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*si0*		***H*ai***	***H*ei***	***H*ai***	***H*ei***	***H*ai***	***H*ei***	***H*ai***	***H*ei***
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: $H^*_{eim} = H^*_{ai\_ei}\,[\,H^*_{si0}\,]$ (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:

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

ZE090−7

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

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