Instructions pour réducteur CDK 0.66x
Configurations caméras/extensions/adaptateurs

200166 - Reducer for CDK17 and CDK20

125166 - Reducer for CDK12.5

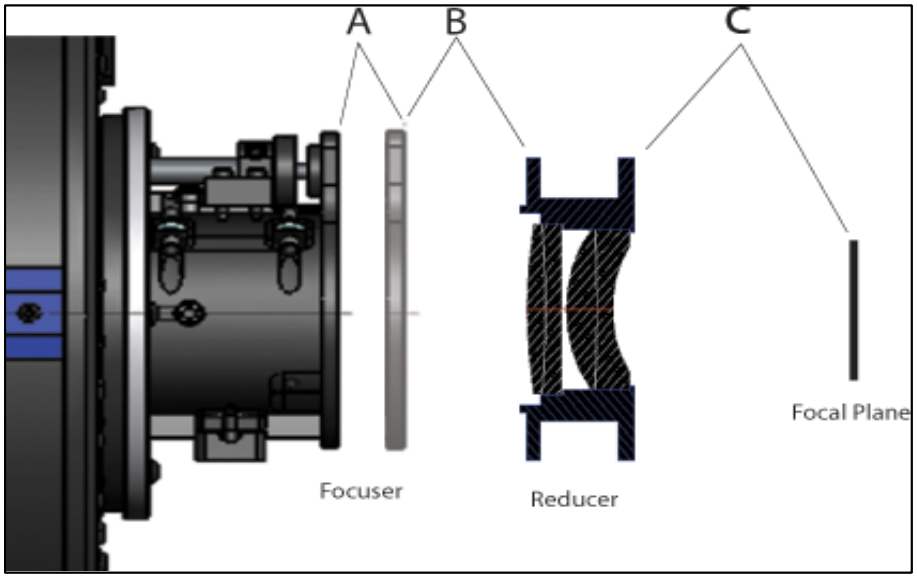
Introduction

The PlaneWave CDK .66x Reducer is a high performance reducer designed to work with a flat field telescope like the CDK. Like high performance telescopes, this reducer is sensitive to spacing. The reducer has very limited back focus and uses quite a bit of the telescopes back focus. But for the right camera setup, this is a wonderful accessory that reduces the focal ratio while maintaining the CDK's performance.

There are two different models of reducers that PlaneWave sells. Optically they are identical, but mechanically they are different in order to mount with the different telescopes. The 125166 is the model for the CDK12.5 and the 200166 is the model for the CDK17 and 20.

The backfocus between the reducer and the focal plane is fairly critical in order to get the performance out of the system. The optimal distance from the reducer to the focal plane is 1.85". But you can very this distance some and still get very good performance. Included in the next couple of pages is a chart showing the performance as you very the back focal distance and how that affect the focus position.

General Spacing and Performance Information



A is the focuser position, 0 is fully racked in and 1.3" is fully racked out. B is the spacing between the reducer and the focuser. C is the distance from the reducer to the focal plane.

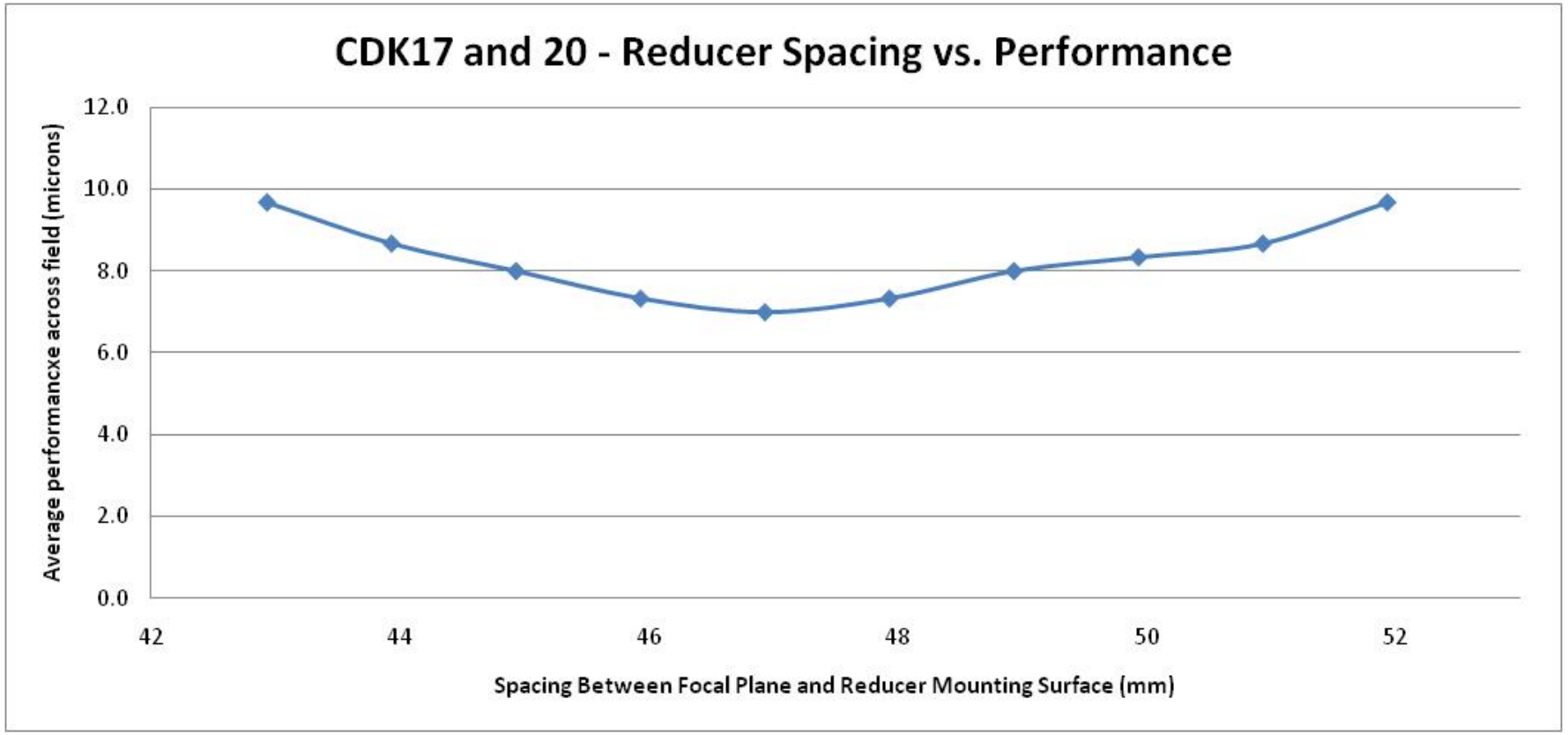
Chart for CDK12.5 using the 125166 Reducer

A	B	C	Performance**	F-ratio
1.085	1	1.69	9.3	5.38
0.997	1	1.73	8.5	5.36
0.908	1	1.77	8.1	5.34
0.818	1	1.81	7.9	5.32
0.728	1	1.85	7.9	5.30
0.637	1	1.89	8.4	5.28
0.545	1	1.93	9.0	5.26
0.452	1	1.97	9.8	5.25
0.359	1	2.01	10.7	5.23
0.266	1	2.04	11.7	5.21
0.724	0.5	2.1	13.3	5.18
0.572	0.5	2.2	16.3	5.13
0.418	0.5	2.3	19.4	5.09
0.385	0.5	2.35	21.0	5.06

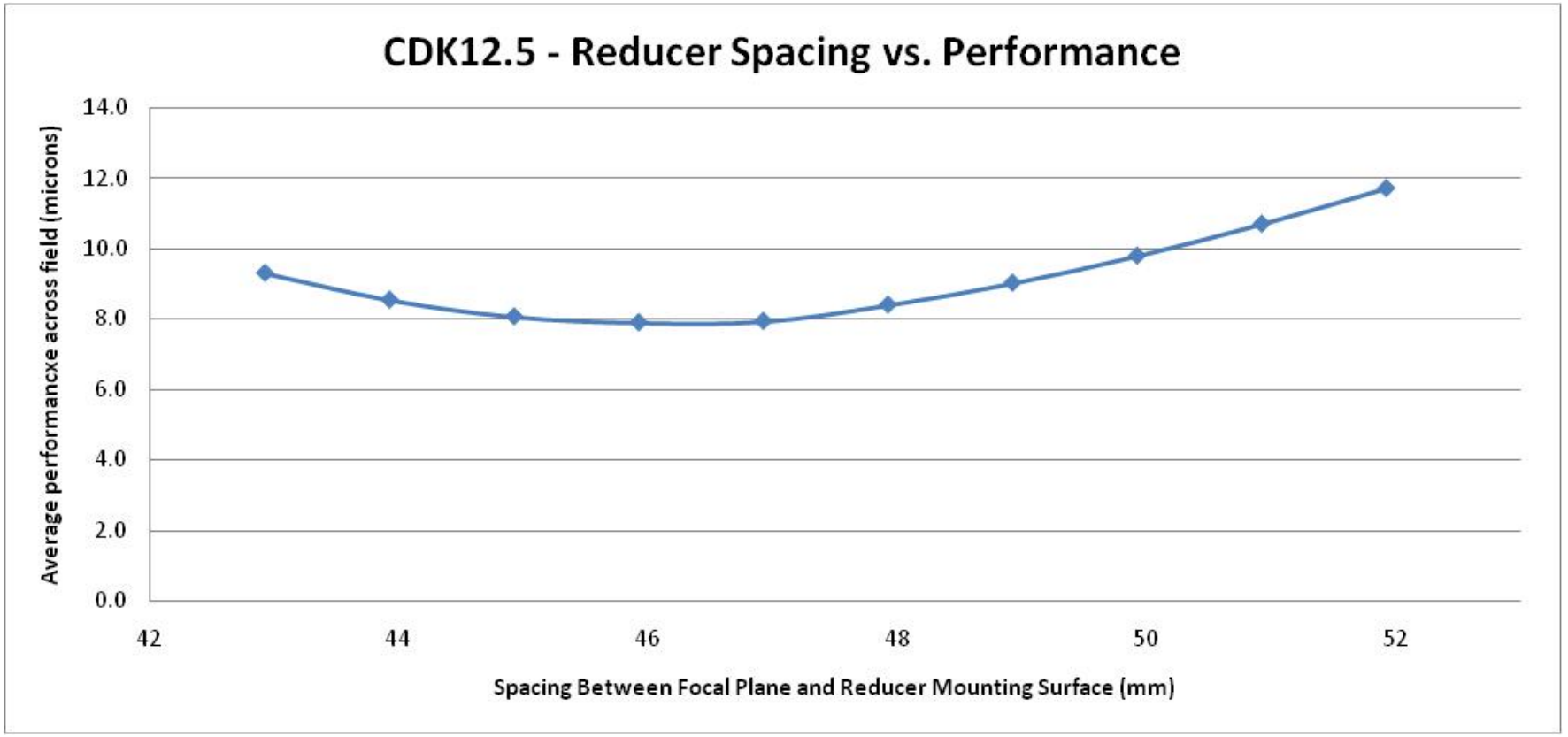
Chart for CDK17 and CDK20 using the 200166 Reducer

A	B	C	Performance**	F-ratio
0.846	0	1.69	9.7	4.57
0.758	0	1.73	8.7	4.56
0.670	0	1.77	8.0	4.54
0.580	0	1.81	7.3	4.53
0.490	0	1.85	7.0	4.51
0.399	0	1.89	7.3	4.49
0.308	0	1.93	8.0	4.48
0.216	0	1.97	8.3	4.46
0.123	0	2.01	8.7	4.45
0.030	0	2.04	9.7	4.43

**: RMS spot size averaged across the field in microns



The performance of the reducer as the distance between the reducer and the focal plane is varied. The performance is an average of on-axis, midway in the field and 21mm off-axis. The measurement is in microns. The spot of best performance is 1.85" or 47mm. But even as you move as low as 43mm or as high as 52mm, the performance is still quite good.



The performance of the reducer as the distance between the reducer and the focal plane is varied. The performance is an average of on-axis, midway in the field and 21mm off-axis. The measurement is in microns. The spot of best performance is 1.85" or 47mm. But even as you move as low as 43mm or as high as 52mm, the performance is still quite good.

CCD Camera / Adapter Configurations

Due to the limitation in backfocus, the CCD equipment that can be used with the reducer is limited. There is not room for off-axis guiders so you will need to use a camera with a built in autoguider or need to use a guidescope or need to take unguided exposures. Below are several

CDK12.5 and the SBIG - STL Camera

Part Number	Description	Backfocus Used
125388	2.75" to SecureFit Adapter	0.5"
200377	SecureFit 1/2" Spacer	0.5"
125166	.66x Reducer	NA
200362	SecureFit to STL CCD Adapter	0.25"
NA	SBIG STL Camera	1.5"
Reducer to focal plane distance		1.75"
Expected performance		8.3 micron
Approximate focuser position		0.95"
Effective focal ratio		f/5.35

CDK12.5 and the SBIG - STL Camera with FW8 Filterwheel

Part Number	Description	Backfocus Used
125388	2.75" to SecureFit Adapter	0.5"
200377	SecureFit 1/2" Spacer	0.5"
125166	.66x Reducer	NA
200362	SecureFit to STL CCD Adapter	0.25"
NA	SBIG STL Camera w/ FW8	1.82"
Reducer to focal plane distance		2.07"
Expected performance		12.5 micron
Approximate focuser position		0.25"
Effective focal ratio		f/5.19

CDK12.5 and the SBIG - ST Camera Body

Part Number	Description	Backfocus Used
125388	2.75" to SecureFit Adapter	0.5"
200377	SecureFit 1/2" Spacer	0.5"
125166	.66x Reducer	NA
200377	SecureFit 1/2" Spacer	0.5"
200377	SecureFit 1/2" Spacer	0.5"
200397	SecureFit to ST CCD Adapter	0.25"
NA	SBIG ST Camera	.742"
Reducer to focal plane distance		1.99"
Expected performance		10.7 micron
Approximate focuser position		0.359"

CDK12.5 and the SBIG - ST Camera and CFW-10

Part Number	Description	Backfocus Used
125388	2.75" to SecureFit Adapter	0.5"
200377	SecureFit 1/2" Spacer	0.5"
125166	.66x Reducer	NA
200377	SecureFit 1/2" Spacer	0.5"
200377	SecureFit 1/2" Spacer	0.5"
200397	SecureFit to ST CCD Adapter	0.25"
NA	SBIG ST Camera and CFW-10	1.32"
Reducer to focal plane distance		2.07"
Expected performance		12.5 micron

CDK12.5 and the SBIG - ST Camera and CFW-8

Part Number	Description	Backfocus Used
125388	2.75" to SecureFit Adapter	0.5"
200377	SecureFit 1/2" Spacer	0.5"
125166	.66x Reducer	NA
200377	SecureFit 1/2" Spacer	0.5"
200397	SecureFit to ST CCD Adapter	0.25"
NA	SBIG ST Camera and CFW8	1.74"
Reducer to focal plane distance		1.99"
Expected performance		10.7 micron
Approximate focuser position		0.359"
Effective focal ratio		f/5.23

CDK17 and CDK20 and the SBIG - STL Camera

Part Number	Description	Backfocus Used
200166	.66x Reducer	NA
200362	SecureFit to SLT CCD Adapter	0.25"
NA	SBIG STL Camera	1.5"
Reducer to focal plane distance		1.75"
Expected performance		8.5 micron
Approximate focuser position		.908"
Effective focal ratio		f/4.55

CDK17 & 20 and the SBIG - STL Camera with FW8 Filterwheel

Part Number	Description	Backfocus Used
200166	.66x Reducer	NA
200362	SecureFit to SLT CCD Adapter	0.25"
NA	SBIG STL Camera w/ FW8	1.82"
Reducer to focal plane distance		2.07"

DOES NOT REACH FOCUS AT PRESENT

CDK12.5 and the Apogee Alta Camera

Part Number	Description	Backfocus Used
125388	2.75" to SecureFit Adapter	0.5"
200377	SecureFit 1/2" Spacer	0.5"
125166	.66x Reducer	NA
200377	SecureFit 1/2" Extender	0.5"
200396	SecureFit to Alta CCD Adapter	0.25"
NA	Apogee Alta Camera	1.008"
Reducer to focal plane distance		1.76"
Expected performance		8.2 micron
Approximate focuser position		.908"

CDK12.5 and the Apogee Alta Camera and AFW50

Part Number	Description	Backfocus Used
125388	2.75" to SecureFit Adapter	0.5"
125166	.66x Reducer	NA
200366	SecureFit to SLT CCD Adapter	0.25"
NA	Apogee Alta w/AFW50	2.058"
Reducer to focal plane distance		2.308"
Expected performance		19.4 micron
Approximate focuser position		0.412"
Effective focal ratio		f/5.09

CDK17 and CDK20 and the Apogee Alta Camera

Part Number	Description	Backfocus Used
200166	.66x Reducer	NA
200377	SecureFit 1/2" Spacer	0.5"
200396	SecureFit to Alta CCD Adapter	0.25"
NA	Apogee Alta Camera	1.008"
Reducer to focal plane distance		1.76"
Expected performance		8.5 micron
Approximate focuser position		.714"

CDK17 and CDK20 and the Apogee Alta Camera and AFW50

Part Number	Description	Backfocus Used
200166	.66x Reducer (for Apogee)	NA
NA	Apogee Alta & AFW50	2.058"
Reducer to focal plane distance		2.058"

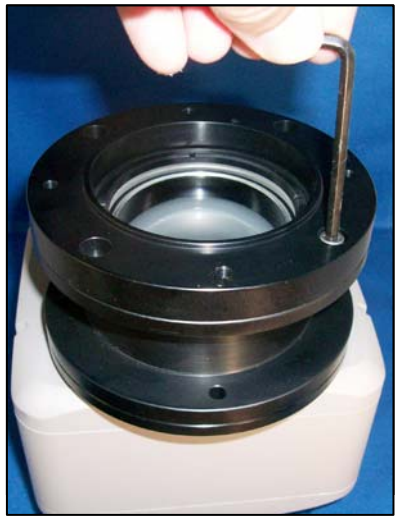
DOES NOT REACH FOCUS AT PRESENT

Installation on an STL Camera Body

Installing the STL Camera with the 125166 reducer to a CDK12.5

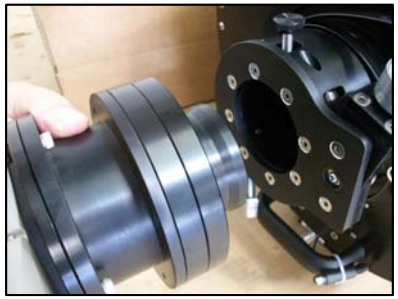
1 - Attach the 200362 (the SecureFit STL CCD Adapter to the STL camera body.

2 - Attach the 125166 Reducer to the 200362 with the four 10-32 SHC screws provided.



3 - Attach the 200377 SecureFit 1/2" Extender to the 125166 reducer with the four 10-32 SHC screws

4 - Attach the 125388, the 2.75" to SecureFit Adapter to the 1/2" Extender with the four 10-32 SHC screws



5 - Insert the 2.75" to SecureFit Adapter into the 2.75" focuser securing with the two set screws on the

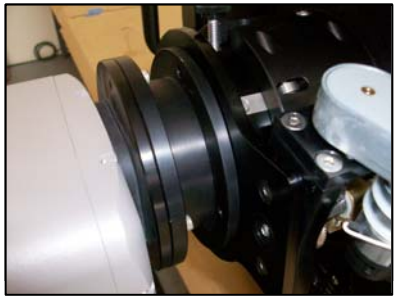
6 - The attached assembly.

Installing the STL Camera with the 200166 reducer to a CDK17 or CDK20

1 - Attach the 200362 (the SecureFit STL CCD Adapter to the STL camera body.

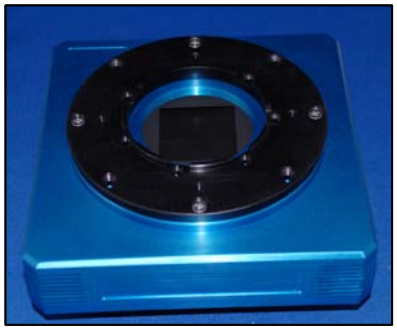
2 - Attach the 200166 Reducer to the SecureFit CCD Adapters using the four 10-32 SHC screws provided.

3 - Insert the 3.5" to barrell of the 200166 Reducer into the 3.5" focuser securing with the two set screws on the focuser.

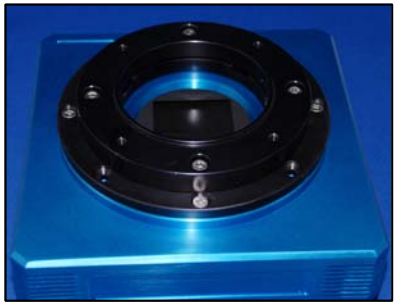


4 - The installed system

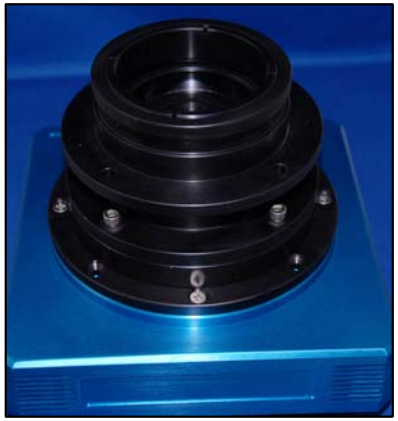
Installation of the Reducer with an Apogee Alta Camera Bodyto the CDK17 or 20



1 - Attach the 200396, the SecureFit STL CCD Adapter, to the Alta camera body with the screws provided.



2 - Attach the 200377 SecureFit 1/2" Extender to the SecureFit CCD Adapter using the four 10-32 SHC



3 - Attach the 200166 Reducer to the SecureFit CCD Adapters using the four 10-32 SHC screws provided.

4 - Insert the 3.5" to barrell of the 200166 Reducer into the 3.5" focuser securing with the two set screws on