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WESTON



WESTON

Film Ratings

Film Ratings



THE WESTON SYSTEM OF EMULSION RATINGS

Correct exposure depends upon (1), the accurate measurement of the light reflected from the object and (2), the proper speed rating to be applied to the emulsion of the film being used. The Weston System provides ratings that have long been universally accepted in photographic circles.

Development practices have a great influence on emulsion ratings. Weston tests films and plates using the development recommended by the manufacturers. Many photographers, however, prefer their own development and Weston has recognized this by rating emulsions according to Group Numbers.

The number given for each film represents a group of three consecutive emulsion speeds. Each group contains a rating based on recommended processing with one value below and one above this figure. If, by using the recommended rating (middle number), negatives are thinner or denser than desired, then use another number within

the group or even outside the group. Lower numbers give denser negatives and greater shadow detail while higher numbers give thinner negatives.

A few test shots will quickly show the rating which best fits your equipment and development technique for a particular film.

The following table shows the group number and the three emulsion speeds that it represents:

<i>Daylight</i>		<i>Tungsten</i>	
Group No.	Speed Range	Group No.	Speed Range
200	160-200-250	125	100-125-160
100	80-100-125	64	50- 64- 80
50	40- 50- 64	32	24- 32- 40
24	20- 24- 32	16	12- 16- 20
12	10- 12- 16	8	6- 8- 10
6	5- 6- 8	4	3- 4- 5
3	2.5- 3- 4	2	1.5- 2- 2.5
1.5	1.2- 1.5- 2		

Photoflood lamps require tungsten values.

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Weston Electrical Instrument Corporation
Newark 5, New Jersey



Weston Ratings for Still Camera Films



MINIATURE CAMERA FILMS

	Daylight Group No.	Tungsten Group No.
<i>Ansco</i>		
Ultra Speed Pan . . .	100	64
Supreme	50	32
Minipan		5*

<i>Dupont</i>		
Superior Pan 2	50	32
Microcopy		2.5*

<i>Kodak</i>		
Super XX	100	64
Plus X	50	32
Panatomic X	24	16
Direct Positive	50	32
Microfile		2.5*

* Normal Arrow of calculator set to reading obtained from white surface in copying position.

ROLLS AND PACKS

	Daylight Group No.	Tungsten Group No.
<i>Ansco</i>		
Superpan Press	100	64
Superpan Supreme	50	32
Plenachrome	50	32

<i>Kodak</i>		
Super XX	100	64
Plus X	50	32
Super Ortho Press (Packs Only)	100T	32T
Verichrome	50	32

<i>Gevaert</i>		
Superchrome	24	8

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Weston Ratings for Motion Picture Films



16 MM. M. P. FILM

Film for motion picture cameras is processed by the manufacturer. Consequently, this film is rated in single numbers only.

Daylight Tungsten

Anasco

Triple S. Pan Rev.	100	64
Hypan Rev.	32	24
Supreme Negative.	64	40

Kodak

Super XX Pan. Rev.	100	80
Super X Pan.	32	24

8 MM. M. P. FILM

Daylight Tungsten

Anasco

Hypan Rev.	24	16
Triple S Pan.	100	64

Kodak

Ciné Kodak Pan Rev.	8	6
Super X Pan Rev.	32	24

SHUTTER TIME FOR MOTION PICTURE CAMERAS

16 Frames per Second

Camera	Time (Sec.)
Ciné Anasco Model B.	1/30
Ciné Kodaks (all models)	1/30
Bolex H-8, H-16, and L-8.	1/30
DeVry.	1/30
Filmo—153's.	1/40
Filmo all 70's and 121.	1/30
Filmo Golf 70, 71's, 75 and 141.	1/40
Filmo 8 mm. (all).	1/30

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Keystone Late Models	
A-3 & A-7.....	1/40
Keystone Model K-8	
No. 872650 and above.....	1/40
Keystone (other models).....	1/50
Maurer 16 Professional either..	1/30 or 1/50
Paragon.....	1/30
Revere.....	1/30
Simplex.....	1/40
Stewart Warner 8.....	1/50
St. W. Hollywood and 532A..	1/40
Sept.....	1/90
Universal Cinémaster.....	1/30
Univex (Single 8).....	1/30
Victor (all models).....	1/30
Zeiss Kinamo S-10-16.....	1/30

NOTE:—The difference in shutter time for the same number of frames per second is due to the varying size of shutter openings.

Shutter speeds of multi-speed cameras are proportional. If your camera shows a shutter speed of 1/30 sec. for 16 frames then for 64 frames per sec. the shutter speed will be four times as fast or 1/120 sec., etc.

NOTES ON COLOR PHOTOGRAPHY

Color film requires very accurate exposure and must be exposed to the type of light for which it was balanced. For example, Regular Kodachrome should be exposed only in sunlight, and Type A Kodachrome in photo-floods, unless suitable filter is used as recommended by manufacturers.

Keep the brightness range of the scene as small as possible. Use flat lighting indoors and try to take outdoor scenes with sun directly back of camera.

The brightness range method is best for obtaining accurate exposure information. For Universal Models, measure brightest and darkest colors (black and white are not colors). Set calculator at point midway between these two readings. For Models 720, 819 and 850, average these readings and expose accordingly.

If transparencies are a little too dark or too light, it may be due to equipment errors. These may be compensated for by using film ratings other than normal. If too dark, decrease emulsion speed setting and, if too light, increase emulsion speed setting.

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COLOR FILMS

Since color film must be processed under carefully controlled conditions and, also, since exposure must be exact in order to obtain proper color rendition, color film is rated in single numbers only and not in groups.

Daylight Artificial

Anscocolor

Reversible 16 mm.	8T	12T
Reversible 35 mm.	8T	10T
Reversible Sheet Film.	8T	8T

Kodachrome

ROLL FILM

8, 16, 35 mm, Regular	8	3§
8, 16, 35 mm, Type A	8§	12

§ With recommended filter.

PROFESSIONAL FILM

Daylight Type.	10
Type B.	4†	6††

† Exposed through Wratten Filter No. 85B.

†† Used in Mazda only.

Kodacolor

Kodacolor.	20
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PRESS FILMS

Daylight Tungsten
Group No. Group No.

Anscocolor

Superpan Press.	100	64
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Defender

Ortho 7.	100	64
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Kodachrome

Super Panchro Press Type B.	100	64
Super Ortho Press.	100	32
Super Panchro Press Plate	100	64
Super Panchro Press, Sports Type.	200	160

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Weston Ratings for Cut Films & Plates



PROCESS FILMS

Reading should be taken from white surface using normal arrow position.

	Daylight Group No.	Tungsten Group No.
AnSCO Process	12	4
Defender Process	12T	4
Defender Process Pan ...	12	8
Hammer Special Super Process	6	2
Hammer Safety	6	2
Kodak Contrast Process Ortho		8
Kodak Contrast Process Pan		10

Plates

Wratten M.		24
Wratten Process Pan		24
Wratten Metallographic		12
Hammer Contrast Pan ...	6	4
Hammer Special Process	6	2
Hammer Process	6	2
Hammer Process Pan ...	6	2
Kodak Process	6	1

PORTRAIT & COMMERCIAL

Daylight Group No. Tungsten Group No.

AnSCO

Triple S Pan	200	125
Triple S Ortho	100	64
Isopan	50	32
Superpan Portrait	50	32
S. S. Plena	50	16
Commercial Pan	12	8
Commercial Ortho	12	8
Commercial	12	4

Defender

Arrow Pan	100T	64T
X. F. Pan	50	32
X. F. Ortho	50	16
Ortho 7	100	64
Pentagon	24	16
F. G. Pan	24	16
Portrait	24	8
Commercial	12	4
Seed 23 Plate	6	2
Seed 27 Plate	24	8

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Weston Ratings for Cut Films & Plates



Daylight Group No. Tungsten Group No.

Kodak

Tri-X Panchromatic.....	200	125
Ortho-X.....	100	64
Super XX.....	100	64
S. S. Ortho Port.....	50	16
Portrait Pan.....	50	32
Commercial Ortho.....	24T	8
Commercial.....	24	4
Commercial Matte.....	24T	4T
Panatomic X.....	24T	16T

PLATES

Kodak

Polychrome Plate.....	24	8
50 Plate.....	24	8
40 Plate.....	24	8
33 Plate.....	12	4
33 Plate Matte.....	12	4
Wratten Pan.....	12	8
Commercial Plate.....	12	8
Super Ortho Press.....	100T	64T
Super Panchro Press.....	100	64
Panatomic-X.....	24	16
Tri-X Pan Type B.....	100T	64T
Tri-X Pan Type B. Matte	100T	64T

Daylight Group No. Tungsten Group No.

Hammer

Portrait Ortho.....	50	32
Medium Commercial Ortho.....	12	8
Medium Commercial....	12	4
Slow.....	3	1
Slow Ortho.....	3	1

PLATES

Commercial Pan.....	6	4
Extra Fast Plate.....	24	8
Medium Com. Ortho Plate.....	12	4
Medium Commercial Plate.....	12	8
Portrait Ortho.....	24	16
Soft Gradation Pan Plate	12	4
Slow Plate.....	3	1
Slow Ortho Plate.....	3	1

You cannot necessarily depend on Weston speed values from any other source unless they are marked "OFFICIAL WESTON SPEEDS BY AGREEMENT WITH THE WESTON ELECTRICAL INSTRUMENT CORPORATION"

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