



Carl Zeiss Jena GmbH

Industrial Optics



Optical Systems and
Components

Telecentric VISIONMES® Lens Systems
for industrial image processing units

Lens Systems and Software
for Interferometer units

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Components for Interferometry



Quality Test Spheres F-APLANAR 10 - 1/2" / 1" / 4"
and
Fringe evaluation software for static and dynamic
measurements

Product survey

Interferometer lenses F-APLANAR

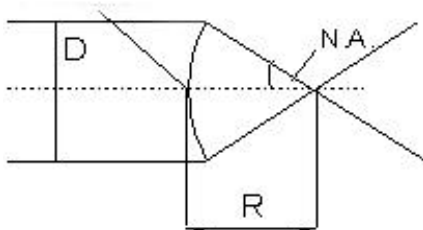
Types of quality test spheres

- F-Aplanar 10-1/2" with internal beam expansion
- F-Aplanar 10-1" with internal beam expansion
- F-Aplanar 10-4"

Inlet diameter	R/D reference radius / diameter of the reference surface)	Quality of the reference surface
1/2"	plan; 1,25; 1,0; 0,67; 0,59	$\lambda/10$
1"	plan; 3,33; 1,79; 1,25; 0,91; 0,75; 0,67	$\lambda/10$
4"	0,67; 1,00; 1,50; 3,40; 7,60	$\lambda/20$

F-APLANAR 10 - 1/2"

reference surface

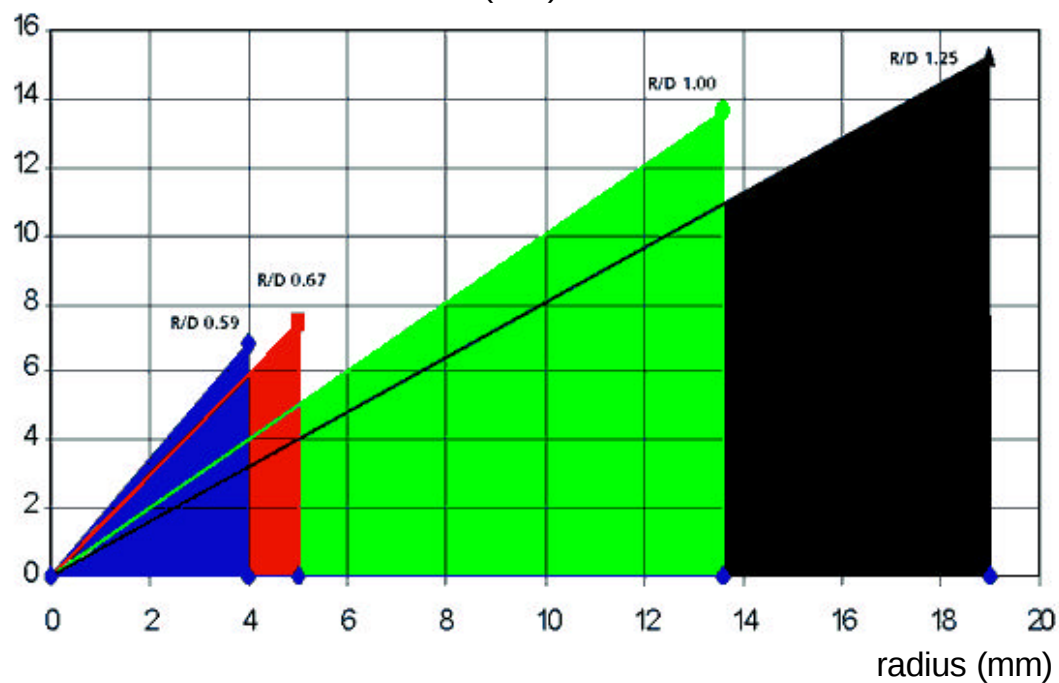


N. A. - numerical aperture

R - reference radius

D - diameter of the reference surface

diameter for convexe surfaces (mm)



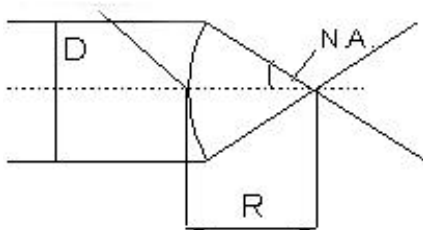
F-APLANAR 10 - 1/2"

designation	num. aperture N.A	R/D	diameter of the reference surface (D)	reference radius (R)	max. total test angle
∞ / 12.5	0	-	12.5 mm	∞	0°
0.4 / 19.0	0.40	1.25	15.2 mm	19.0 mm	47°
0.5 / 13.6	0.50	1.00	13.6 mm	13.6 mm	60°
0.75 / 5.0	0.75	0.67	7.46 mm	5.0 mm	97°
0.85 / 4.0	0.85	0.59	6.78 mm	4.0 mm	116°

- inlet diameter 1/2"
- quality of the reference surface $\lambda/10$
- no principal restrictions for test of concave surfaces

F-APLANAR 10 - 1"

reference surface

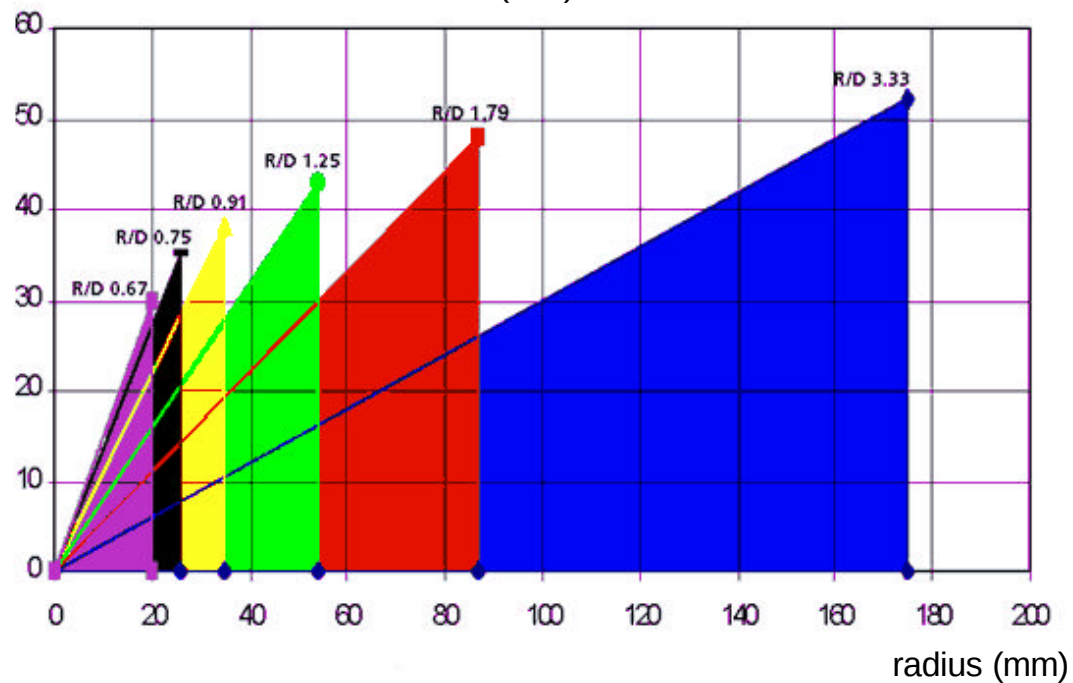


N. A. - numerical aperture

R - reference radius

D - diameter of the reference surface

diameter for convexe surfaces (mm)



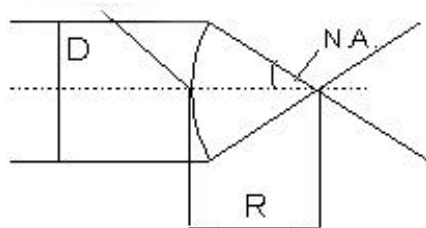
F-APLANAR 10 - 1"

designation	num. aperture N.A	R/D	diameter of the reference surface (D)	reference radius (R)	max. total test angle
∞ / 25	0	-	25 mm	∞	0°
0.15 / 175	0.15	3.33	52 mm	175 mm	17°
0.28 / 87	0.28	1.79	49 mm	87 mm	32°
0.40 / 54	0.40	1.25	43 mm	54 mm	47°
0.55 / 35	0.55	0.91	39 mm	35 mm	67°
0.67 / 26	0.67	0.75	35 mm	26 mm	84°
0.75 / 20	0.75	0.67	30 mm	20 mm	97°

- inlet diameter 1"
- quality of the reference surface $\lambda/10$
- no principal restrictions for test of concave surfaces

F-APLANAR 10 - 4"

reference surface

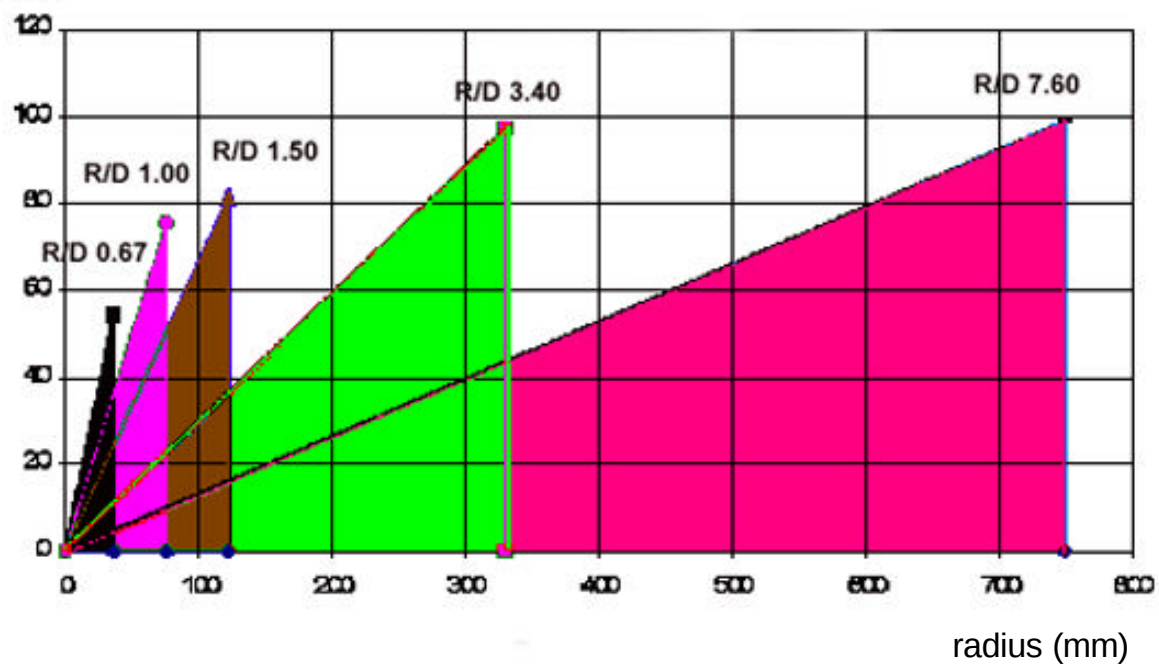


N. A. - numerical aperture

R - reference radius

D - diameter of the reference surface

diameter for convexe surfaces (mm)



F-APLANAR 10 - 4"

designation	num. aperture N.A	R/D	diameter of the reference surface (D)	reference radius (R)	max. total test angle
10 4" – 0.67	0.75	0.67	54.0 mm	36.2 mm	97°
10 4" – 1.00	0.50	1.00	75.5 mm	75.5 mm	60°
10 4" – 1.50	0.33	1.50	81.3 mm	122.0 mm	38°
10 4" – 3.40	0.15	3.40	97.1 mm	330.0 mm	17°
10 4" – 7.60	0.07	7.60	98.6 mm	749.0 mm	8°

- inlet diameter 4"
- quality of the reference surface $\lambda/20$
- no principal restrictions for test of concave surfaces