

Constants and parameters	Notation	Values	Units	Measured
Physical constants				
speed of light in vacuum	C	3,00E+08	m/s	
Plank constant	h	6,63E-34	J.s	
Boltzman constant	kb	1,38E-23	m ² .kg.s ⁻² .K ⁻¹	
Parameters				
effective wavelength	λ_{eff}	6,00E-07	m	
wavelength width	$\Delta\lambda$	4,00E-07	m	
entrance pupil diameter	D	5,00E-03	m	
distance pseudo stellar sources to CCD	L0	3,00E-01	m	
distance mirror to CCD	L	6,00E-01	m	
optics + fibres transmission	T	7,00E-01	-	
CCD quantum efficiency	ρ_{pix}	8,00E-01	-	
effective quantum well size	w	2,00E+05	-	
minimum read time	Tmin	1,00E-03	s	
ratio central pixel flux/centroid flux	Rflux	2,00E-01	-	
Number of photon-electrons needed	Ne-	5,70E+10	-	
Parameters (SMF)				
SMF NA	NA	0,13	-	
White source temperature	Ts	3,00E+03	K	
Black body emissivity	ϵ	1,00E+00	-	
Parameters (MMF)				
pinhole diameter	d	1,50E-05	m	
Intermediate quantities				
Number of frames needed	Nf	5,70E+04	-	
Black body spectral irradiance	Slbb	5,13E+11	W.m ⁻³ .sr ⁻¹	
Black body irradiance	lbb	2,05E+05	W.m ⁻² .sr ⁻¹	
Intermediate quantities (SMF)				
SMF power (one fibre)	Psmf	5,17E-08	W	2,00E-07
ρ_{mirror}	ρ_{SMF}	8,18E-03	-	
flux on CCD (one spot)	P _{im_smf}	4,24E-10	W	
photon flux on CCD (one spot)	Fy _{im_smf}	1,28E+09	s ⁻¹	
photo-electron flux on CCD (one spot)	Fe _{im_smf}	1,02E+09	s ⁻¹	
Intermediate quantities (MMF)				
Fiber irradiance	L _{fiber}	1,44E+05	W.m ⁻² .sr ⁻¹	
pinhole power (one pinhole)	Phole	2,54E-05	W	
Irradiance on mirror	E _{mirror}	8,47E-05	W.m ⁻²	
flux on CCD (one spot)	P _{im_mmf}	1,66E-09	W	3,30E-09
photon flux on CCD (one spot)	Fy _{im_mmf}	5,02E+09	s ⁻¹	
photo-electron flux on CCD (one spot)	Fe _{im_mmf}	4,01E+09	s ⁻¹	
Final quantities (SMF)				
Integration time (source limited)	Ty _{i_smf}	9,78E-04	s	
Source optimality coefficient	η	1,02	-	
Integration time	Ti	1,00E-03	s	
Total integration time	Ttot	5,70E+01	s	
Final quantities (MMF)				
White source exposure time	Ty _{i_mmf}	2,49E-04	s	
Source optimality coefficient	η	4,01	-	0.8
Integration time	Ti	1,00E-03	s	
Total integration time	Ttot	5,70E+01	s	