

Colorimetric data for system lines SRS18 -> ORS18, TLS00, NRS18, SRS18

For input olv^*_{30} (undefined) and output H^*_{aim} and H^*_{eim} for 4 systems ($m=0$ to 4)
Six CIELAB hue angles of device ORS18: (37.7 96.4 150.9 236.0 305.0 353.7);
Six CIELAB hue angles of device TLS00: (40.0 102.8 136.0 196.4 306.3 328.2);
Six CIELAB hue angles of device NRS18: (25.5 92.3 162.2 217.0 271.7 328.6);
Six CIELAB hue angles of device SRS18: (30.0 90.0 150.0 210.0 270.0 330.0);

<i>no. Colour</i>	undefined <i>olv</i> * ₃₀			->SRS18 <i>n</i> *, <i>c</i> *, <i>H</i> * _{si0}			ORS18 <i>H</i> * _{ai} <i>H</i> * _{ei}		TLS00 <i>H</i> * _{ai} <i>H</i> * _{ei}		NRS18 <i>H</i> * _{ai} <i>H</i> * _{ei}		SRS18 <i>H</i> * _{ai} <i>H</i> * _{ei}	
01 <i>O=o00y</i>	1.0	0.0	0.0	0.0	1.0	30	38	18	40	19	25	359	30	6
02 <i>o10y</i>	1.0	0.1	0.0	0.0	1.0	35	43	24	45	26	31	7	35	13
03 <i>o20y</i>	1.0	0.2	0.0	0.0	1.0	41	48	31	52	36	38	17	41	21
04 <i>o30y</i>	1.0	0.3	0.0	0.0	1.0	47	54	39	58	44	44	25	47	29
05 <i>o40y</i>	1.0	0.4	0.0	0.0	1.0	53	60	47	64	52	51	34	53	37
06 <i>o50y</i>	1.0	0.5	0.0	0.0	1.0	60	67	57	71	61	59	45	60	46
07 <i>o60y</i>	1.0	0.6	0.0	0.0	1.0	67	74	66	79	72	67	56	67	56
08 <i>o70y</i>	1.0	0.7	0.0	0.0	1.0	73	80	74	85	80	73	64	73	64
09 <i>o80y</i>	1.0	0.8	0.0	0.0	1.0	79	86	82	91	88	80	73	79	72
10 <i>o90y</i>	1.0	0.9	0.0	0.0	1.0	85	91	89	98	97	87	83	85	80
11 <i>Y=y00l</i>	1.0	1.0	0.0	0.0	1.0	90	96	95	103	104	92	89	90	87

Goal: Transfer coordinates olv^*_{30} (system $m=0$) to H^*_{aim} and H^*_{eim} ($m=1$ to 4)

The following equations for relative blackness and chroma are valid for any device:

$$n^* = 1 - \max (o^*_{30}, l^*_{30}, v^*_{30}) \quad (1)$$

$$c^* = \max (o^*_{30}, l^*_{30}, v^*_{30}) - \min (o^*_{30}, l^*_{30}, v^*_{30}) \quad (2)$$

For the calculation of the missing (relative) device hue assume

as a starting point that the three values olv^*_{30} belong to the standard (s) device SRS18:

relative red-green chroma: $a^*_{r0} = o^*_{30} \cos(30) + l^*_{30} \cos(150)$ (3)

relative yellow-blue chroma: $b^*_{r0} = o^*_{30} \sin(30) + l^*_{30} \sin(150) - v^*_{30} \sin(270)$ (4)

Standard integer hue: $H^*_{si0} = \text{round} [\text{atan} (b^*_{r0} / a^*_{r0})]$ (5)

Fetch device hue H^*_{aim} and elementary hue H^*_{eim} ($m = 1$ bis 4)

from table with 361 entries for H^*_{si0} from 0 to 360 degrees

Integer device hue: $H^*_{aim} = H^*_{si_ai} [H^*_{si0}]$ (6)

Integer elementary hue: $H^*_{eim} = H^*_{ai_ei} [H^*_{si0}]$ (7)

Relative device hue: $h^*_m = H^*_{aim} / 360$ (8)

Relative elementary hue: $e^*_m = H^*_{eim} / 360$ (9)

Result: Relative blackness, relative chroma and relative device or elementary hue:

$$n^*, c^*, H^*_{aim} \text{ or } n^*, c^*, H^*_{eim} \quad (10)$$

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