

# STRETCH YOUR IMAGINATION



ARRI MASTER ANAMORPHIC LENSES. TRULY CINEMATIC.













# Master Anamorphic T1.9/135 mm

A range of seven high-performance prime lenses, the ARRI/ZEISS Master Anamorphic series represents a significant step forward in the technology and practicality of anamorphic cinematography for 35 format digital and film cameras.

For the first time, a perfect combination of compact size, minimal weight, very high speed and exceptional optical design with minimal distortion has been achieved in a set of anamorphics. With beautiful out-of-focus backgrounds and a smooth, cinematic look, the Master Anamorphic lenses are as fast and easy to use on set as other modern cine lenses.

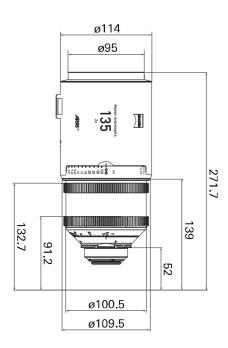
### **Main Features**

- Low distortion for uncompromised Cinemascope
  - straight lines stay straight
  - no distortion compensation in post necessary
  - low distortion even at close focus
- Cinematic bokeh with high contrast and nice focus fall-off
  - · very smooth out-of-focus image
  - immersive look
- Beautiful skin tones and precise color rendition
  - smooth and pleasant skin tones
- Crisp, natural color rendition
- Characteristic out-of-focus highlights
  - oval and uniformly illuminated out-of-focus highlights
  - smooth iris shape because of 15 aperture blades
- Large image field for full freedom in composition
  - full 2.39:1 format is useable for image composition
  - no visible image drop at the corners
- Large aperture of T1.9 for shallow depth of focus
  - T1.9 useable with any focal length at any distance
  - overcomes the old rule: "anamorphics need to be stopped down to T4.5"
- Virtually no image breathing
- No anamorphic mumps (fat face effect)
- Super color matched to other ARRI/ZEISS primes and ARRI/FUJINON zooms
- ARRI Lens Data System (LDS) for lens metadata

Lens Mount (1):	PL-LDS
Aperture	T1.9 - T22
Close Focus (2)	1.20 m / 3'11''
Magnification Ratio (3)	H: 1:15.6, V: 1:7.8
Length (4)	226 mm / 9.1"
Length including flange focal distance (5)	278 mm / 10.7"
Front Diameter (6)	95 mm / 3.7"
Maximum Housing Diameter	114 mm / 4.5"
Weight (kg)	3.7
Weight (lbs)	8.2
Entrance Pupil (7) (mm)	-129
Entrance Pupil (inch)	-5.09
Angle of View H - V Super 35 Cinemascope (8)	19° - 8°
Image Diameter	29.26 mm <sup>(9)</sup>

<sup>(</sup>x) For abbreviations please see legend at end of document







# Master Anamorphic T1.9/100 mm

A range of seven high-performance prime lenses, the ARRI/ZEISS Master Anamorphic series represents a significant step forward in the technology and practicality of anamorphic cinematography for 35 format digital and film cameras.

For the first time, a perfect combination of compact size, minimal weight, very high speed and exceptional optical design with minimal distortion has been achieved in a set of anamorphics. With beautiful out-of-focus backgrounds and a smooth, cinematic look, the Master Anamorphic lenses are as fast and easy to use on set as other modern cine lenses.

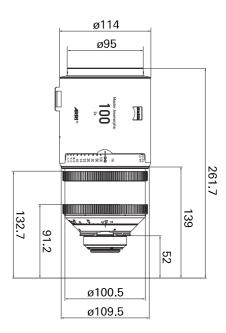
### **Main Features**

- Low distortion for uncompromised Cinemascope
  - straight lines stay straight
  - no distortion compensation in post necessary
  - low distortion even at close focus
- Cinematic bokeh with high contrast and nice focus fall-off
  - · very smooth out-of-focus image
  - immersive look
- Beautiful skin tones and precise color rendition
  - smooth and pleasant skin tones
  - Crisp, natural color rendition
- Characteristic out-of-focus highlights
  - oval and uniformly illuminated out-of-focus highlights
  - smooth iris shape because of 15 aperture blades
- Large image field for full freedom in composition
  - full 2.39:1 format is useable for image composition
  - no visible image drop at the corners
- Large aperture of T1.9 for shallow depth of focus
  - T1.9 useable with any focal length at any distance
  - overcomes the old rule: "anamorphics need to be stopped down to T4.5"
- Virtually no image breathing
- No anamorphic mumps (fat face effect)
- Super color matched to other ARRI/ZEISS primes and ARRI/FUJINON zooms
- ARRI Lens Data System (LDS) for lens metadata

Lens Mount (1):	PL-LDS
Aperture	T1.9 - T22
Close Focus (2)	0.95 m / 3'1"
Magnification Ratio (3)	H: 1:14.7, V: 1:7.4
Length (4)	210 mm / 8.1"
Length including flange focal distance (5)	262 mm / 10.2"
Front Diameter (6)	95 mm / 3.7"
Maximum Housing Diameter	114 mm / 4.5"
Weight (kg)	3.1
Weight (lbs)	6.8
Entrance Pupil (7) (mm)	-146
Entrance Pupil (7) (inch)	-5.74
Angle of View H - V	25° - 11°
Super 35 Cinemascope (8) Image Diameter	29.26 mm <sup>(9)</sup>
inage Diameter	23.20 111111 (-)

<sup>(</sup>x) For abbreviations please see legend at end of document







### (1) Lens Mount

Positive locking (PL) 54 mm stainless steel lens mount with Lens Data System (LDS) contacts.

#### (2) Close Focus

Close focus is measured from the film/sensor plane.

### (3) Magnification ratio

Magnification Ratio is the relationship of the size of an object on the film/sensor plane (first number) to the size of that object in real life (second number) at the close focus setting; horizontal (H) and vertical (V).

### (4) Length

Length is measured from the lens mount to the front of the lens housing.

### (5) Length including flange focal distance

Length is measured from the image to the front of the lens housing.

### (6) Front Diameter

Diameter of the lens/matte box interface.

### (7) Entrance Pupil

The distance from the entrance pupil to the film/sensor plane at focus = infinity. Positive numbers indicated an entrance pupil behind, negative numbers indicated an entrance pupil in front the film/sensor plane.

The entrance pupil (often mistakenly called "nodal point") is the center of perspective; moving the camera/lens system around the center of the entrance pupil prevents parallax errors.

While largerly irrelevant for live action, this measurement is important for special effects work.

### (8) Angle of View H, V (Super 35 Cinemascope)

Horizontal (H) and vertical (V) angles of view for a Super 35 Cinemascope camera aperture (dimensions 22.5 mm x 18.7 mm / 0.8858" x 0.7362").

### (9) Image Diameter

The image diameter (ID) is the diameter of the image circle needed for the respective format. These lenses are designed for the largest ID given here.



# Master Anamorphic T1.9/75 mm

A range of seven high-performance prime lenses, the ARRI/ZEISS Master Anamorphic series represents a significant step forward in the technology and practicality of anamorphic cinematography for 35 format digital and film cameras.

For the first time, a perfect combination of compact size, minimal weight, very high speed and exceptional optical design with minimal distortion has been achieved in a set of anamorphics. With beautiful out-of-focus backgrounds and a smooth, cinematic look, the Master Anamorphic lenses are as fast and easy to use on set as other modern cine lenses.

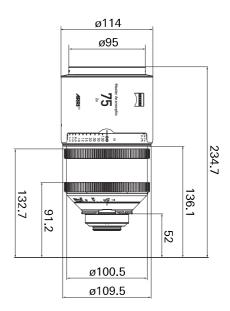
### **Main Features**

- Low distortion for uncompromised Cinemascope
  - straight lines stay straight
  - no distortion compensation in post necessary
  - low distortion even at close focus
- Cinematic bokeh with high contrast and nice focus fall-off
  - · very smooth out-of-focus image
  - immersive look
- Beautiful skin tones and precise color rendition
  - smooth and pleasant skin tones
  - Crisp, natural color rendition
- Characteristic out-of-focus highlights
  - oval and uniformly illuminated out-of-focus highlights
  - smooth iris shape because of 15 aperture blades
- Large image field for full freedom in composition
  - full 2.39:1 format is useable for image composition
  - no visible image drop at the corners
- Large aperture of T1.9 for shallow depth of focus
  - T1.9 useable with any focal length at any distance
  - overcomes the old rule: "anamorphics need to be stopped down to T4.5"
- Virtually no image breathing
- No anamorphic mumps (fat face effect)
- Super color matched to other ARRI/ZEISS primes and ARRI/FUJINON zooms
- ARRI Lens Data System (LDS) for lens metadata

Lens Mount (1):	PL-LDS
Aperture	T1.9 - T22
Close Focus (2)	0.90 m / 3'
Magnification Ratio (3)	H: 1:19.6, V: 1:9.8
Length (4)	183 mm / 7.2"
Length including flange focal distance (5)	235 mm / 9.3"
Front Diameter (6)	95 mm / 3.7"
Maximum Housing Diameter	114 mm / 4.5"
Weight (kg)	2.6
Weight (lbs)	5.7
Entrance Pupil (7) (mm)	-137
Entrance Pupil (inch)	-5.38
Angle of View H - V Super 35 Cinemascope <sup>(8)</sup>	33° - 14°
Image Diameter	29.26 mm <sup>(9)</sup>

x For abbreviations please see legend at end of document







### (1) Lens Mount

Positive locking (PL) 54 mm stainless steel lens mount with Lens Data System (LDS) contacts.

#### (2) Close Focus

Close focus is measured from the film/sensor plane.

### (3) Magnification ratio

Magnification Ratio is the relationship of the size of an object on the film/sensor plane (first number) to the size of that object in real life (second number) at the close focus setting; horizontal (H) and vertical (V).

### (4) Length

Length is measured from the lens mount to the front of the lens housing.

### (5) Length including flange focal distance

Length is measured from the image to the front of the lens housing.

### (6) Front Diameter

Diameter of the lens/matte box interface.

### (7) Entrance Pupil

The distance from the entrance pupil to the film/sensor plane at focus = infinity. Positive numbers indicated an entrance pupil behind, negative numbers indicated an entrance pupil in front the film/sensor plane.

The entrance pupil (often mistakenly called "nodal point") is the center of perspective; moving the camera/lens system around the center of the entrance pupil prevents parallax errors.

While largerly irrelevant for live action, this measurement is important for special effects work.

### (8) Angle of View H, V (Super 35 Cinemascope)

Horizontal (H) and vertical (V) angles of view for a Super 35 Cinemascope camera aperture (dimensions 22.5 mm x 18.7 mm / 0.8858" x 0.7362").

### (9) Image Diameter

The image diameter (ID) is the diameter of the image circle needed for the respective format. These lenses are designed for the largest ID given here.



# Master Anamorphic T1.9/60 mm

A range of seven high-performance prime lenses, the ARRI/ZEISS Master Anamorphic series represents a significant step forward in the technology and practicality of anamorphic cinematography for 35 format digital and film cameras.

For the first time, a perfect combination of compact size, minimal weight, very high speed and exceptional optical design with minimal distortion has been achieved in a set of anamorphics. With beautiful out-of-focus backgrounds and a smooth, cinematic look, the Master Anamorphic lenses are as fast and easy to use on set as other modern cine lenses.

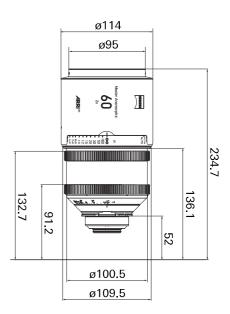
### **Main Features**

- Low distortion for uncompromised Cinemascope
  - straight lines stay straight
  - no distortion compensation in post necessary
  - low distortion even at close focus
- Cinematic bokeh with high contrast and nice focus fall-off
  - very smooth out-of-focus image
  - immersive look
- Beautiful skin tones and precise color rendition
  - smooth and pleasant skin tones
  - Crisp, natural color rendition
- Characteristic out-of-focus highlights
  - oval and uniformly illuminated out-of-focus highlights
  - smooth iris shape because of 15 aperture blades
- Large image field for full freedom in composition
  - full 2.39:1 format is useable for image composition
  - no visible image drop at the corners
- Large aperture of T1.9 for shallow depth of focus
  - T1.9 useable with any focal length at any distance
  - overcomes the old rule: "anamorphics need to be stopped down to T4.5"
- Virtually no image breathing
- No anamorphic mumps (fat face effect)
- Super color matched to other ARRI/ZEISS primes and ARRI/FUJINON zooms
- ARRI Lens Data System (LDS) for lens metadata

Lens Mount (1):	PL-LDS
Aperture	T1.9 - T22
Close Focus (2)	0.90 m / 3'
Magnification Ratio (3)	H: 1:24.3, V: 1:12.2
Length (4)	183 mm / 7.2"
Length including flange focal distance (5)	235 mm / 9.3"
Front Diameter (6)	95 mm / 3.7"
Maximum Housing Diameter	114 mm / 4.5"
Weight (kg)	2.7
Weight (lbs)	6
Entrance Pupil (7) (mm)	-152
Entrance Pupil (7) (inch)	-5.99
Angle of View H - V Super 35 Cinemascope <sup>(8)</sup>	41° - 18°
Image Diameter	29.26 mm <sup>(9)</sup>

x For abbreviations please see legend at end of document







### (1) Lens Mount

Positive locking (PL) 54 mm stainless steel lens mount with Lens Data System (LDS) contacts.

#### (2) Close Focus

Close focus is measured from the film/sensor plane.

### (3) Magnification ratio

Magnification Ratio is the relationship of the size of an object on the film/sensor plane (first number) to the size of that object in real life (second number) at the close focus setting; horizontal (H) and vertical (V).

### (4) Length

Length is measured from the lens mount to the front of the lens housing.

### (5) Length including flange focal distance

Length is measured from the image to the front of the lens housing.

### (6) Front Diameter

Diameter of the lens/matte box interface.

### (7) Entrance Pupil

The distance from the entrance pupil to the film/sensor plane at focus = infinity. Positive numbers indicated an entrance pupil behind, negative numbers indicated an entrance pupil in front the film/sensor plane.

The entrance pupil (often mistakenly called "nodal point") is the center of perspective; moving the camera/lens system around the center of the entrance pupil prevents parallax errors.

While largerly irrelevant for live action, this measurement is important for special effects work.

### (8) Angle of View H, V (Super 35 Cinemascope)

Horizontal (H) and vertical (V) angles of view for a Super 35 Cinemascope camera aperture (dimensions 22.5 mm x 18.7 mm / 0.8858" x 0.7362").

### (9) Image Diameter

The image diameter (ID) is the diameter of the image circle needed for the respective format. These lenses are designed for the largest ID given here.



# Master Anamorphic T1.9/50 mm

A range of seven high-performance prime lenses, the ARRI/ZEISS Master Anamorphic series represents a significant step forward in the technology and practicality of anamorphic cinematography for 35 format digital and film cameras.

For the first time, a perfect combination of compact size, minimal weight, very high speed and exceptional optical design with minimal distortion has been achieved in a set of anamorphics. With beautiful out-of-focus backgrounds and a smooth, cinematic look, the Master Anamorphic lenses are as fast and easy to use on set as other modern cine lenses.

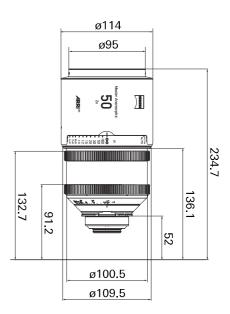
### **Main Features**

- Low distortion for uncompromised Cinemascope
  - straight lines stay straight
  - no distortion compensation in post necessary
  - low distortion even at close focus
- Cinematic bokeh with high contrast and nice focus fall-off
  - · very smooth out-of-focus image
  - immersive look
- Beautiful skin tones and precise color rendition
  - smooth and pleasant skin tones
  - Crisp, natural color rendition
- Characteristic out-of-focus highlights
  - oval and uniformly illuminated out-of-focus highlights
  - smooth iris shape because of 15 aperture blades
- Large image field for full freedom in composition
  - full 2.39:1 format is useable for image composition
  - no visible image drop at the corners
- Large aperture of T1.9 for shallow depth of focus
  - T1.9 useable with any focal length at any distance
  - overcomes the old rule: "anamorphics need to be stopped down to T4.5"
- Virtually no image breathing
- No anamorphic mumps (fat face effect)
- Super color matched to other ARRI/ZEISS primes and ARRI/FUJINON zooms
- ARRI Lens Data System (LDS) for lens metadata

L A.A. (1):	DI LDG
Lens Mount (1):	PL-LDS
Aperture	T1.9 - T22
Close Focus (2)	0.75 m / 2'6"
Magnification Ratio (3)	H: 1:22.2, V: 1:11.1
Length (4)	183 mm / 7.2"
Length including flange focal distance (5)	235 mm / 9.3"
Front Diameter (6)	95 mm / 3.7"
Maximum Housing Diameter	114 mm / 4.5"
Weight (kg)	2.6
Weight (lbs)	5.7
Entrance Pupil (7) (mm)	-171
Entrance Pupil (7) (inch)	-6.75
Angle of View H - V Super 35 Cinemascope (8)	48° - 21°
Image Diameter	29.26 mm <sup>(9)</sup>

<sup>(</sup>x) For abbreviations please see legend at end of document







### (1) Lens Mount

Positive locking (PL) 54 mm stainless steel lens mount with Lens Data System (LDS) contacts.

#### (2) Close Focus

Close focus is measured from the film/sensor plane.

### (3) Magnification ratio

Magnification Ratio is the relationship of the size of an object on the film/sensor plane (first number) to the size of that object in real life (second number) at the close focus setting; horizontal (H) and vertical (V).

### (4) Length

Length is measured from the lens mount to the front of the lens housing.

### (5) Length including flange focal distance

Length is measured from the image to the front of the lens housing.

### (6) Front Diameter

Diameter of the lens/matte box interface.

### (7) Entrance Pupil

The distance from the entrance pupil to the film/sensor plane at focus = infinity. Positive numbers indicated an entrance pupil behind, negative numbers indicated an entrance pupil in front the film/sensor plane.

The entrance pupil (often mistakenly called "nodal point") is the center of perspective; moving the camera/lens system around the center of the entrance pupil prevents parallax errors.

While largerly irrelevant for live action, this measurement is important for special effects work.

### (8) Angle of View H, V (Super 35 Cinemascope)

Horizontal (H) and vertical (V) angles of view for a Super 35 Cinemascope camera aperture (dimensions 22.5 mm x 18.7 mm / 0.8858" x 0.7362").

### (9) Image Diameter

The image diameter (ID) is the diameter of the image circle needed for the respective format. These lenses are designed for the largest ID given here.



# Master Anamorphic T1.9/40 mm

A range of seven high-performance prime lenses, the ARRI/ZEISS Master Anamorphic series represents a significant step forward in the technology and practicality of anamorphic cinematography for 35 format digital and film cameras.

For the first time, a perfect combination of compact size, minimal weight, very high speed and exceptional optical design with minimal distortion has been achieved in a set of anamorphics. With beautiful out-of-focus backgrounds and a smooth, cinematic look, the Master Anamorphic lenses are as fast and easy to use on set as other modern cine lenses.

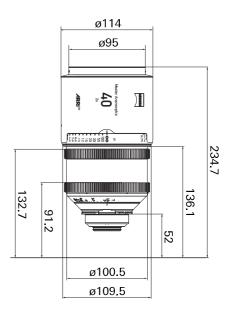
### **Main Features**

- Low distortion for uncompromised Cinemascope
  - straight lines stay straight
  - no distortion compensation in post necessary
  - low distortion even at close focus
- Cinematic bokeh with high contrast and nice focus fall-off
  - · very smooth out-of-focus image
  - immersive look
- Beautiful skin tones and precise color rendition
  - smooth and pleasant skin tones
  - Crisp, natural color rendition
- Characteristic out-of-focus highlights
  - oval and uniformly illuminated out-of-focus highlights
  - smooth iris shape because of 15 aperture blades
- Large image field for full freedom in composition
  - full 2.39:1 format is useable for image composition
  - no visible image drop at the corners
- Large aperture of T1.9 for shallow depth of focus
  - T1.9 useable with any focal length at any distance
  - overcomes the old rule: "anamorphics need to be stopped down to T4.5"
- Virtually no image breathing
- No anamorphic mumps (fat face effect)
- Super color matched to other ARRI/ZEISS primes and ARRI/FUJINON zooms
- ARRI Lens Data System (LDS) for lens metadata

Lens Mount (1):	DI I DC
Lens Mount	PL-LDS
Aperture	T1.9 - T22
Close Focus (2)	0.70 m / 2'4"
Magnification Ratio (3)	H: 1:25.6, V: 1:12.8
Length (4)	183 mm / 7.2"
Length including flange focal distance (5)	235 mm / 9.3"
Front Diameter (6)	95 mm / 3.7"
Maximum Housing Diameter	114 mm / 4.5"
Weight (kg)	2.7
Weight (lbs)	6
Entrance Pupil (7) (mm)	-177
Entrance Pupil (7) (inch)	-6.96
Angle of View H - V Super 35 Cinemascope (8)	59° - 26°
Image Diameter	29.26 mm <sup>(9)</sup>

<sup>(</sup>x) For abbreviations please see legend at end of document







### (1) Lens Mount

Positive locking (PL) 54 mm stainless steel lens mount with Lens Data System (LDS) contacts.

#### (2) Close Focus

Close focus is measured from the film/sensor plane.

### (3) Magnification ratio

Magnification Ratio is the relationship of the size of an object on the film/sensor plane (first number) to the size of that object in real life (second number) at the close focus setting; horizontal (H) and vertical (V).

### (4) Length

Length is measured from the lens mount to the front of the lens housing.

### (5) Length including flange focal distance

Length is measured from the image to the front of the lens housing.

### (6) Front Diameter

Diameter of the lens/matte box interface.

### (7) Entrance Pupil

The distance from the entrance pupil to the film/sensor plane at focus = infinity. Positive numbers indicated an entrance pupil behind, negative numbers indicated an entrance pupil in front the film/sensor plane.

The entrance pupil (often mistakenly called "nodal point") is the center of perspective; moving the camera/lens system around the center of the entrance pupil prevents parallax errors.

While largerly irrelevant for live action, this measurement is important for special effects work.

### (8) Angle of View H, V (Super 35 Cinemascope)

Horizontal (H) and vertical (V) angles of view for a Super 35 Cinemascope camera aperture (dimensions 22.5 mm x 18.7 mm / 0.8858" x 0.7362").

### (9) Image Diameter

The image diameter (ID) is the diameter of the image circle needed for the respective format. These lenses are designed for the largest ID given here.



# Master Anamorphic T1.9/35 mm

A range of seven high-performance prime lenses, the ARRI/ZEISS Master Anamorphic series represents a significant step forward in the technology and practicality of anamorphic cinematography for 35 format digital and film cameras.

For the first time, a perfect combination of compact size, minimal weight, very high speed and exceptional optical design with minimal distortion has been achieved in a set of anamorphics. With beautiful out-of-focus backgrounds and a smooth, cinematic look, the Master Anamorphic lenses are as fast and easy to use on set as other modern cine lenses.

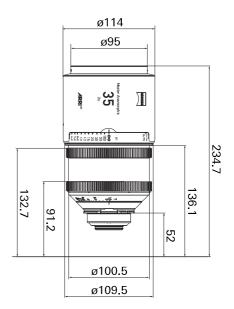
### **Main Features**

- Low distortion for uncompromised Cinemascope
  - straight lines stay straight
  - no distortion compensation in post necessary
  - low distortion even at close focus
- Cinematic bokeh with high contrast and nice focus fall-off
  - very smooth out-of-focus image
  - immersive look
- Beautiful skin tones and precise color rendition
  - smooth and pleasant skin tones
  - Crisp, natural color rendition
- Characteristic out-of-focus highlights
  - oval and uniformly illuminated out-of-focus highlights
  - smooth iris shape because of 15 aperture blades
- Large image field for full freedom in composition
  - full 2.39:1 format is useable for image composition
  - no visible image drop at the corners
- Large aperture of T1.9 for shallow depth of focus
  - T1.9 useable with any focal length at any distance
  - overcomes the old rule: "anamorphics need to be stopped down to T4.5"
- Virtually no image breathing
- No anamorphic mumps (fat face effect)
- Super color matched to other ARRI/ZEISS primes and ARRI/FUJINON zooms
- ARRI Lens Data System (LDS) for lens metadata

Lens Mount (1):	PL-LDS
Aperture	T1.9 - T22
Close Focus (2)	0.75 m / 2'6"
Magnification Ratio (3)	H: 1:32.3, V: 1:16.1
Length (4)	183 mm / 7.2"
Length including flange focal distance (5)	235 mm / 9.3"
Front Diameter (6)	95 mm / 3.7"
Maximum Housing Diameter	114 mm / 4.5"
Weight (kg)	2.6
Weight (lbs)	5.7
Entrance Pupil (7) (mm)	-179
Entrance Pupil (inch)	-7.04
Angle of View H - V Super 35 Cinemascope (8)	65° - 30°
Image Diameter	29.26 mm <sup>(9)</sup>

x For abbreviations please see legend at end of document







### (1) Lens Mount

Positive locking (PL) 54 mm stainless steel lens mount with Lens Data System (LDS) contacts.

#### (2) Close Focus

Close focus is measured from the film/sensor plane.

### (3) Magnification ratio

Magnification Ratio is the relationship of the size of an object on the film/sensor plane (first number) to the size of that object in real life (second number) at the close focus setting; horizontal (H) and vertical (V).

### (4) Length

Length is measured from the lens mount to the front of the lens housing.

### (5) Length including flange focal distance

Length is measured from the image to the front of the lens housing.

### (6) Front Diameter

Diameter of the lens/matte box interface.

### (7) Entrance Pupil

The distance from the entrance pupil to the film/sensor plane at focus = infinity. Positive numbers indicated an entrance pupil behind, negative numbers indicated an entrance pupil in front the film/sensor plane.

The entrance pupil (often mistakenly called "nodal point") is the center of perspective; moving the camera/lens system around the center of the entrance pupil prevents parallax errors.

While largerly irrelevant for live action, this measurement is important for special effects work.

### (8) Angle of View H, V (Super 35 Cinemascope)

Horizontal (H) and vertical (V) angles of view for a Super 35 Cinemascope camera aperture (dimensions 22.5 mm x 18.7 mm / 0.8858" x 0.7362").

### (9) Image Diameter

The image diameter (ID) is the diameter of the image circle needed for the respective format. These lenses are designed for the largest ID given here.