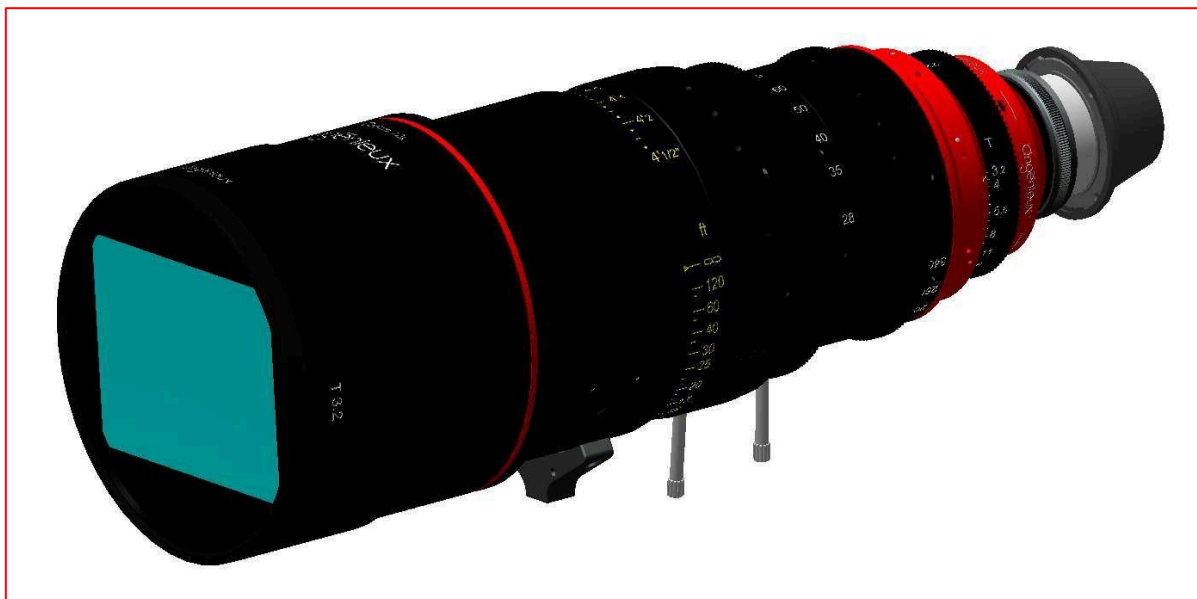


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## USER'S MANUAL *MANUEL UTILISATEUR*

# OPTIMO 28-340



Reference : 311 822 B  
Edition : 12/2012



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# 1 GENERAL DESCRIPTION AND MAINTENANCE RECOMMENDATIONS

## 1 DESCRIPTION GENERALE ET CONSEILS POUR LA MAINTENANCE

### 1.1 GENERAL DESCRIPTION

#### 1.1 DESCRIPTION GENERALE

#### Angénieux OPTIMO 28 -340 Super 35 Film or Digital Lens

**Zoom ratio:** 12x  
**Focal length:** 28-340mm  
**Aperture:** T3.2 - f/2.8  
**MOD:** 1.23 m - 4'1/2"

**Weight (approx.):** 11.1kg – 24.4 lbs

**Front Diameter:** 162 mm

**Focal length** 28mm 340mm

**Horizontal angular field of view** 47.7° 4.1° (Super 35 format)

#### *Objectif Super 35 Film et Digital Angénieux OPTIMO 28 -340*

*Zoom ratio:* 12x  
*Focale:* 28-340mm  
*Ouverture:* T3.2 - f/2.8  
*Distance minimum:* 1.23 m - 4'1/2"  
*Poids (approx.):* 11.1kg – 24.4 lbs  
*Diamètre avant:* 162 mm

<i>Focale</i>	28mm	340mm	
<i>Angle de champs</i>	47.7°	4.1°	(format Super 35)
<i>Dimensions objet à la distance minimum (mm)</i>	783x583	65x50	(format Super 35)
<i>Angle de champs</i>	42.1°	3.8°	(format 35 mm)
<i>Dimensions objet à la distance minimum (mm)</i>	687x493	58x42	(format 35 mm)

### 1.2 MAINTENANCE RECOMMENDATIONS

#### 1.2 CONSEILS POUR LA MAINTENANCE

The complete maintenance of such a lens should only be performed by highly qualified people or factory trained technicians.

If you are uncertain of your capabilities to do the repair, feel free to send the lens to our THALES ANGENIEUX After Sales Service. Our qualified technicians will ensure proper handling of all maintenance and repair related items.

In addition, THALES ANGENIEUX can offer preventive maintenance operations, to keep your lens, always in perfect conditions

Feel free to contact us for :

France and International customer support at : [angenieuxservice@fr.thalesgroup.com](mailto:angenieuxservice@fr.thalesgroup.com)

Americas customer support at : [jbouchut@tccus.com](mailto:jbouchut@tccus.com)

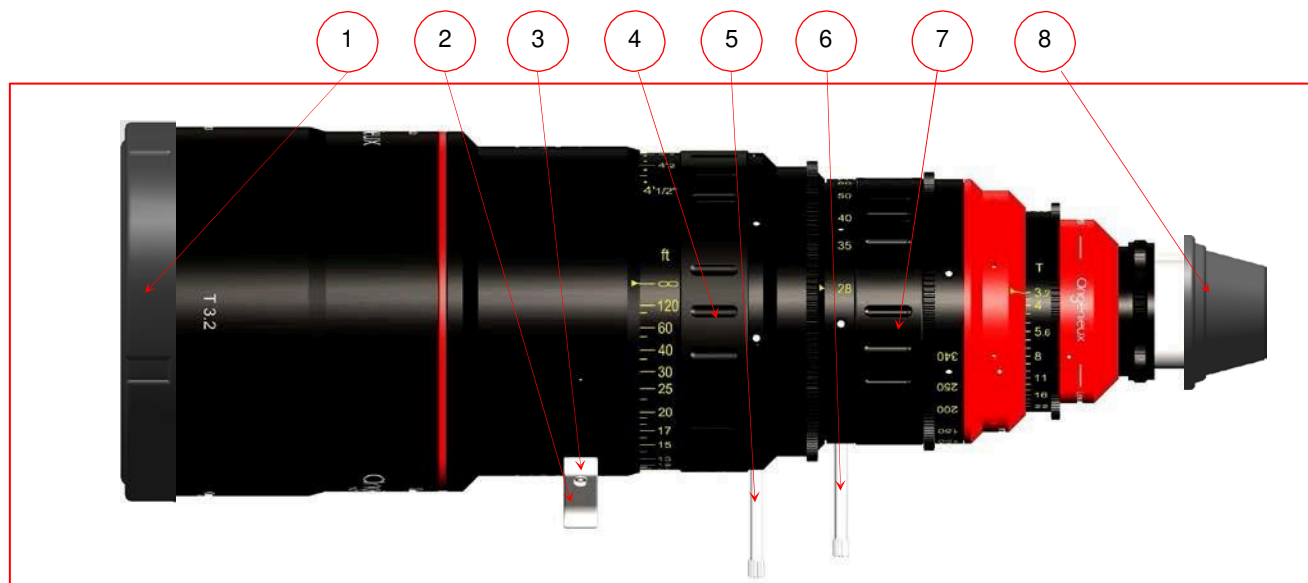
*La maintenance complète de ce type d'objectif ne peut être effectuée que par des personnes hautement qualifiées et formées par THALESANGENIEUX.*

*Si vous avez un doute sur votre capacité à effectuer cette réparation, n'hésitez pas à confier le produit au Service Après-Ventes de THALES ANGENIEUX. Vous aurez ainsi la garantie d'avoir un produit parfaitement réparé.*

*En outre, THALES ANGENIEUX peut vous proposer des actions de maintenance préventive afin de maintenir votre produit toujours à son meilleur niveau*

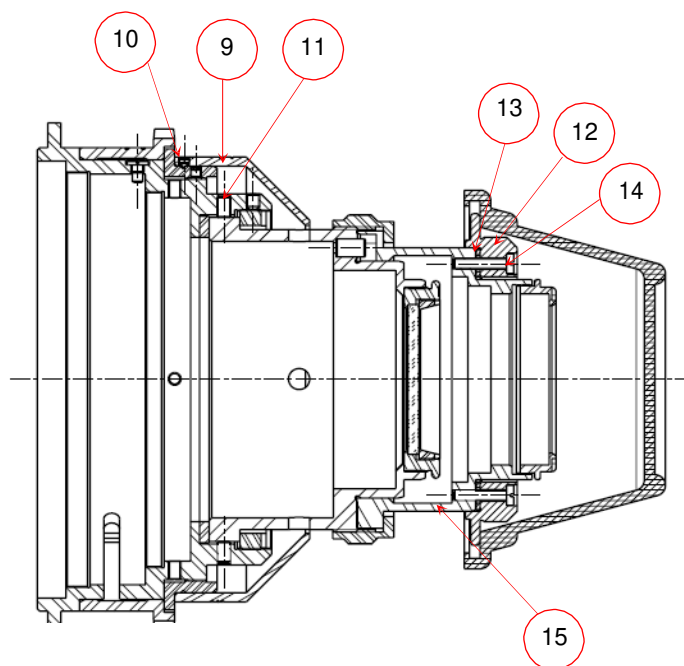
*Veillez nous contacter à : [angenieuxservice@fr.thalesgroup.com](mailto:angenieuxservice@fr.thalesgroup.com)*

**3 EXTERNAL VIEW**  
**3 VUE EXTERIEURE**



Indication <i>Indice</i>	P/N <i>P/N</i>	Designation <i>Désignation</i>	Quantity <i>Quantité</i>
1	212 858	Front cap <i>Bouchon avant</i>	1
2	212 925	Lens bracket <i>Support d'objectif</i>	1
3	986 297	Screws for bracket <i>Vis du support d'objectif</i>	2
4	212 748	Focus rubber ring <i>Bague crantée de MAP</i>	1
5	212 926	Focus lever <i>Levier de MAP</i>	1
6	212 926	Zoom lever <i>Levier focale</i>	1
7	212 751	Zoom rubber ring <i>Bague crantée focale</i>	1
8	188 245	PL mount cap <i>Bouchon de la monture PL</i>	1

**4 REAR GROUP VIEW (FOR BACK FOCUS AN TRACKING ADJUSTMENT)**  
**4 VUE DU GROUPE ARRIERE (POUR LE REGLAGE DU TIRAGE ET DU TRACKING)**



<b>Indication</b> <i>Indice</i>	<b>P/N</b> <i>P/N</i>	<b>Designation</b> <i>Désignation</i>	<b>Quantity</b> <i>Quantité</i>
9	314366	<b>Rear ring</b> <i>Cache arrière</i>	1
10	992 707	<b>Rear ring fixation screws</b> <i>Vis de la cache arrière</i>	3
11	987 367	<b>Tracking adjustment screws</b> <i>Vis de réglage du tracking</i>	4
12	306 979	<b>PL mount</b> <i>Bague d'accrochage</i>	1
13	306 801	<b>Flange peelable shim (back focus adjustment)</b> <i>Rondelle de tirage pelable (réglage de tirage)</i>	1
14	981 167	<b>PL mount screws</b> <i>Vis de la bague d'accrochage</i>	8
15	311 233	<b>Rear sub-assembly</b> <i>Sous-ensemble arrière</i>	1

#### 4.1 FLANGE/BACK-FOCUSADJUSTMENT

To adjust the flange, change the thickness of the flange shim (13)

- ① Mount a PL checker on the lens
- ① Mount the lens on a projector at around 6' from the screen
- ① Optimize the focus at long focal length, then, zoom to short focal length
  - ① If the plane of the best focus is between the screen and the lens, it is necessary to decrease the thickness of the flange shim
  - ① If the plane of the best focus is behind the screen, it is necessary to increase the thickness of the flange shim.
- ① To replace the flange shim, remove the PL mount (12) by unscrewing the 8 screws (14).
- ① Remove the flange shim (13)
- ① Modify the thickness of the flange shim (13)
- ① Reinstall the flange shim (13)
- ① Mount the PL mount (12)



Picture 4



Picture 5

#### 4.1 REGLAGE DU TIRAGE

Le réglage s'effectue par modification de l'épaisseur de la cale de tirage (13):

- ① Monter un vérificateur PL sur l'objectif,
- ① Monter le zoom sur une lanterne de projection,
- ① Se positionner à une distance de 1,80m (entre l'écran et plan de l'image),
- ① Faire la meilleure MAP à la longue focale,
- ① Puis se mettre à la courte focale :
  - ① Si le plan de la bonne MAP est entre l'écran et le zoom, il faut diminuer l'épaisseur de la rondelle de tirage.
  - ① Si le plan de la bonne MAP est derrière l'écran il faut augmenter l'épaisseur de la rondelle de tirage.
- ① Pour changer la rondelle de tirage, enlever la monture PL (12) en dévissant les 8 vis (14).
- ① Sortir la rondelle de tirage(13),
- ① Modifier l'épaisseur de la cale pelable de tirage 13,
- ① Remonter la rondelle de tirage(13),
- ① Monter la monture PL (12)



Photo 4



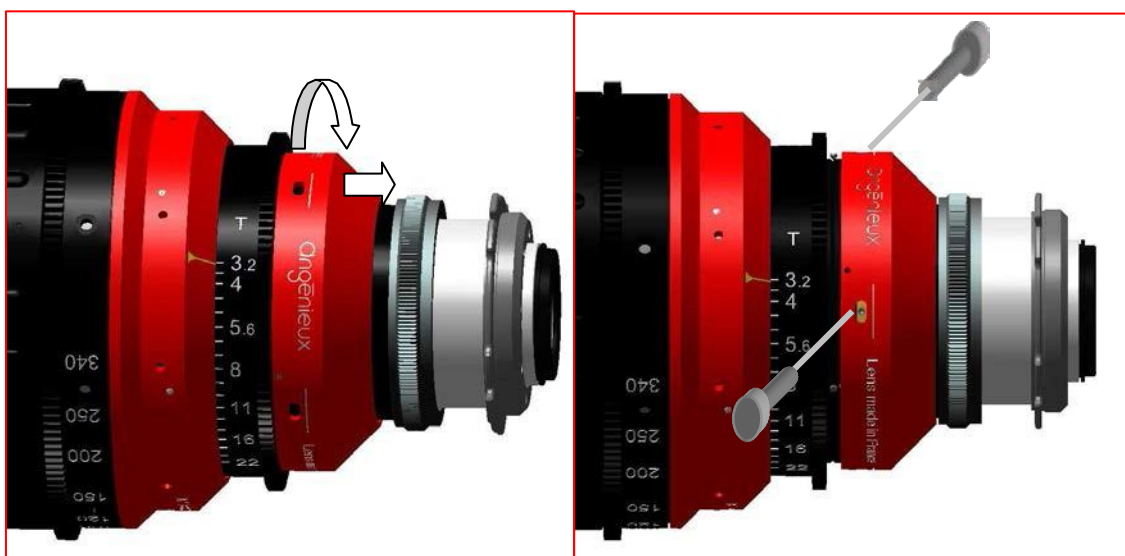
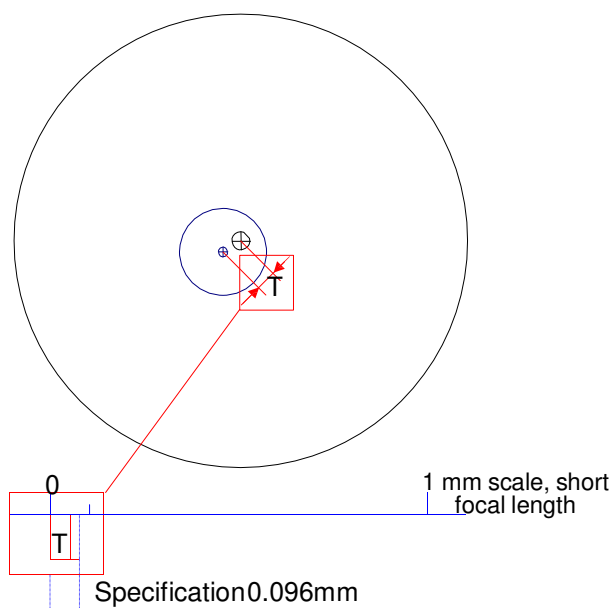
Photo 5



## 4.2 TRACKING ADJUSTMENT

- ① Mount a PL checker
- ① Mount the lens on a projector at around 6' from the screen
- ① Unscrew the 3 screws (10), rotate (approx. 45°) and displace the rear ring (9) so that the 4 tracking screws (11) become accessible
- ① Measure the tracking T between long focal length and short focal length
- ① Adjust the tracking T at short focal length with the screws (11) with an allen key 1/20 inch
- ① Reinstall the rear ring (9)

Picture 6a



Picture 6b

Picture 6c

## 4.2 REGLAGE DU TRACKING

- ① Monter un vérificateur PL
- ① Se positionner à une distance d'environ 2 m en longue focale,
- ① Desserrer les 3 vis (10), tourner (approx. 45°) et déplacer le cache arrière (9) pour que les 4 vis de tracking (11) sont accessibles.
- ① Mesurer le tracking T entre la longue focale et la courte focale
- ① Régler le tracking T à l'aide des vis réf (11) avec un cle allen 1.27mm
- ① Remonter le cache arrière (9).

Photo 6a

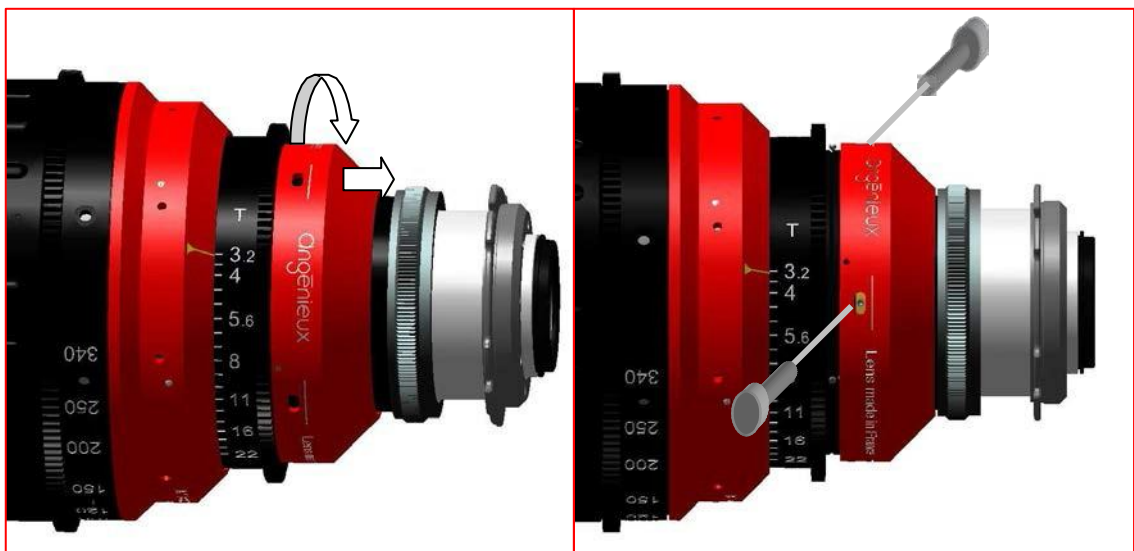
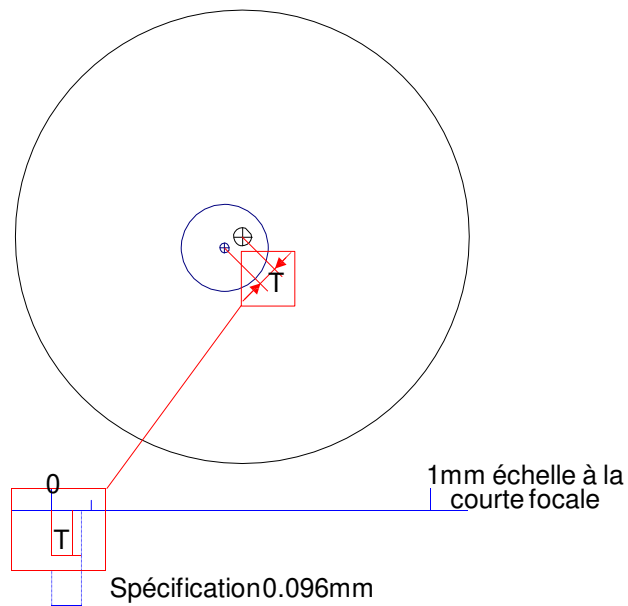
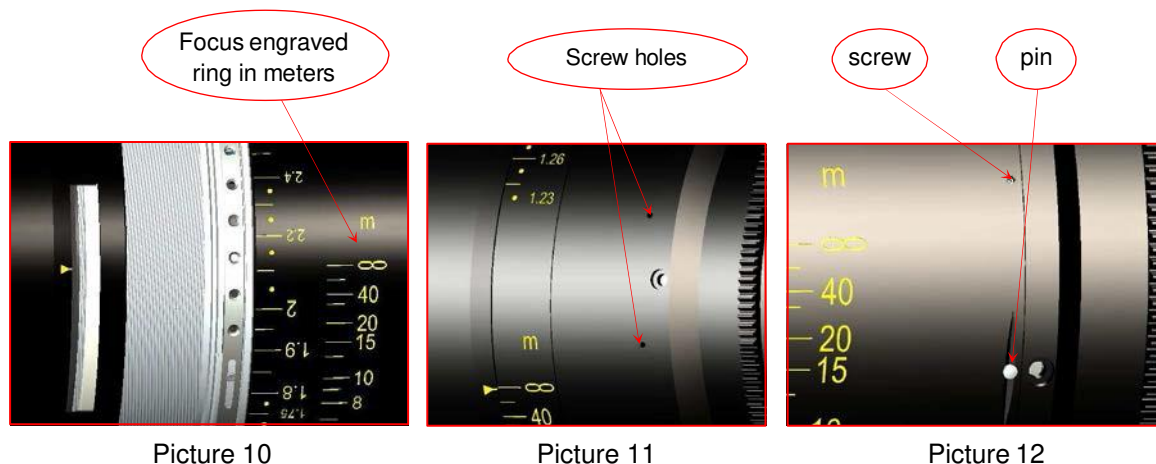
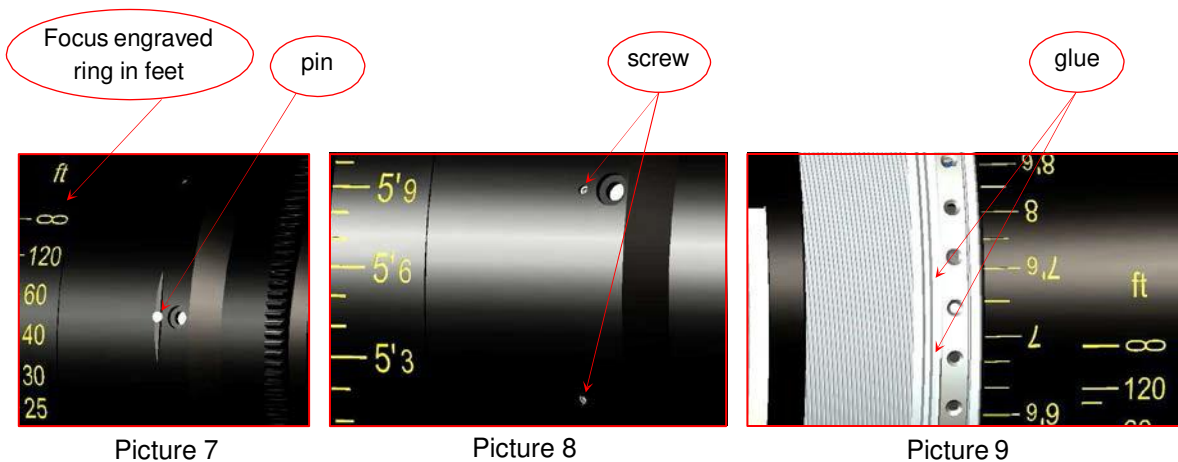


Photo 6b

Photo 6c

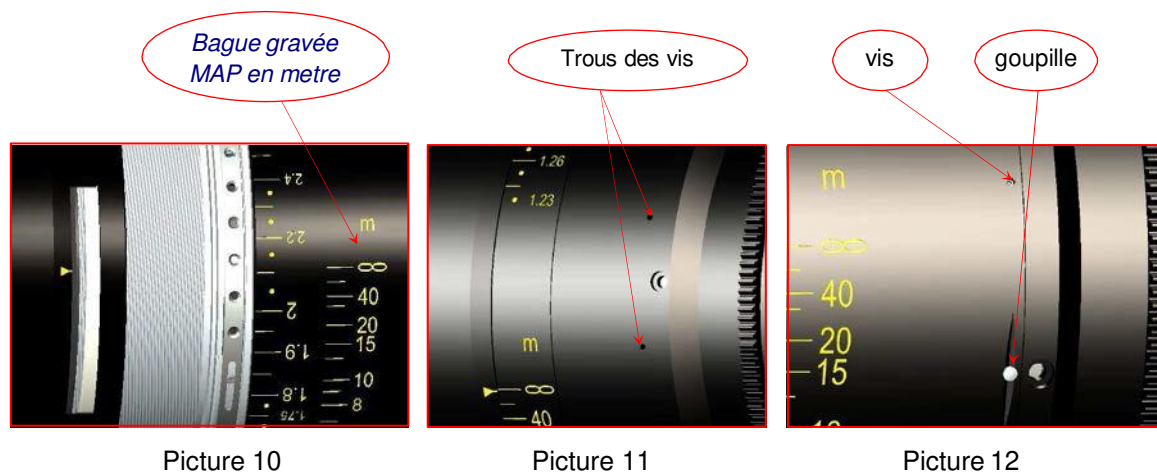
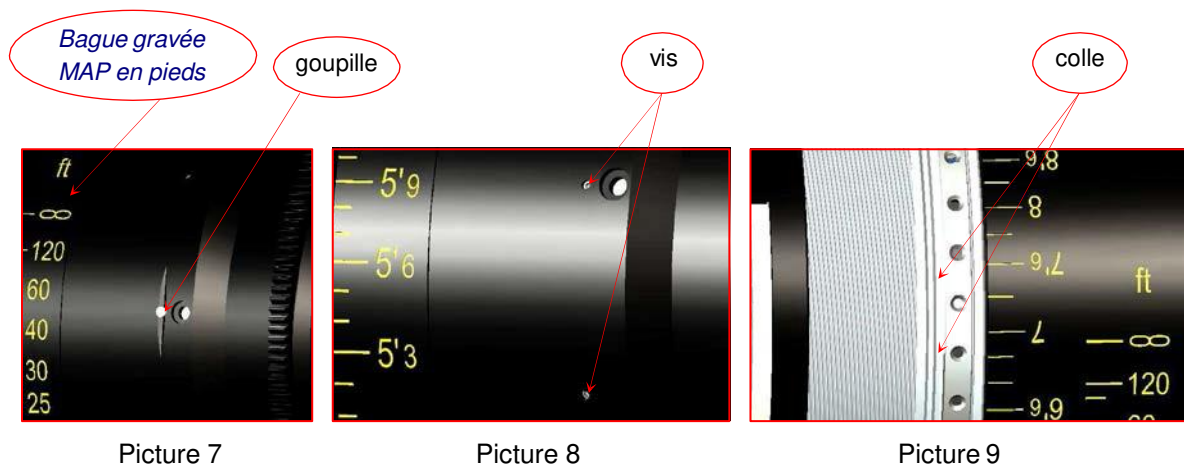
#### 4.3 REPLACEMENT OF THE FOCUS ENGRAVED RING (FEET INTO METERS)

- ① Remove the Focus rubber ring (4)
- ① Remove the pin for positioning the focus control ring Picture 7
- ① Put acetone on the head of the focus ring fixations screws
- ① Remove the 6 screws Picture 8
- ① Put acetone inside the holes, after having removed the fixations screws (to dissolve the glue)
- ① **BE CAREFUL:** to remove the focus engraved ring in feet picture 9, it is necessary to rotate it until reaching the appropriate position to pass over the focus end-stop. Take a lot of care that dust or metallic particles do not go inside the focus mechanism.
- ① Clean the V groove with acetone to dissolve the glue
- ① **BE CAREFUL:** to Install the focus engraved ring in meters Pictures 10-11, it is necessary to rotate it to find the appropriate position to pass over the focus end-stop
- ① Put locking varnish 286642 in the hole of the 6 screws Picture 11
- ① Install the pin for positioning the focus control ring Picture 12
- ① Mount the 6 screws and tighten them to the contact to prevent to have a too much stiff focus torque
- ① Re mount the focus rubber ring (4)

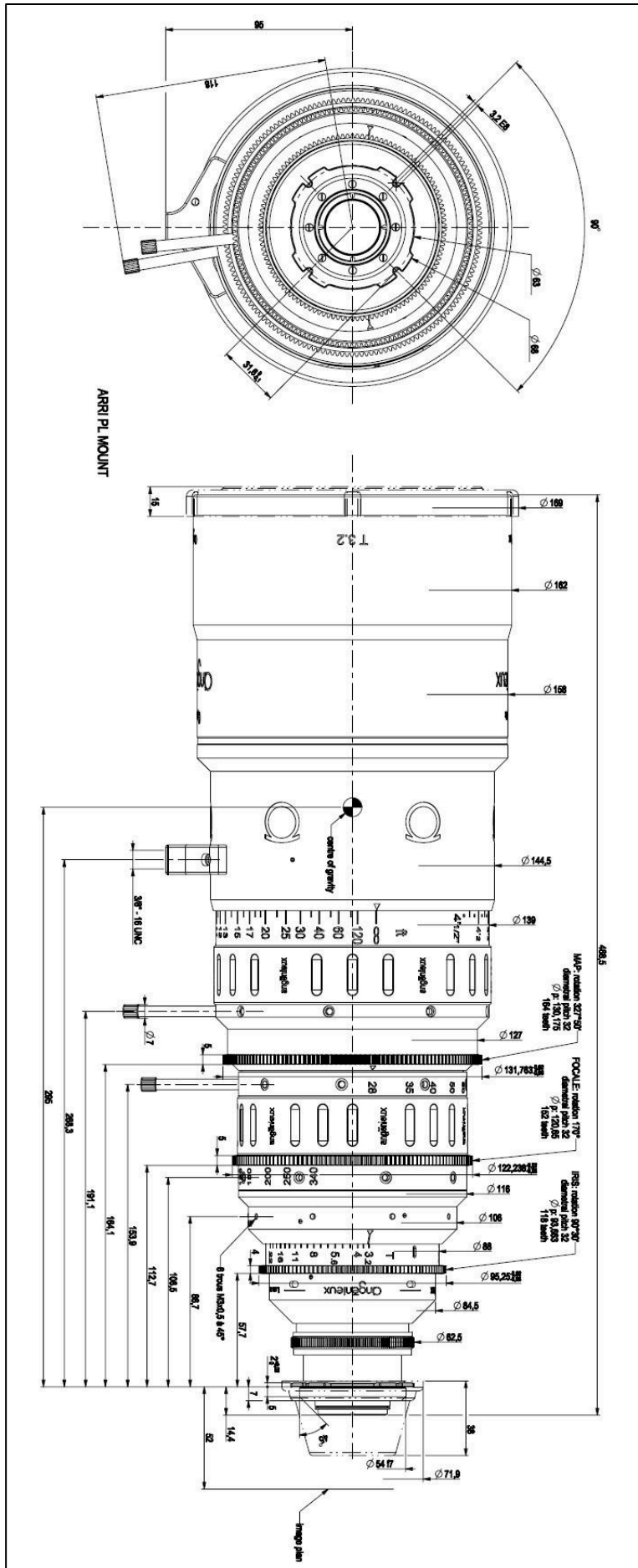


#### 4.3 CHANGEMENT DE LA BAGUE GRAVÉE MAP (PIEDS EN METRES)

- ① Enlever la bague crantée de MAP (4)
- ① Enlever la goupille d'orientation de la bague de commande MAP photo 7
- ① Mettre de l'acétone sur les têtes des vis de fixation de la bague de commande MAP
- ① Enlever les 6 vis photo 8
- ① Mettre de l'acétone dans les trous après avoir enlevé les vis (pour dissoudre la colle)
  
- ① **ATTENTION** : pour sortir la bague gravée MAP en pieds photo 9, il faut rechercher le passage de la butée MAP en faisant tourner la bague sur elle même, puis la retirer. Veiller à ce qu'aucune poussière ou particule mécanique ne pénètre dans le mécanisme de mise au point.
  
- ① Nettoyer la gorge en V à l'acétone pour dissoudre la colle
  
- ① **ATTENTION** : pour monter la bague gravée MAP en mètre photos 10 –11, faire tourner la bague pour trouver le passage de la butée MAP
  
- ① Mettre du vernis de blocage 286642 dans les 6 trous des vis photo 11
- ① Monter la goupille d'orientation de la bague de commande MAP photo 12
- ① Monter les 6 vis , les mettre seulement au contact pour éviter de détériorer le couple MAP photo 12
- ① Monter le bague crantée de MAP (4)



5 OUTLINE DRAWING  
5 PLAN D'ENCOMBREMENT



**6 DEPTH-OF-FIELD TABLES**  
**6 TABLES DE PROFONDEUR DE CHAMP**

**ZOOM Super 35**

**F = 28 - 340 mm**

The depth of field tables are provided for informational purposes only and are estimated with a circle of confusion of 0.025mm (1/1000inch).

The width of the sharpness zone grows proportionally with the focus distance and aperture and it is inversely proportional to the focal length.

In practice the depth of field limits can only be defined accurately by performing screen tests in true shooting conditions.

*Les tables de profondeur de champs sont fournies à titre indicatif pour un cercle de confusion moyen de 0,025mm (1/1000inch)  
 La profondeur de champ augmente proportionnellement avec la distance de mise au point ainsi qu'avec le diaphragme et est inversement proportionnelle à la focale.*

*Dans la pratique, seuls des essais filmés dans des conditions de tournage vous permettront de définir les bornes de cette profondeur de champ avec un maximum de précision*

## ZOOM OPTIMO 28-340

- 1 - Aperture
- 2 - Hyperfocal distance
- 3 - Object distance far/near
- 4 - Confusion circle : 0.025 mm

Distances in feet

F = 28 mm

1	Aperture	T 3.2	T 4	T 5.6	T 8	T11	T16	T22
2	Hyperfocal distance	39.402	32.758	24.056	17.135	12.937	9.267	7.074
3	Object distance	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near
	<b>50 feet</b>	∞ 22.606	∞ 20.344	∞ 16.747	∞ 13.197	∞ 10.648	∞ 8.114	∞ 6.436
	<b>30 feet</b>	120.53 17.599	356.71 16.236	∞ 13.922	∞ 11.440	∞ 9.522	∞ 7.489	∞ 6.069
	<b>20 feet</b>	38.508 13.780	48.310 12.961	112.42 11.494	∞ 9.804	∞ 8.406	∞ 6.829	∞ 5.663
	<b>16 feet</b>	25.505 11.850	29.322 11.256	44.106 10.163	255.57 8.852	∞ 7.726	∞ 6.404	∞ 5.390
	<b>13 feet</b>	18.359 10.199	20.180 9.771	25.945 8.963	48.813 7.959	∞ 7.064	∞ 5.973	∞ 5.106
	<b>11 feet</b>	14.439 8.985	15.500 8.662	18.551 8.041	27.385 7.248	67.428 6.520	∞ 5.606	∞ 4.856
	<b>9 feet</b>	11.039 7.665	11.615 7.440	13.149 6.999	16.779 6.418	25.569 5.866	1353.8 5.146	∞ 4.533
	<b>7 feet</b>	8.062 6.225	8.338 6.088	9.030 5.812	10.449 5.436	12.985 5.064	23.744 4.555	∞ 4.100
	<b>5 feet</b>	5.433 4.649	5.537 4.583	5.786 4.448	6.243 4.255	6.921 4.055	8.669 3.766	13.051 3.490
	<b>4 feet</b>	4.279	4.335	4.463	4.691	5.006	5.716	7.035
	<b>1/2 inch</b>	3.839	3.800	3.719	3.601	3.475	3.286	3.099

F = 35 mm

1	Aperture	T 3.2	T 4	T 5.6	T 8	T11	T16	T22
2	Hyperfocal distance	55.593	46.121	33.716	23.850	17.866	12.637	9.510
3	Object distance	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near
	<b>50 feet</b>	487.127 26.901	∞ 24.568	∞ 20.693	∞ 16.651	∞ 13.608	∞ 10.453	∞ 8.291
	<b>30 feet</b>	62.69 20.010	82.06 18.728	262.491 16.451	∞ 13.858	∞ 11.738	∞ 9.370	∞ 7.636
	<b>20 feet</b>	30.017 15.154	33.669 14.435	46.16 13.092	115.695 11.452	∞ 10.014	∞ 8.292	∞ 6.946
	<b>16 feet</b>	21.586 12.819	23.351 12.316	28.540 11.352	44.59 10.131	143.708 9.018	∞ 7.632	∞ 6.504
	<b>13 feet</b>	16.305 10.883	17.255 10.531	19.820 9.841	26.104 8.939	42.704 8.088	∞ 6.988	∞ 6.057
	<b>11 feet</b>	13.181 9.492	13.771 9.232	15.295 8.715	18.629 8.022	25.421 7.352	75.961 6.457	∞ 5.678
	<b>9 feet</b>	10.325 8.012	10.665 7.835	11.505 7.477	13.186 6.986	16.060 6.495	26.6 5.818	178.752 5.204
	<b>7 feet</b>	7.705 6.433	7.877 6.328	8.286 6.111	9.046 5.804	10.189 5.486	13.231 5.030	21.494 4.597
	<b>5 feet</b>	5.293 4.746	5.361 4.697	5.518 4.594	5.791 4.443	6.164 4.282	6.979 4.037	8.402 3.791
	<b>4 feet</b>	4.204	4.241	4.324	4.466	4.652	5.032	5.616
	<b>1/2 inch</b>	3.896	3.867	3.807	3.716	3.617	3.463	3.302

## ZOOM OPTIMO 28-340

- 1 - Aperture
- 2 - Hyperfocal distance
- 3 - Object distance far/near
- 4 - Confusion circle : 0.025 mm

Distances in feet

F = 50 mm

F = 60 mm

1	Aperture	T 3.2	T 4	T 5.6	T 8	T11	T16	T22
2	Hyperfocal distance	112.13	92.788	67.468	47.333	35.121	24.448	18.067
3	Object distance	<u>Far</u>	<u>Far</u>	<u>Far</u>	<u>Far</u>	<u>Far</u>	<u>Far</u>	<u>Far</u>
		<u>Near</u>	<u>Near</u>	<u>Near</u>	<u>Near</u>	<u>Near</u>	<u>Near</u>	<u>Near</u>
	<b>50 feet</b>	88.399 35.072	105.75 33.016	186.54 29.282	∞ 24.892	∞ 21.190	∞ 16.928	∞ 13.719
	<b>30 feet</b>	40.131 24.049	43.251 23.094	52.205 21.257	77.993 18.910	192.37 16.754	∞ 14.043	∞ 11.818
	<b>20 feet</b>	23.855 17.264	24.879 16.786	27.482 15.830	32.992 14.539	43.485 13.276	99.813 11.573	∞ 10.070
	<b>16 feet</b>	18.293 14.248	18.870 13.930	20.282 13.285	23.034 12.389	27.526 11.486	42.087 10.223	122.61 9.062
	<b>13 feet</b>	14.416 11.858	14.759 11.644	15.576 11.205	17.087 10.582	19.344 9.938	25.259 9.008	40.701 8.122
	<b>11 feet</b>	11.959 10.198	12.185 10.045	12.717 9.727	13.668 9.270	15.019 8.788	18.210 8.076	24.723 7.379
	<b>9 feet</b>	9.597 8.482	9.735 8.381	10.053 8.170	10.606 7.861	11.357 7.528	12.986 7.024	15.794 6.515
	<b>7 feet</b>	7.325 6.708	7.398 6.650	7.565 6.527	7.847 6.343	8.216 6.142	8.960 5.828	10.091 5.500
	<b>5 feet</b>	5.138 4.871	5.169 4.845	5.237 4.789	5.350 4.704	5.491 4.609	5.761 4.456	6.134 4.288
	<b>4 feet</b>	4.119	4.136	4.173	4.234	4.310	4.451	4.637
	<b>1/2 inch</b>	3.968	3.953	3.921	3.872	3.816	3.724	3.621

1	Aperture	T 3.2	T 4	T 5.6	T 8	T11	T16	T22
2	Hyperfocal distance	112.13	92.788	67.468	47.333	35.121	24.448	18.067
3	Object distance	<u>Far</u>	<u>Far</u>	<u>Far</u>	<u>Far</u>	<u>Far</u>	<u>Far</u>	<u>Far</u>
		<u>Near</u>	<u>Near</u>	<u>Near</u>	<u>Near</u>	<u>Near</u>	<u>Near</u>	<u>Near</u>
	<b>50 feet</b>	88.399 35.072	105.75 33.016	186.54 29.282	∞ 24.892	∞ 21.190	∞ 16.928	∞ 13.719
	<b>30 feet</b>	40.131 24.049	43.251 23.094	52.205 21.257	77.993 18.910	192.37 16.754	∞ 14.043	∞ 11.818
	<b>20 feet</b>	23.855 17.264	24.879 16.786	27.482 15.830	32.992 14.539	43.485 13.276	99.813 11.573	∞ 10.070
	<b>16 feet</b>	18.293 14.248	18.870 13.930	20.282 13.285	23.034 12.389	27.526 11.486	42.087 10.223	122.61 9.062
	<b>13 feet</b>	14.416 11.858	14.759 11.644	15.576 11.205	17.087 10.582	19.344 9.938	25.259 9.008	40.701 8.122
	<b>11 feet</b>	11.959 10.198	12.185 10.045	12.717 9.727	13.668 9.270	15.019 8.788	18.210 8.076	24.723 7.379
	<b>9 feet</b>	9.597 8.482	9.735 8.381	10.053 8.170	10.606 7.861	11.357 7.528	12.986 7.024	15.794 6.515
	<b>7 feet</b>	7.325 6.708	7.398 6.650	7.565 6.527	7.847 6.343	8.216 6.142	8.960 5.828	10.091 5.500
	<b>5 feet</b>	5.138 4.871	5.169 4.845	5.237 4.789	5.350 4.704	5.491 4.609	5.761 4.456	6.134 4.288
	<b>4 feet</b>	4.095	4.106	4.132	4.173	4.223	4.314	4.430
	<b>1/2 inch</b>	3.990	3.980	3.957	3.921	3.881	3.813	3.736



## ZOOM OPTIMO 28-340

- 1 - Aperture
- 2 - Hyperfocal distance
- 3 - Object distance far/near
- 4 - Confusion circle : 0.025 mm

Distances in feet

F = 75 mm

1	Aperture	T 3.2	T 4	T 5.6	T 8	T11	T16	T22
2	Hyperfocal distance	250.78	207.27	150.31	105.01	77.530	53.517	39.160
3	Distance objet	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near
	<b>50 feet</b>	61.876 42.007	65.159 40.642	73.759 37.950	93.287 34.375	136.32 30.947	707.86 26.427	∞ 22.530
	<b>30 feet</b>	33.767 27.012	34.691 26.459	36.910 25.326	41.077 23.730	47.47 22.093	65.219 19.754	119.77 17.554
	<b>20 feet</b>	21.538 18.677	21.895 18.421	22.723 17.886	24.173 17.106	26.162 16.271	30.563 15.013	38.433 13.754
	<b>16 feet</b>	16.938 15.167	17.152 15.003	17.640 14.656	18.473 14.143	19.576 13.584	21.858 12.721	25.47 11.831
	<b>13 feet</b>	13.590 12.463	13.722 12.356	14.021 12.129	14.523 11.787	15.171 11.410	16.454 10.815	18.343 10.186
	<b>11 feet</b>	11.404 10.626	11.494 10.551	11.695 10.390	12.030 10.148	12.455 9.876	13.274 9.442	14.430 8.975
	<b>9 feet</b>	9.254 8.761	9.310 8.712	9.435 8.608	9.640 8.449	9.897 8.269	10.380 7.978	11.034 7.658
	<b>7 feet</b>	7.140 6.866	7.171 6.839	7.238 6.780	7.348 6.689	7.484 6.584	7.733 6.413	8.059 6.221
	<b>5 feet</b>	5.060 4.942	5.073 4.930	5.102 4.903	5.148 4.863	5.204 4.816	5.304 4.737	5.432 4.647
	<b>4 feet</b>	4.075	4.083	4.099	4.124	4.155	4.210	4.279
	<b>1/2 inch</b>	4.009	4.002	3.987	3.964	3.936	3.891	3.838

F = 125 mm

1	Aperture	T 3.2	T 4	T 5.6	T 8	T11	T16	T22
2	Hyperfocal distance	640.17	528.88	383.10	267.15	196.81	135.34	98.588
3	Distance objet	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near
	<b>50 feet</b>	54.043 46.531	54.982 45.862	57.162 44.462	60.987 42.422	66.251 40.242	77.955 36.965	99.099 33.690
	<b>30 feet</b>	31.364 28.754	31.668 28.505	32.356 27.975	33.509 27.178	34.99 26.294	37.898 24.897	42.131 23.411
	<b>20 feet</b>	20.573 19.460	20.698 19.350	20.978 19.114	21.437 18.753	22.009 18.344	23.079 17.679	24.519 16.946
	<b>16 feet</b>	16.353 15.663	16.430 15.594	16.600 15.445	16.878 15.215	17.219 14.953	17.847 14.521	18.67 14.037
	<b>13 feet</b>	13.224 12.784	13.272 12.740	13.379 12.644	13.552 12.495	13.763 12.324	14.147 12.039	14.639 11.716
	<b>11 feet</b>	11.154 10.851	11.187 10.820	11.261 10.753	11.378 10.649	11.522 10.528	11.780 10.327	12.107 10.097
	<b>9 feet</b>	9.098 8.905	9.118 8.885	9.165 8.842	9.238 8.775	9.328 8.698	9.487 8.567	9.687 8.415
	<b>7 feet</b>	7.054 6.947	7.065 6.936	7.091 6.912	7.131 6.874	7.180 6.830	7.266 6.756	7.373 6.669
	<b>5 feet</b>	5.023 4.977	5.028 4.972	5.039 4.962	5.056 4.945	5.077 4.926	5.113 4.893	5.158 4.854
	<b>4 feet</b>	4.055	4.057	4.064	4.073	4.085	4.105	4.130
	<b>1/2 inch</b>	4.029	4.026	4.020	4.011	4.000	3.981	3.959

## ZOOM OPTIMO 28-340

- 1 - Aperture
- 2 - Hyperfocal distance
- 3 - Object distance far/near
- 4 - Confusion circle : 0.025 mm

Distances in feet

F = 200 mm

1	Aperture	T 3.2	T 4	T 5.6	T 8	T11	T16	T22
2	Hyperfocal distance	1658.2	1467.4	1062.6	740.52	545.12	374.35	272.25
3	Distance objet	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near
	<b>50 feet</b>	51.484 48.601	51.684 48.425	52.358 47.851	53.460 46.973	54.827 45.975	57.376 44.347	60.777 42.543
	<b>30 feet</b>	30.511 29.506	30.579 29.443	30.806 29.237	31.172 28.917	31.62 28.547	32.422 27.930	33.447 27.226
	<b>20 feet</b>	20.217 19.788	20.246 19.761	20.341 19.671	20.493 19.532	20.677 19.369	21.005 19.094	21.413 18.775
	<b>16 feet</b>	16.134 15.868	16.152 15.851	16.211 15.795	16.305 15.708	16.417 15.606	16.617 15.432	16.86 15.229
	<b>13 feet</b>	13.085 12.916	13.097 12.905	13.134 12.869	13.193 12.813	13.264 12.748	13.389 12.636	13.543 12.504
	<b>11 feet</b>	11.059 10.942	11.067 10.934	11.092 10.910	11.133 10.871	11.182 10.825	11.267 10.747	11.372 10.655
	<b>9 feet</b>	9.037 8.963	9.042 8.958	9.058 8.942	9.084 8.918	9.115 8.888	9.169 8.838	9.235 8.779
	<b>7 feet</b>	7.021 6.979	7.023 6.977	7.032 6.968	7.047 6.954	7.064 6.938	7.093 6.910	7.129 6.877
	<b>5 feet</b>	5.009 4.991	5.010 4.990	5.014 4.986	5.020 4.980	5.027 4.973	5.040 4.961	5.056 4.946
	<b>4 feet</b>	4.047	4.047	4.049	4.053	4.057	4.064	4.073
	<b>1/2 inch</b>	4.037	4.036	4.034	4.030	4.026	4.019	4.011

F = 250 mm

1	Aperture	T 3.2	T 4	T 5.6	T 8	T11	T16	T22
2	Hyperfocal distance	2473.5	2293.3	1660.4	1156.8	851.39	584.51	424.96
3	Distance objet	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near
	<b>50 feet</b>	50.985 49.054	51.064 48.981	51.483 48.603	52.159 48.019	52.984 47.346	54.479 46.226	56.393 44.952
	<b>30 feet</b>	30.341 29.667	30.368 29.642	30.511 29.507	30.740 29.298	31.02 29.054	31.505 28.641	32.116 28.162
	<b>20 feet</b>	20.145 19.857	20.156 19.846	20.217 19.788	20.313 19.698	20.428 19.591	20.631 19.410	20.881 19.198
	<b>16 feet</b>	16.090 15.911	16.097 15.904	16.134 15.868	16.193 15.812	16.264 15.745	16.389 15.632	16.54 15.498
	<b>13 feet</b>	13.057 12.944	13.062 12.939	13.085 12.916	13.123 12.880	13.168 12.837	13.246 12.764	13.342 12.678
	<b>11 feet</b>	11.039 10.961	11.043 10.958	11.059 10.942	11.085 10.917	11.116 10.887	11.170 10.837	11.235 10.776
	<b>9 feet</b>	9.025 8.975	9.027 8.973	9.037 8.963	9.054 8.947	9.073 8.928	9.107 8.896	9.149 8.857
	<b>7 feet</b>	7.014 6.986	7.015 6.985	7.021 6.979	7.030 6.971	7.041 6.960	7.059 6.942	7.082 6.920
	<b>5 feet</b>	5.006 4.994	5.006 4.994	5.009 4.991	5.013 4.987	5.018 4.983	5.026 4.975	5.035 4.965
	<b>4 feet</b>	4.045	4.045	4.047	4.049	4.051	4.056	4.061
	<b>1/2 inch</b>	4.038	4.038	4.037	4.034	4.032	4.027	4.022

## ZOOM OPTIMO 28-340

- 1 - Aperture
- 2 - Hyperfocal distance
- 3 - Object distance far/near
- 4 - Confusion circle : 0.025 mm

Distances in feet

F = 340 mm

1	Aperture	T 3.2	T 4	T 5.6	T 8	T11	T16	T22
2	Hyperfocal distance	5623.7	3965.1	2861.4	1992.1	1465.6	1005.8	731.07
3	Distance objet	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near	<u>Far</u> Near
	<b>50 feet</b>	50.428 49.579	50.610 49.405	50.850 49.180	51.231 48.830	51.690 48.423	52.506 47.735	53.522 46.936
	<b>30 feet</b>	30.149 29.853	30.212 29.792	30.294 29.712	30.425 29.588	30.58 29.443	30.856 29.195	31.193 28.903
	<b>20 feet</b>	20.063 19.937	20.090 19.911	20.125 19.877	20.180 19.823	20.246 19.761	20.362 19.653	20.502 19.526
	<b>16 feet</b>	16.039 15.961	16.056 15.945	16.078 15.923	16.112 15.890	16.152 15.851	16.223 15.784	16.31 15.704
	<b>13 feet</b>	13.025 12.975	13.036 12.965	13.049 12.951	13.071 12.930	13.097 12.905	13.142 12.862	13.196 12.811
	<b>11 feet</b>	11.017 10.983	11.025 10.976	11.034 10.966	11.049 10.952	11.067 10.934	11.098 10.904	11.135 10.869
	<b>9 feet</b>	9.011 8.989	9.016 8.985	9.022 8.979	9.031 8.969	9.042 8.958	9.062 8.939	9.086 8.917
	<b>7 feet</b>	7.006 6.994	7.009 6.991	7.012 6.988	7.017 6.983	7.023 6.977	7.034 6.966	7.047 6.954
	<b>5 feet</b>	5.003 4.997	5.004 4.996	5.005 4.995	5.007 4.993	5.010 4.990	5.015 4.985	5.020 4.980
	<b>4 feet</b>	4.044	4.044	4.045	4.046	4.047	4.050	4.053
	<b>1/2 inch</b>	4.040	4.039	4.039	4.037	4.036	4.033	4.030

## ZOOM OPTIMO 28-340

- 1 - Ouverture
- 2 - Distance hyperfocale
- 3 - Distance objet : loin/près
- 4 - Cercle de confusion : 0.025 mm

Distances en mètres

F = 28 mm

1	Ouverture	T 3.2	T 4	T 5.6	T 8	T 11	T 16	T 22
2	Distance hyperfocale	11.710	9.737	7.153	5.098	3.852	2.762	2.111
3	Distance objet	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres
	<b>30 m</b>	∞ 8.564	∞ 7.481	∞ 5.885	∞ 4.444	∞ 3.483	∞ 2.582	∞ 2.013
	<b>10 m</b>	66.622 5.569	∞ 5.110	∞ 4.342	∞ 3.534	∞ 2.921	∞ 2.281	∞ 1.841
	<b>8 m</b>	24.053 4.923	43.005 4.566	∞ 3.952	∞ 3.281	∞ 2.754	∞ 2.186	∞ 1.783
	<b>5 m</b>	8.252 3.650	9.626 3.461	15.355 3.113	694.98 2.701	∞ 2.349	∞ 1.940	∞ 1.629
	<b>4 m</b>	5.741 3.113	6.347 2.979	8.313 2.727	16.912 2.415	∞ 2.139	∞ 1.804	∞ 1.540
	<b>3 m</b>	3.812 2.499	4.052 2.417	4.717 2.258	6.455 2.052	11.955 1.860	∞ 1.615	∞ 1.410
	<b>2.5 m</b>	3.005 2.158	3.144 2.100	3.507 1.985	4.325 1.831	6.099 1.684	26.445 1.489	∞ 1.320
	<b>2.0 m</b>	2.282 1.791	2.354 1.754	2.534 1.679	2.897 1.576	3.526 1.473	5.930 1.332	70.097 1.204
	<b>1.5 m</b>	1.630 1.395	1.662 1.375	1.736 1.334	1.874 1.277	2.079 1.217	2.609 1.130	3.955 1.048
	<b>1.23 m</b>	1.304 1.167	1.322 1.155	1.362 1.130	1.433 1.093	1.533 1.054	1.760 0.996	2.189 0.939

F = 35 mm

1	Ouverture	T 3.2	T 4	T 5.6	T 8	T 11	T 16	T 22
2	Distance hyperfocale	16.945	14.058	10.277	7.270	5.446	3.852	2.899
3	Distance objet	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres
	<b>30 m</b>	∞ 10.991	∞ 9.725	∞ 7.788	∞ 5.961	∞ 4.699	∞ 3.482	∞ 2.698
	<b>10 m</b>	23.484 6.453	33.179 6.014	406.21 5.244	∞ 4.381	∞ 3.686	∞ 2.921	∞ 2.368
	<b>8 m</b>	14.570 5.587	17.723 5.261	34.175 4.672	∞ 3.985	∞ 3.410	∞ 2.754	∞ 2.263
	<b>5 m</b>	6.815 3.983	7.397 3.823	9.128 3.518	14.702 3.132	58.629 2.783	∞ 2.349	∞ 1.998
	<b>4 m</b>	5.032 3.343	5.329 3.233	6.135 3.020	8.125 2.741	13.491 2.478	∞ 2.139	∞ 1.853
	<b>3 m</b>	3.504 2.636	3.637 2.571	3.970 2.442	4.660 2.267	5.920 2.095	11.688 1.860	∞ 1.651
	<b>2.5 m</b>	2.820 2.254	2.901 2.209	3.097 2.118	3.477 1.991	4.091 1.863	6.033 1.684	15.564 1.518
	<b>2.0 m</b>	2.182 1.851	2.226 1.823	2.330 1.765	2.520 1.683	2.799 1.597	3.505 1.473	5.189 1.353
	<b>1.5 m</b>	1.586 1.426	1.605 1.411	1.651 1.381	1.731 1.337	1.838 1.289	2.073 1.217	2.477 1.144
	<b>1.23 m</b>	1.279 1.186	1.290 1.177	1.316 1.159	1.359 1.131	1.415 1.101	1.530 1.054	1.707 1.006

## ZOOM OPTIMO 28-340

- 1 - Ouverture
- 2 - Distance hyperfocale
- 3 - Distance objet : loin/près
- 4 - Cercle de confusion : 0.025 mm

Distances en mètres

F = 50 mm

1	Ouverture	T 3.2	T 4	T 5.6	T 8	T 11	T 16	T 22
2	Distance hyperfocale	34.176	28.282	20.564	14.427	10.705	7.452	5.507
3	Distance objet	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres
	<b>30 m</b>	240.37 16.151	∞ 14.734	∞ 12.371	∞ 9.896	∞ 8.025	∞ 6.080	∞ 4.744
	<b>10 m</b>	13.850 7.859	15.091 7.523	18.810 6.883	31.020 6.076	141.83 5.346	∞ 4.442	∞ 3.712
	<b>8 m</b>	10.234 6.590	10.884 6.356	12.655 5.901	17.100 5.308	29.618 4.751	∞ 4.034	∞ 3.432
	<b>5 m</b>	5.740 4.438	5.928 4.337	6.388 4.131	7.292 3.846	8.787 3.560	13.812 3.161	47.616 2.797
	<b>4 m</b>	4.441 3.645	4.548 3.579	4.803 3.442	5.276 3.249	5.985 3.050	7.856 2.762	12.835 2.489
	<b>3 m</b>	3.225 2.808	3.277 2.771	3.399 2.693	3.614 2.581	3.910 2.461	4.576 2.281	5.799 2.102
	<b>2.5 m</b>	2.646 2.372	2.679 2.347	2.755 2.294	2.887 2.216	3.063 2.131	3.432 2.001	4.036 1.869
	<b>2.0 m</b>	2.084 1.923	2.103 1.908	2.146 1.876	2.219 1.827	2.312 1.774	2.499 1.690	2.776 1.601
	<b>1.5 m</b>	1.540 1.462	1.549 1.455	1.569 1.438	1.602 1.413	1.643 1.385	1.722 1.340	1.830 1.291
	<b>1.23 m</b>	1.253 1.208	1.259 1.203	1.270 1.193	1.288 1.178	1.311 1.161	1.354 1.133	1.411 1.102

F = 60 mm

1	Ouverture	T 3.2	T 4	T 5.6	T 8	T 11	T 16	T 22
2	Distance hyperfocale	49.051	40.562	29.449	20.612	15.251	10.567	7.767
3	Distance objet	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres
	<b>30 m</b>	76.091 18.781	113.06 17.417	∞ 15.037	∞ 12.387	∞ 10.268	∞ 7.950	∞ 6.283
	<b>10 m</b>	12.38 8.405	13.04 8.133	14.781 7.598	18.756 6.888	27.661 6.208	168.75 5.314	∞ 4.545
	<b>8 m</b>	9.424 6.962	9.795 6.778	10.725 6.408	12.631 5.904	16.045 5.406	30.618 4.726	∞ 4.117
	<b>5 m</b>	5.490 4.595	5.607 4.518	5.883 4.360	6.382 4.133	7.104 3.895	8.868 3.547	12.759 3.209
	<b>4 m</b>	4.295 3.746	4.364 3.697	4.523 3.594	4.800 3.443	5.181 3.283	6.021 3.040	7.517 2.797
	<b>3 m</b>	3.152 2.863	3.187 2.836	3.265 2.779	3.398 2.694	3.572 2.600	3.925 2.455	4.466 2.303
	<b>2.5 m</b>	2.599 2.409	2.621 2.391	2.671 2.352	2.755 2.294	2.861 2.229	3.071 2.127	3.374 2.018
	<b>2.0 m</b>	2.058 1.946	2.070 1.935	2.099 1.912	2.146 1.876	2.205 1.836	2.317 1.771	2.470 1.700
	<b>1.5 m</b>	1.528 1.474	1.534 1.468	1.547 1.456	1.569 1.438	1.596 1.418	1.645 1.384	1.710 1.346
	<b>1.23 m</b>	1.246 1.214	1.250 1.211	1.257 1.204	1.270 1.194	1.285 1.181	1.313 1.161	1.348 1.137

## ZOOM OPTIMO 28-340

- 1 - Ouverture
- 2 - Distance hyperfocale
- 3 - Distance objet : loin/près
- 4 - Cercle de confusion : 0.025 mm

Distances en mètres

F = 75 mm

1	Ouverture	T 3.2	T 4	T 5.6	T 8	T 11	T 16	T 22
2	Distance hyperfocale	76.439	63.177	45.814	32.006	23.631	16.312	11.936
3	Distance objet	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres
	<b>30 m</b>	48.914 21.687	56.467 20.495	85.466 18.297	460.92 15.661	∞ 13.392	∞ 10.727	∞ 8.682
	<b>10 m</b>	11.400 8.914	11.749 8.716	12.597 8.311	14.224 7.746	16.812 7.173	24.670 6.365	57.272 5.616
	<b>8 m</b>	8.854 7.301	9.059 7.170	9.546 6.899	10.433 6.512	11.734 6.109	15.009 5.522	22.738 4.959
	<b>5 m</b>	5.302 4.732	5.371 4.680	5.529 4.569	5.799 4.405	6.158 4.226	6.905 3.952	8.101 3.669
	<b>4 m</b>	4.184 3.833	4.225 3.800	4.318 3.729	4.475 3.623	4.677 3.506	5.078 3.321	5.670 3.126
	<b>3 m</b>	3.095 2.911	3.116 2.893	3.164 2.854	3.242 2.796	3.339 2.730	3.526 2.623	3.782 2.507
	<b>2.5 m</b>	2.562 2.441	2.576 2.429	2.606 2.403	2.656 2.364	2.718 2.319	2.833 2.245	2.988 2.164
	<b>2.0 m</b>	2.036 1.965	2.044 1.958	2.062 1.942	2.090 1.918	2.125 1.891	2.189 1.846	2.273 1.795
	<b>1.5 m</b>	1.518 1.483	1.521 1.479	1.530 1.472	1.543 1.460	1.560 1.446	1.589 1.423	1.626 1.397
	<b>1.23 m</b>	1.240 1.220	1.242 1.218	1.247 1.213	1.255 1.206	1.264 1.198	1.281 1.184	1.302 1.168

F = 120 mm

1	Ouverture	T 3.2	T 4	T 5.6	T 8	T 11	T 16	T 22
2	Distance hyperfocale	195.12	161.20	116.77	81.427	59.989	41.252	30.050
3	Distance objet	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres
	<b>30 m</b>	35.323 26.083	36.700 25.386	40.130 23.982	47.092 22.061	59.310 20.155	108.11 17.540	17155 15.189
	<b>10 m</b>	10.503 9.545	10.616 9.454	10.872 9.262	11.303 8.974	11.862 8.657	12.978 8.159	14.642 7.634
	<b>8 m</b>	8.313 7.711	8.382 7.653	8.538 7.529	8.797 7.341	9.125 7.131	9.759 6.795	10.653 6.434
	<b>5 m</b>	5.114 4.892	5.138 4.869	5.193 4.822	5.283 4.748	5.393 4.664	5.596 4.526	5.862 4.371
	<b>4 m</b>	4.070 3.933	4.085 3.919	4.118 3.889	4.172 3.843	4.238 3.790	4.357 3.701	4.511 3.601
	<b>3 m</b>	3.036 2.964	3.044 2.957	3.062 2.941	3.089 2.916	3.123 2.887	3.183 2.839	3.259 2.783
	<b>2.5 m</b>	2.524 2.477	2.529 2.472	2.540 2.461	2.558 2.445	2.580 2.425	2.619 2.393	2.668 2.355
	<b>2.0 m</b>	2.014 1.986	2.017 1.983	2.024 1.977	2.034 1.967	2.047 1.956	2.069 1.936	2.097 1.913
	<b>1.5 m</b>	1.507 1.493	1.508 1.492	1.511 1.489	1.516 1.484	1.523 1.478	1.533 1.469	1.546 1.457
	<b>1.23 m</b>	1.234 1.226	1.235 1.225	1.237 1.223	1.240 1.221	1.243 1.217	1.249 1.212	1.257 1.205

## ZOOM OPTIMO 28-340

- 1 - Ouverture
- 2 - Distance hyperfocale
- 3 - Distance objet : loin/près
- 4 - Cercle de confusion : 0.025 mm

Distances en mètres

F = 200 mm

1	Ouverture	T 3.2	T 4	T 5.6	T 8	T11	T16	T22
2	Distance hyperfocale	505.42	447.26	323.89	225.71	166.15	114.10	82.982
3	Distance objet	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres
	<b>30 m</b>	31.850 28.356	32.108 28.156	32.994 27.511	34.497 26.553	36.469 25.503	40.485 23.870	46.674 22.171
	<b>10 m</b>	10.188 9.819	10.213 9.796	10.297 9.721	10.432 9.604	10.597 9.469	10.896 9.246	11.280 8.991
	<b>8 m</b>	8.118 7.886	8.133 7.871	8.185 7.823	8.269 7.749	8.370 7.663	8.553 7.518	8.783 7.352
	<b>5 m</b>	5.043 4.958	5.049 4.952	5.068 4.934	5.098 4.906	5.134 4.873	5.199 4.818	5.278 4.752
	<b>4 m</b>	4.027 3.974	4.030 3.970	4.042 3.959	4.060 3.942	4.082 3.921	4.121 3.887	4.169 3.846
	<b>3 m</b>	3.014 2.986	3.016 2.984	3.022 2.979	3.032 2.969	3.043 2.958	3.063 2.940	3.088 2.918
	<b>2.5 m</b>	2.509 2.491	2.510 2.490	2.514 2.486	2.521 2.480	2.528 2.473	2.541 2.460	2.558 2.446
	<b>2.0 m</b>	2.005 1.995	2.006 1.994	2.008 1.992	2.012 1.988	2.017 1.984	2.024 1.976	2.034 1.968
	<b>1.5 m</b>	1.503 1.497	1.503 1.497	1.504 1.496	1.506 1.494	1.508 1.492	1.512 1.489	1.516 1.484
	<b>1.23 m</b>	1.232 1.228	1.232 1.228	1.232 1.228	1.233 1.227	1.235 1.225	1.237 1.223	1.239 1.220

F = 250 mm

1	Ouverture	T 3.2	T 4	T 5.6	T 8	T11	T16	T22
2	Distance hyperfocale	753.93	699.01	506.09	352.60	259.50	178.16	129.53
3	Distance objet	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres
	<b>30 m</b>	31.215 28.878	31.315 28.793	31.848 28.358	32.729 27.698	33.839 26.956	35.955 25.763	38.880 24.466
	<b>10 m</b>	10.125 9.878	10.135 9.869	10.188 9.819	10.272 9.743	10.374 9.654	10.555 9.503	10.782 9.329
	<b>8 m</b>	8.078 7.923	8.085 7.917	8.118 7.886	8.170 7.837	8.233 7.781	8.345 7.685	8.483 7.573
	<b>5 m</b>	5.029 4.972	5.031 4.969	5.043 4.958	5.062 4.939	5.085 4.918	5.125 4.882	5.174 4.839
	<b>4 m</b>	4.018 3.982	4.019 3.981	4.027 3.974	4.038 3.963	4.052 3.949	4.077 3.927	4.106 3.900
	<b>3 m</b>	3.009 2.991	3.010 2.990	3.014 2.986	3.020 2.980	3.027 2.973	3.040 2.961	3.056 2.947
	<b>2.5 m</b>	2.506 2.494	2.507 2.493	2.509 2.491	2.513 2.487	2.518 2.482	2.526 2.474	2.536 2.465
	<b>2.0 m</b>	2.004 1.996	2.004 1.996	2.005 1.995	2.008 1.992	2.011 1.990	2.015 1.985	2.021 1.979
	<b>1.5 m</b>	1.502 1.498	1.502 1.498	1.503 1.497	1.504 1.496	1.505 1.495	1.507 1.493	1.510 1.490
	<b>1.23 m</b>	1.231 1.229	1.231 1.229	1.232 1.228	1.232 1.228	1.233 1.227	1.234 1.226	1.236 1.224

## ZOOM OPTIMO 28-340

- 1 - Ouverture
- 2 - Distance hyperfocale
- 3 - Distance objet : loin/près
- 4 - Cercle de confusion : 0.025 mm

Distances en mètres

F = 340 mm

1	Ouverture	T 3.2	T 4	T 5.6	T 8	T11	T16	T22
2	Distance hyperfocale	1714.1	1208.6	872.15	607.19	446.71	306.57	222.83
3	Distance objet	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres	<u>Loin</u> Pres
	<b>30 m</b>	30.522 29.496	30.747 29.290	31.045 29.025	31.526 28.619	32.115 28.153	33.191 27.383	34.585 26.514
	<b>10 m</b>	10.055 9.946	10.078 9.924	10.108 9.894	10.156 9.849	10.214 9.796	10.315 9.705	10.440 9.599
	<b>8 m</b>	8.034 7.966	8.049 7.952	8.068 7.933	8.098 7.905	8.134 7.871	8.197 7.814	8.274 7.746
	<b>5 m</b>	5.013 4.987	5.018 4.982	5.025 4.975	5.036 4.965	5.049 4.952	5.072 4.931	5.100 4.905
	<b>4 m</b>	4.008 3.992	4.011 3.989	4.015 3.985	4.022 3.978	4.030 3.970	4.044 3.957	4.061 3.941
	<b>3 m</b>	3.004 2.996	3.006 2.994	3.008 2.992	3.012 2.988	3.016 2.984	3.023 2.977	3.032 2.969
	<b>2.5 m</b>	2.503 2.497	2.504 2.496	2.505 2.495	2.508 2.492	2.510 2.490	2.515 2.485	2.521 2.479
	<b>2.0 m</b>	2.002 1.998	2.002 1.998	2.003 1.997	2.004 1.996	2.006 1.994	2.009 1.991	2.012 1.988
	<b>1.5 m</b>	1.501 1.499	1.501 1.499	1.502 1.498	1.502 1.498	1.503 1.497	1.504 1.496	1.506 1.494
	<b>1.23 m</b>	1.230 1.230	1.231 1.229	1.231 1.229	1.231 1.229	1.232 1.228	1.233 1.227	1.233 1.227