B.K.S.T.S. Technical Data. Film, Lens and Aspect Ratios.

16mm Film (0.630 in.)

Perfs per frame 1
Frames per foot 40
Perfs per foot 40
Feet per minute @ 16 fps 24
Feet per minute @ 24 fps 36
Metres per minute @ 16 fps 7.32
Metres per minute @ 24 fps 10.97

35mm Film (1.378 in.)

Perfs per frame 4
Frames per foot 16
Perfs per foot 64
Feet per minute @ 24 fps 90
Feet per minute @ 25 fps 93.75
Metres per minute @ 24 fps 27.43
Metres per minute @ 25 fps 28.58

70mm Film (2.756 in.)

Perfs per frame 5
Frames per foot 12.80
Perfs per foot 64
Feet per minute @ 24 fps 112.50
Feet per minute @ 30 fps 140.63
Metres per minute @ 24 fps 34.29
Metres per minute @ 30 fps 42.86

16mm Projector Apertures

1.34:1 Standard	9.65 x 7.21mm	0.380 x 0.284in
1.66:1 Super 16	11.89 x 7.16mm	0.468 x 0.282in
1.85:1 Super 16	11.89 x 6.43mm	0.468 x 0.243in

35mm Projector Apertures

1.33:1 Silent	23.65 x 17.78mm	0.931 x 0.700in
1.37:1 Academy	20.96 x 15.24mm	0.825 x 0.600in
1.66:1 Widescreen	20.96 x 12.62mm	0.825 x 0.497in
1.78:1 Widescreen	20.96 x 11.79mm	0.825 x 0.464in
1.85:1 Widescreen	20.96 x 11.33mm	0.825 x 0.446in
2.35:1[1] Cinemascope	21.31 x 18.16mm	0.839 x 0.715in
2.39:1[2] Cinemascope	20.96 x 17.53mm	0.825 x 0.690in
2.55:1[3] Cinemascope	23.16 x 18.16mm	0.912 x 0.715in
1.85:1① Super 35	24.00 x 12.98mm	0.945 x 0.511in
2.40:1② Super 35	24.00 x 10.00mm	0.945 x 0.394in

[1] Original Dimensions.
[2] Current S.M.P.T.E. standard.
[3] Dimensions for Multi-track Magnetic Cinemascope.
①Improved picture quality when reprinted onto optical release print. Also used for 70mm blow-ups.
②Non-Anamorphic Cinemascope photography. Image squeezed by 2:1 when reprinted.

70mm Projector Apertures

2.20:1 Standard	48.59 x 22.10mm	1.913 x 0.870in
1.85:1 ①Special	40.89 x 22.10mm	1.610 x 0.870in
1.37:1 Imax 15 Perf.	68.00 x 49.64mm	2.677 x 1.954in
1.37:1 Iwerks 8 Perf.	52.00 x 38.00mm	2.047 x 1.496in

Synchronisation between Picture and Sound

Film	Type of sound	Frames	Position
16mm	Optical Track	26	Ahead
16mm	Magnetic Track	28	Ahead
35mm	Optical Track	20	Ahead
35mm	Magnetic Track	28	Behind
70mm	Magnetic Track	24	Behind
Dolby Digital	Digital Optical	26	Ahead
S.D.D.S.	Digital Optical	0	
D.T.S.	Digital CD ROM	20	Ahead

Conversion of Lens Focal Length Using Common Picture Height

Lens Focal Length of	Multiply by	To Obtain	
Standard			
1.37:1	0.743	WS	1.85:1
1.37:1	1.151	CS	2.39:1
1.37:1	1.449	70	2.20:1
Widescreen			
1.85:1	1.346	ST	1.37:1
1.85:1	1.548	CS	2.39:1
1.85:1	1.950	70	2.20:1
Cinemascope			
2.39:1	0.869	ST	1.37:1
2.39:1	0.646	WS	1.85:1
2.39:1	1.259	70	2.20:1
70mm			
2.20:1	0.690	ST	1.37:1
2.20:1	0.513	WS	1.85:1
2.20:1	0.794	CS	2.39:1

Lens Barrel Diameter Equivalents

50.80mm 2.000in
55.00mm 2.165in
57.15mm 2.250in
62.50mm 2.460in
63.50mm 2.500in
69.85mm 2.750in
70.60mm 2.780in
101.60mm 4.000in

35mm Cue Marks (Frames from tail)

	ANSI PH22.55-1983	SMPTE 301-1997
Start of Motor cue:	200	198
Frames Between cues:	168	172
Start of Picture cue:	28	22

Edited & Reviewed by Steve Grant.