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);

		undefined	–>SRS18	ORS18	TLS00	NRS18	SRS18
no.	*Colour*	***olv*30***	***n*, *c**, *H**si***	***H*ai H*ci***	***H*ai H*ci***	***H*ai H*ci***	***H*ai H*ci***
01	*O=o00y*	1.0 0.0	0.0 0.0 1.0 30	38 18	40 19	25 359	30 6
02	*o10y*	1.0 0.1	0.0 0.0 1.0 35	43 24	45 26	31 7	35 13
03	*o20y*	1.0 0.2	0.0 0.0 1.0 41	48 31	52 36	38 17	41 21
04	*o30y*	1.0 0.3	0.0 0.0 1.0 47	54 39	58 44	44 25	47 29
05	*o40y*	1.0 0.4	0.0 0.0 1.0 53	60 47	64 52	51 34	53 37
06	*o50y*	1.0 0.5	0.0 0.0 1.0 60	67 57	71 61	59 45	60 46
07	*o60y*	1.0 0.6	0.0 0.0 1.0 67	74 66	79 72	67 56	67 56
08	*0o70y*	1.0 0.7	0.0 0.0 1.0 73	80 74	85 80	73 64	73 64
09	*o80y*	1.0 0.8	0.0 0.0 1.0 79	86 82	91 88	80 73	79 72
10	*o90y*	1.0 0.9	0.0 0.0 1.0 85	91 89	98 97	87 83	85 80
11	*Y=y00l*	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 asume
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: $H^*_{si0} = round\,[\,atan\,(\,b^*_{r0} / a^*_{r0}\,)\,]$ (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: $H^*_{eim} = H^*_{si\_ei}\,[\,H^*_{si0}\,]$ (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:

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

ZE090-7

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)
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		undefined	–>SRS18	ORS18	TLS00	NRS18	SRS18
no.	*Colour*	***olv*30***	***n*, *c**, *H**si***	***H*ai H*ci***	***H*ai H*ci***	***H*ai H*ci***	***H*ai H*ci***
01	*O=o00y*	0.7 0.2	0.2 0.3 0.5 30	38 18	40 19	25 359	30 6
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Relative device hue: $h^*_m = H^*_{aim} / 360$ (8)

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

ZE090-7

BAM-test chart no. ZE09; Colour image data transfer
olv*30 (SRS18) –> H*aim, H*eim (4 systems, m=1 to 4)

input: *rgb (->olv*3) setrgbcolor*
output: no change compared to input