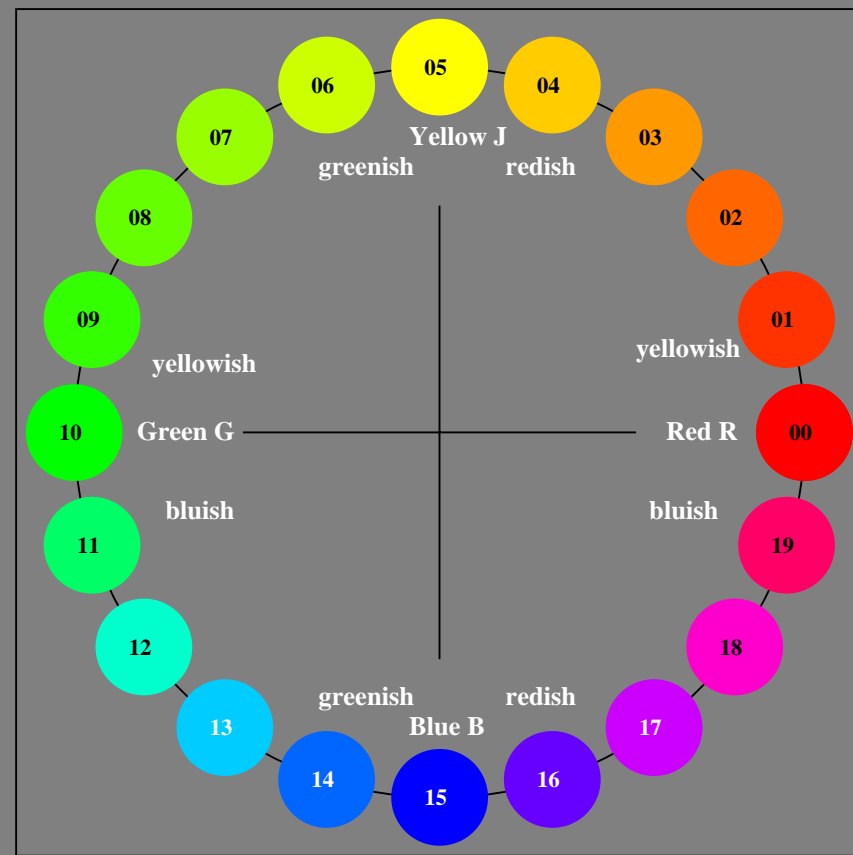
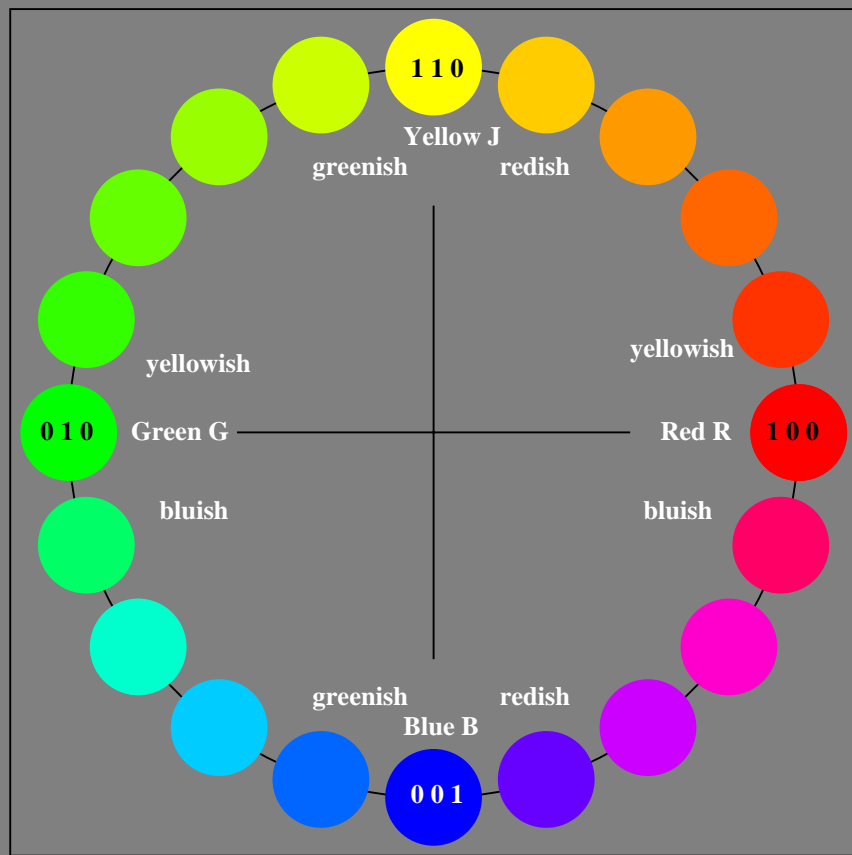
with hue number

- $n = 00$  to 19
- 00 = Red *R*
- 05 = Yellow *J*
- 10 = Green *G*
- 15 = Blue *B*



ORS18a; adapted (a) CIELAB data

	$L^*=L^*_a$	$a^*_a$	$b^*_a$	$C^*_{ab,a}$	$h^*_{ab,a}$
$O_{Ma}$	47.94	65.39	50.52	82.63	38
$Y_{Ma}$	90.37	-10.26	91.75	92.32	96
$L_{Ma}$	50.9	-62.83	34.96	71.91	151
$C_{Ma}$	58.62	-30.34	-45.01	54.3	236
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$R_{CIE}$	39.92	58.66	26.98	64.57	25
$J_{CIE}$	81.26	-2.16	67.76	67.79	92
$G_{CIE}$	52.23	-42.25	11.76	43.87	164
$B_{CIE}$	30.57	1.15	-46.84	46.86	271



De150-7N, 20 step hue circle with elementary colours *R, J, G, B* (left)

20 step hue circle with elementary colours *R, J, G, B* (right)

Test chart 1 according to DIN 33872-5, Page 1/2  
 Elementary hue agreement and discrimination, ORS18a

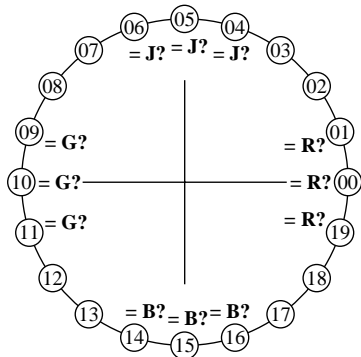
input: *rgb* ( $\rightarrow$  *olv\**) *setrgbcolor*  
 output: no change compared to input

See for similar files: <http://www.ps.bam.de/De15/>; [www.ps.bam.de/De15/](http://www.ps.bam.de/De15/); [www.ps.bam.de/De15/](http://www.ps.bam.de/De15/)  
 Technical information: <http://www.ps.bam.de/33872E> Version 2.1, io=1,1

BAM registration: 20080301-De15/10L/L15e00NP.PS /.PDF BAM material: code=rh4ta  
 application for output of monitor, data projector, or printer systems

**Agreement with elementary hues (Yes/No decision)**

Layout example: agreement with elementary hues



There are four elementary hues on each page: Red R, Yellow J (=french Jaune), Green G, and Blue B.  
 Input data 1 0 0 should produce Red R.  
 Input data 0 1 0 should produce Green G.  
 Input data 0 0 1 should produce Blue B.  
 Input data 1 1 0 should produce Yellow J.  
 The elementary hues Red R and Green G should locate on the horizontal axis.  
 The elementary hues Yellow J and Blue B should locate on the vertical axis.  
 This test uses a hue circle with 20 hues.  
 No. 00 and 10 should be Red R and Green G.  
 No. 05 and 15 should be Yellow J and Blue B.

Are no. 00, 05, 10, and 15 the four elementary hues R, J, G and B? underline: Yes/No

Only in case of "No":

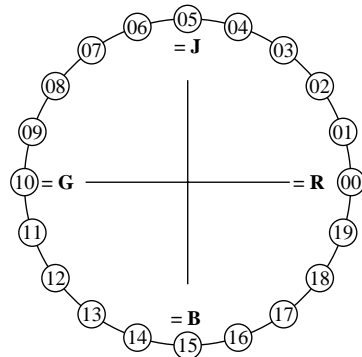
- Elementary Red R is hue step no. (e. g. 00, 01, 19) ..... (neither yellowish nor blueish)
- Elementary Yellow J is hue step no. (e. g. 05, 04, 06) ..... (neither reddish nor greenish)
- Elementary Green G is hue step no. (e. g. 10, 09, 11) ..... (neither yellowish nor blueish)
- Elementary Blue B is hue step no. (e. g. 15, 14, 16) ..... (neither reddish nor greenish)
- Result: Of the 4 elementary hues (e.g. three) ..... are at the intended location

Part 1

Dg150-3

**Discriminability of colours with 20 hues (Yes/No decision)**

Layout example: discriminability of colours with 20 hues



There are four elementary hues on each page: Red R, Yellow J (=french Jaune), Green G, and Blue B.  
 Input data 1 0 0 should produce Red R.  
 Input data 0 1 0 should produce Green G.  
 Input data 0 0 1 should produce Blue B.  
 Input data 1 1 0 should produce Yellow J.  
 Four hue steps are between: Red R and Yellow J, Yellow J and Green G, Green G and Blue B, and Blue B and Red R.  
 This test uses a hue circle with 20 hues.  
 All 20 hues should be distinguishable.  
 For this test it is **not** necessary:  
 1. All 19 differences are visually equal.  
 2. Elementary hues locate at 00, 05, 10, and 15.

Are all 20 colours of the 20 hues distinguishable? underline: Yes/No

Only in case of "No":

- The colours of the two hue steps no. (e. g. 00 and 01) ..... are not distinguishable
- The colours of the two hue steps no. (e. g. 14 and 15) ..... are not distinguishable
- The colours of the two hue steps no. (e. g. 15 and 16) ..... are not distinguishable
- List other pairs: .....
- Result: Of the 19 hue differences are (e.g. 18) ..... differences visible

Part 2

Dg151-3

**Documentation of file format, hardware and software for this test:**

- PDF-File:** either www.ps.bam.de/De15/10L/L15e00NP.PDF underline Yes/No  
 or www.ps.bam.de/De15/10P/P15e00NP.PDF or underline Yes/No
- PS-File:** either www.ps.bam.de/De15/10L/L15e00NA.PS or underline Yes/No  
 or www.ps.bam.de/De15/10P/P15e00NA.PS or underline Yes/No

**Used computer operating system:**

either one of Windows/Mac/Unix/other and version:.....

**This evaluation is for the device output: underline monitor/data projector/printer**

Device model, driver and version:.....

**Device output with PDF/PS-file: underline PDF/PS-file**

- For device output with PDF-file (L/P)15e00NP.PDF:**  
 either PDF-file transfer "download, copy" to PDF device.....  
 or with computer system interpretation by "Display-PDF":.....  
 or with software e. g. Adobe-Reader-/Acrobat and version:.....  
 or with software e. g. Ghostscript and version:.....

- For device output with PS-file (L/P)15e00NA.PS:**  
 either PS-file transfer "download, copy" to PS device.....  
 or with computer system interpretation by "Display-PS":.....  
 or with software e. g. Ghostscript and version:.....  
 or with software e. g. Mac-Yap and version:.....

Special remarks, e. g. output of Landscape (L) file L15e00NA.PS was cutted,  
 Portrait (P) file P15e00NA.PS was used:.....

Part 3

De150-5

**Documentation of assessor colour vision properties for visual assessment**

- The assessor has **normal** colour vision according to one test: underline Yes/No  
 either according to DIN 6160:1996 with Anomaloskop of Nagel underline Yes/unknown  
 or with test charts using colour points according to Ishihara underline Yes/unknown  
 or tested with, please specify: ..... underline Yes/unknown

**Only for display (monitor, data projector) output:**

- Office workplace illumination is daylight (clouded/north sky) underline Yes/No
- PDF-file output with www.ps.bam.de/De13/10L/L13e00NP.PDF underline Yes/No
- Comparison of contrast range of 16 steps F to 0 with test chart no. 3 of DIN 33866-1:2000  
 give contrast range: (>F:0) (F:0) (E:0) (D:0) (C:0) (A:0) (9:0) (7:0) (5:0) (3:0) (<3:0)

*Remark: In daylighted offices the contrast range is in many cases:  
 on paper between: >F:0 (highly glossy), F:0 (silk glossy) and E:0 (matte)  
 on display between: >F:0 and E:0 (monitor), D:0 and 3:0 (data projector)*

**Only for optional colorimetric specification with PDF/PS file output**

- PDF-File:** either www.ps.bam.de/De11/10L/L11e00NP.PDF underline Yes/No  
 or www.ps.bam.de/De11/10P/P11e00NP.PDF or underline Yes/No
- PS-File:** either www.ps.bam.de/De11/10L/L11e00NA.PS or underline Yes/No  
 or www.ps.bam.de/De11/10P/P11e00NA.PS or underline Yes/No

**colour measurement and specification for:**

CIE standard illuminant D65, 2 degree observer, CIE 45/0 geometry: underline Yes/No  
 If No, please give other parameters: .....

**Colorimetric specification with PS file for colours in the columns A to T**

- Exchange of CIELAB data in file www.ps.bam.de/De17/10L/L17e00NP.PS and transfer  
 of the PS-file L17e00NP.PS in PDF-file L17e00NP.PDF underline Yes/No
- If No, please describe other method: .....

Part 4

De151-5

See for similar files: http://www.ps.bam.de/De15/; www.ps.bam.de/De.HTM  
 Technical information: http://www.ps.bam.de/33872E Version 2.1, io=1.1

BAM registration: 20080301-De15/10L/L15e01NP.PS /.PDF BAM material: code=rh4ta  
 application for output of monitor, data projector, or printer systems