



SPUR Photochemie
Dr. Heidrich + Schain GbR
Schmiedestr. 31, D-52379 Langerwehe
Tel.: 02423-6198 **Mobil:** 0173-7086525
Fax: 02423-406980
Web: www.spur-photo.com
E-Mail: schain@spur-photo.com
General manager:
Dipl.-Ing. Heribert Schain

Data Sheet SPUR Speed Major

SPUR Speed-Major is a novel developer endowed with the special features of a high-speed, as well as a push developer. In contrast to conventional push developers, **SPUR Speed-Major** unveils numerous shadow details due to its high basic sensitivity. Apart from that, tonal values are significantly more nuanced.

The working solutions used for determining speed and contrast values were prepared with distilled water. If using harder water, development times must be prolonged depending on the degree of hardness. **The figures indicated in the table apply to a development temperature of 20° C. Agitate continuously for the first 30 seconds, and thereafter as indicated in the chart.**

In the range of nominal speed, speed was determined according to the Zone System, or ISO standards respectively. The higher or push speeds comply with the following definition: Skin tones (Zone VI in the Zone System) must have a density equivalent to an N development at nominal speed, i.e. a density of approximately D=1 (at least 0.9). This meets the definition of Karl Neumeier: <http://www.fotografie-in-schwarz-weiss.de/sw-fotografie/wissen/86-pushentwickler.html>.

Speed and contrast values were determined by measurement using a densitometer directly on the developed film, which corresponds approximately to measurement under a diffusor-enlarger.

If you use a condenser-enlarger, not only contrast values, but also the resulting speeds are substantially higher - up to one stop - depending on the emulsion. By way of example we have measured condenser values with Ilford Delta 100 and Ilford HP5 Plus.

Within the range of nominal speed, and one stop exceeding it, all films achieve outstanding results except Ilford Delta 3200, which is not suitable for Speed-Major. Film performance regarding the respective highest attainable speed is marked in marked as follows:

Best suited

Very suitable

Well suited

Colorless: Suitable

Unsuitable

Developing Chart

Manufacturer/Film	Film Speed ISO	Dilution	Developing Time (min)	Inversion tact:	Contrast
ADOX Silvermax	100/21°	1 + 30	9	Once each min	Normal
	100/21°	1 + 24	10	Once each min	Slightly increased (N + 0,5)
	100/21°	1 + 24	12	Twice each min	Moderately high (N + 1)
	200/24°	1 + 14	13	4 times each min	Moderately high (N + 1)
	320/26°	1 + 9	15	4 times each min	Slightly increased (N + 0,5)
ADOX CHS 100 II	125/22°	1 + 35	9	Once each min	Low (N - 1,5)
	200/24°	1 + 35	11	Twice each min	Normal (N)
	200/24°	1 + 24	12	Twice each min	Slightly increased (N + 0,5)
	250/25°	1 + 14	13	Twice each min	Moderately high (N + 1)
	400/27°	1 + 8	13	Thrice each min	Moderately high (N + 1)
500/28°	1 + 7	15	4 times each min	Moderately high (N + 1)	
Agfa APX 100 Old	100/21°	1 + 24	11	Twice each min	Normal (N)
	160/23°	1 + 14	12	Twice each min	Slightly increased (N + 0,5)
	200/24°	1 + 9	12	Thrice each min	Moderately high (N + 1)
	320/26°	1 + 7	15	4 times each min	Moderately high (N + 1)

Manufacturer/Film	Film Speed ISO	Dilution	Developing Time (min)	Inversion tact:	Contrast
Agfaphoto APX 100 New Kentmere 100 FOTOIMPEX CHM 100	200/24°	1 + 35	8,5	Once each min	Normal (N)
	400/27°	1 + 24	11	Once each min	Slightly increased (N + 0,5)
	640/29°	1 + 14	12	Twice each min	Slightly increased (N + 0,5)
	1000/31°	1 + 9	13	Thrice each min	Moderately high (N + 1)
Agfaphoto APX 400 New Kentmere 400 Bergger BRF 400 plus FOTOIMPEX CHM 400	400/27°	1 + 24	9	Thrice each min	Low (N - 1)
	500/28°	1 + 20	11	Twice each min	Low (N - 1)
	800/30°	1 + 11	11	Twice each min	Normal (N)
	1000/31°	1 + 9	13	Thrice each min	Normal (N)
	1600/33°	1 + 7	15	4 times each min	Normal (N)
Fuji Acros 100	125/22°	1 + 40	10	Once each min	Normal (N)
	200/24°	1 + 35	11	Once each min	Moderately high (N + 0,75)
	400/27°	1 + 27	11	Once each min	Slightly increased (N + 0,5)
	640/29°	1 + 20	12	Once each min	Moderately high (N + 1)
	800/30°	1 + 14	13	Twice each min	High (N + 1,5)
	1250/32°	1 + 9	15	Twice each min	High (N + 2)
Ilford FP4+	160/23°	1 + 44	6	4 times each min	Very low (N - 1,5)
	200/24°	1 + 35	7	Once each min	Normal (N)
	250/25°	1 + 35	8	Once each min	Slightly increased (N + 0,5)
	400/27°	1 + 27	11	Once each min	Moderately high (N + 1)
	500/28°	1 + 20	12	Twice each min	Moderately high (N + 1)
	640/29°	1 + 14	13	Twice each min	High (N + 1,5)
	800/30°	1 + 9	13	Thrice each min	High (N + 2)
Ilford HP5 +	400/27°	1 + 40	8	4 times each min	Low (N - 1)
	400/27°	1 + 30	10	Once each min	Normal (N)
	800/30°	1 + 24	11	Once each min	Normal (N)
	1000/31°	1 + 20	12	Once each min	Slightly increased (N + 0,5)
	1250/32°	1 + 14	12	Once each min	Slightly increased (N + 0,5)
	1600/33°	1 + 14	13	Once each min	Slightly increased (N + 0,5)
	2000/34°	1 + 9	14	Twice each min	Moderately high (N + 1)
	2000/34°	1 + 7	15	Thrice each min	High (N + 1,5)
Ilford HP5 + Condenser values	400/27°	1 + 40	8	4 times each min	Normal (N)
	800/30°	1 + 30	10	Once each min	Normal (N)
	1250/32°	1 + 24	11	Once each min	Slightly increased (N + 0,5)
	1600/33°	1 + 20	12	Once each min	Moderately high (N + 1)
	2000/34°	1 + 14	13	Twice each min	Moderately high (N + 1)
	3200/36°	1 + 9	14	Thrice each min	Moderately high (N + 1)
	3200/36°	1 + 7	15	4 times each min	High (N + 2)
Ilford SFX 200	160/23°	1 + 30	8	Once each min	Slightly low (N - 0,5)
	200/24°	1 + 24	10	Once each min	Normal (N)
	400/27°	1 + 20	12	Once each min	Normal (N)
	640/29°	1 + 14	13	Twice each min	Slightly increased (N + 0,5)
	800/30°	1 + 9	15	Thrice each min	Moderately high (N + 1)
Ilford Delta 100	100/21°	1 + 35	7	Once each min	Slightly increased (N + 0,5)
	200/24°	1 + 27	9	Once each min	Moderately high (N + 1)
	320/26°	1 + 20	12	Once each min	Moderately high (N + 1)
	400/27°	1 + 14	13	Twice each min	Moderately high (N + 1)
	800/30°	1 + 9	13	Thrice each min	Moderately high (N + 1)
	1000/31°	1 + 7	15	Thrice each min	Moderately high (N + 1)
Ilford Delta 100 Condenser values	200/24°	1 + 35	7	Once each min	Moderately high (N + 1)
	400/27°	1 + 27	9	Once each min	Moderately high (N + 1)
	640/29°	1 + 20	12	Once each min	Moderately high (N + 1)
	800/30°	1 + 14	13	Twice each min	Moderately high (N + 1,25)
	1000/31°	1 + 9	13	Thrice each min	Moderately high (N + 1)
	1250/32°	1 + 7	15	Thrice each min	High (N + 1,5)
Ilford Delta 400	320/26°	1 + 40	10	4 times each min	Very Low (N - 1,5)
	400/27°	1 + 30	12	Once each min	Normal (N)
	640/29°	1 + 20	11	Twice each min	Slightly increased (N + 0,5)
	1000/31°	1 + 12	12	Twice each min	Moderately high (N + 1)
	1600/33°	1 + 9	13	Thrice each min	High (N + 1,5)
Ilford Delta 3200	800/30°	1 + 24	10	Twice each min	Extremely low (N - 3)
	1000/31°	1 + 20	12	Thrice each min	Low (N - 1)
	1250/32°	1 + 14	14	4 times each min	Very low (N - 1,5)

Manufacturer/Film	Film Speed ISO	Dilution	Developing Time (min)	Inversion tact	Contrast
Kodak Tmax 100	100/21°	1 + 35	10	Once each min	Slightly low (N - 0,5)
	100/21°	1 + 30	10	Once each min	Normal (N)
	160/23°	1 + 24	11	Twice each min	Barely increased (N + 0,25)
	200/24°	1 + 20	12	Twice each min	Barely increased (N + 0,25)
	320/26°	1 + 14	13	Twice each min	Slightly increased (N + 0,5)
	400/27°	1 + 12	14	Twice each min	Moderately high (N + 1)
	640/29°	1 + 9	15	Thrice each min	High (N + 1,5)
Kodak Tmax 400	400/27°	1 + 35	11	Once each min	Slightly low (N - 0,5)
	500/28°	1 + 30	12	Once each min	Slightly increased (N + 0,5)
	640/29°	1 + 24	12	Once each min	Slightly increased (N + 0,5)
	800/30°	1 + 20	12	Twice each min	Moderately high (N + 1)
	1000/31°	1 + 14	13	Twice each min	Moderately high (N + 1)
	1250/32°	1 + 9	13	Twice each min	Moderately high (N + 0,75)
	1600/33°	1 + 9	15	Thrice each min	Slightly increased (N + 0,5)
Kodak Tmax P3200 * Explanation see below	1600/33°	1 + 24	11	Once each min	Normal (N)
	2000/34°	1 + 20	13	Once each min	Slightly increased (N + 0,5)
	2500/35°	1 + 17	14,5	Twice each min	Barely increased (N + 0,25)
	3200/36° *	1 + 17	16	Twice each min	Normal (N)
	3200/36° **	1 + 14	14	Once each min	Normal (N)
	3200/36° ***	1 + 12	15	Twice each min	Normal (N)
Kodak Tri X 400	200/24°	1 + 35	8	4 times each min	Low (N - 1)
	400/27°	1 + 27	12	Once each min	Normal (N)
	800/30°	1 + 20	11	Once each min	Normal (N)
	1250/32°	1 + 14	13	Once each 2 min	Normal (N)
	1600/33°	1 + 14	16	Once each 2 min	Slightly increased (N + 0,5)
	1600/33°	1 + 12	15	Once each 2 min	Moderately high (N + 0,75)
	1600/33°	1 + 9	13	Thrice each min	Moderately high (N + 1)
	2000/34°	1 + 7	15	4 times each min	Moderately high (N + 1)
Rollei Ortho 25 (Do prewash!)	25/15°	1 + 49	7	Once each min	Low (N - 1)
	32/16°	1 + 49	8	Once each min	Normal (N)
	40/17°	1 + 49	9	Once each min	Slightly increased (N + 0,5)
	50/18°	1 + 40	10	Once each min	Moderately high (N + 1)
	80/20°	1 + 30	11	Once each min	Moderately high (N + 1)
	125/22°	1 + 24	12	Once each min	Moderately high (N + 1)
	160/23°	1 + 20	13	Twice each min	Moderately high (N + 1)
	200/24°	1 + 14	15	Thrice each min	Moderately high (N + 1)
Rollei Superpan 200 Rollei Retro 400 S Rollei Infrared 400 S	100/21°	1 + 30	9	Once each min	Normal (N)
	200/24°	1 + 24	10	Once each min	Moderately high (N + 1)
	400/27°	1 + 20	11	Twice each min	High (N + 1,5)
	640/29°	1 + 14	12	Thrice each min	High (N + 1,5)
	1000/31°	1 + 9	13	4 times each min	High (N + 2)
Rollei RPX 25 Rollei Retro 80 S	25/15°	1 + 40	7	Once each min	Normal (N)
	50/18°	1 + 35	9	Once each min	Moderately high (N + 1)
	80/20°	1 + 27	11	Once each min	Moderately high (N + 1)
	100/21°	1 + 20	12	Twice each min	Moderately high (N + 1)
	200/24°	1 + 14	13	Twice each min	High (N + 1,5)
	320/26°	1 + 9	15	Thrice each min	High (N + 2)
Rollei RPX 100	200/24°	1 + 40	7	Once each min	Low (N - 1)
	200/24°	1 + 35	8	Once each min	Normal (N)
	320/26°	1 + 27	10	Once each min	Normal (N)
	400/27°	1 + 24	11	Once each min	Normal (N)
	800/30°	1 + 14	14	Twice each min	Slightly increased (N + 0,5)
	1000/31°	1 + 9	15	Thrice each min	Moderately high (N + 1)
	Rollei RPX 400	400/27°	1 + 30	10	Once each min
640/29°		1 + 24	11	Once each min	Low (N - 1)
800/30°		1 + 20	12	Twice each min	Low (N - 1)
1000/31°		1 + 14	13	Thrice each min	Normal (N)
1250/32°		1 + 9	14	4 times each min	Slightly increased (N + 0,5)
1600/33°		1 + 7	15	4 times each min	Moderately high (N + 1)

Kodak Tmax P3200, box speed: * lower shadow details, lower fog
** better shadow details, somewhat higher fog
*** best shadow details, fog minimal higher

The *** - curve is nearly corresponding to the zone system curve at ISO 3200/36°