



ESPRESSO Exposure Time Calculator

Optical Echelle Spectroscopy Mode [Version P116](#)

[Description](#)

[FAQ](#)

Arm: RED

Observing conditions:

- **Telescope Setup: 1 UT**
- **Mode: single HR 1x1 fast**
- **Input flux distribution:**
 - Source type: **Blackbody**
 - Temperature: **6500 K**
 - Object Magnitude: **V = 17 (Vega)**
- **Spatial Distribution: Point Source**
- **Sky Conditions:**
 - ☐ **show sky model configuration details**
 - Moon FLI: **0.5**
 - Moon-target separation: **45** degrees
 - Airmass: **1.5**
 - Seeing: **0.8** arcsec
 - T category to use in phase 1: **50%**
 - PWV: **30** mm
 - Probability > **95%** of realising the $\text{PWV} \leq 30$ mm

Spectral Format Red Arm

Order	wav of central column (nm)	y of central column (pix)	y of central column (arcsec)	FSR range (nm)	FSR I Min (nm)	FSR I Max (nm)	start wav (nm)	end wav (nm)	TS range (nm)
78	784.45	1145	114	10.06	779.45	789.51	778.98	790.64	11.66
79	774.52	1376	138	9.80	769.65	779.45	769.11	780.65	11.54
80	764.84	1601	160	9.56	760.09	769.65	759.48	770.89	11.41
81	755.40	1819	182	9.33	750.76	760.09	750.10	761.38	11.28
82	746.19	2030	203	9.10	741.66	750.76	740.95	752.10	11.16
83	737.19	2236	224	8.88	732.78	741.66	732.01	743.04	11.03
84	728.42	2435	244	8.67	724.11	732.78	723.29	734.20	10.91
85	719.85	2629	263	8.47	715.64	724.11	714.78	725.57	10.79
86	711.48	2818	282	8.27	707.37	715.64	706.46	717.13	10.67
87	703.30	3002	300	8.08	699.28	707.37	698.34	708.89	10.56
88	695.31	3181	318	7.90	691.38	699.28	690.40	700.84	10.45
89	687.50	3355	336	7.72	683.66	691.38	682.63	692.97	10.34
90	679.86	3525	353	7.55	676.10	683.66	675.04	685.27	10.23
91	672.39	3691	369	7.39	668.71	676.10	667.62	677.74	10.12

92	665.08	3852	385	7.23	661.48	668.71	660.36	670.38	10.02
93	657.93	4010	401	7.07	654.41	661.48	653.26	663.18	9.92
94	650.93	4164	416	6.92	647.48	654.41	646.31	656.12	9.82
95	644.08	4314	431	6.78	640.70	647.48	639.50	649.22	9.71
96	637.37	4460	446	6.64	634.06	640.70	632.84	642.46	9.62
97	630.80	4604	460	6.50	627.56	634.06	626.31	635.83	9.52
98	624.36	4743	474	6.37	621.19	627.56	619.92	629.35	9.43
99	618.05	4880	488	6.24	614.95	621.19	613.65	622.99	9.34
100	611.87	5014	501	6.12	608.83	614.95	607.52	616.76	9.25
101	605.81	5144	514	6.00	602.83	608.83	601.50	610.66	9.16
102	599.87	5272	527	5.88	596.95	602.83	595.60	604.67	9.07
103	594.05	5397	540	5.77	591.18	596.95	589.82	598.80	8.99
104	588.34	5519	552	5.66	585.52	591.18	584.14	593.05	8.90
105	582.74	5639	564	5.55	579.97	585.52	578.58	587.40	8.82
106	577.24	5756	576	5.45	574.53	579.97	573.12	581.86	8.74
107	571.84	5870	587	5.34	569.18	574.53	567.76	576.42	8.66
108	566.55	5983	598	5.25	563.94	569.18	562.50	571.08	8.58
109	561.35	6093	609	5.15	558.79	563.94	557.34	565.85	8.51
110	556.25	6200	620	5.06	553.73	558.79	552.27	560.71	8.43
111	551.24	6306	631	4.97	548.76	553.73	547.30	555.65	8.36
112	546.31	6409	641	4.88	543.89	548.76	542.41	550.69	8.29
113	541.48	6510	651	4.79	539.09	543.89	537.61	545.82	8.22
114	536.73	6609	661	4.71	534.39	539.09	532.89	541.03	8.15
115	532.06	6707	671	4.63	529.76	534.39	528.25	536.33	8.08
116	527.48	6802	680	4.55	525.21	529.76	523.70	531.71	8.01
117	522.97	6896	690	4.47	520.74	525.21	519.22	527.16	7.94

- **Image Quality: 0.87 arcsec at $\lambda = 600$ nm (to be used for OB constraint set)**

☐ show details of the IQ calculations at $\lambda = 600$ nm

- **Image Quality: 0.852 arcsec at the central wavelength $\lambda_c = 650$ nm of the RED arm**

☐ show details of the IQ calculations at $\lambda_c = 650$ nm

We remind users that:

- the Turbulence Category to be specified in Phase 1 should be the one derived for 500 nm.
- the reference value to be entered in the image quality constraint in Phase 2 refers to the wavelength 600nm.

- **Instrument setup:**

- ESPRESSO fiber feed used
- Fiber diameter: **1 arcsec**
- Fiber entrance loss: **48.2 %**
- Exposure time: **3000 s**
- Medium pixel scale in Y (spatial) direction: **0.1 arcsec/pix**
- Spatial (Y) bin size: **1 unbinned pixel/bin**
- Spectral (X) bin size: **1 unbinned pixel/bin**
- Digital pixel size in velocity: **0.5 km/s**
- The sky signal is integrated over : **18 unbinned spatial pixels (18 spatial bins)**
- Effective sky aperture: **1 arcsec²**

- **Detector parameters:**

- Mode: **fast**, gain: **low**, binning: **1x1**
- Gain (conversion factor): **1 e-/ADU**
- Readout noise: **5 e-**, dark current: **2 e-/h**

- Saturation limit: **65536 e-**
- Linearity limit: **55000 e-**

☐ Show detailed S/N formula

Detected Counts Red Arm

Order	FSR Min Wavelength					Wavelength of central column								FSR Max Wavelength				
	Eff. (%)	Obj (e-)	Sky (e-)	Imax (e-)	S/N*	lambda (nm)	bin size (nm)	Eff. (%)	Obj (e-)	Sky (e-)	Imax (e-)	S/N*	Texp(s) for S/N*=30	Eff. (%)	Obj (e-)	Sky (e-)	Imax (e-)	S/N*
78	1.8	52.6	6.37	3.3	2.3	784.45	0.0013	3.6	90	11.8	5.7	3.7	5.3e+04	0	0	0	0	0
79	1.9	57.2	7.59	3.6	2.5	774.52	0.0013	3.9	97.9	12.3	6.1	4	4.8e+04	1.9	39	5.13	2.4	1.7
80	1.8	52.4	5.34	3.2	2.3	764.84	0.0013	3.6	89.8	10.9	5.6	3.7	5.2e+04	1.8	35.9	4.36	2.2	1.6
81	2.4	68.7	7.52	4.2	2.9	755.40	0.0012	4.7	119	14	7.4	4.8	3.8e+04	2.4	47.9	6.51	3	2.1
82	2.6	75.7	8.55	4.7	3.2	746.19	0.0012	5.2	131	15.2	8.1	5.2	3.4e+04	2.6	53.1	6.49	3.3	2.3
83	2.7	77.1	8.62	4.8	3.2	737.19	0.0012	5.3	133	15	8.2	5.3	3.3e+04	2.7	53.7	6.19	3.3	2.3
84	2.7	77.2	7.77	4.7	3.2	728.42	0.0012	5.3	133	14.5	8.2	5.3	3.3e+04	2.7	53.9	6.03	3.3	2.3
85	3	85.5	8.85	5.2	3.6	719.85	0.0012	6	148	15.6	9.1	5.8	2.9e+04	3	60.3	6.77	3.7	2.6
86	3	85.7	8.69	5.2	3.6	711.48	0.0012	6	149	15.4	9.1	5.9	2.9e+04	3	61.1	6.42	3.8	2.6
87	3	85.3	8.59	5.2	3.6	703.30	0.0012	6	148	15	9.1	5.9	2.9e+04	3	61	6.22	3.7	2.6
88	2.9	83.1	8.31	5.1	3.5	695.31	0.0011	5.8	144	14.2	8.8	5.7	3e+04	2.9	59.1	5.81	3.6	2.5
89	2.8	79.7	7.02	4.8	3.3	687.50	0.0011	5.6	138	13.2	8.4	5.5	3.2e+04	2.8	56.9	5.47	3.5	2.4
90	3.1	88.3	7.98	5.4	3.7	679.86	0.0011	6.3	154	14.3	9.4	6.1	2.8e+04	3.1	63.7	6.26	3.9	2.7
91	3.2	89.6	7.96	5.4	3.7	672.39	0.0011	6.4	157	14.2	9.5	6.1	2.7e+04	3.2	65.1	6.02	3.9	2.8
92	3.3	90.9	7.61	5.5	3.8	665.08	0.0011	6.6	159	14.1	9.6	6.2	2.7e+04	3.3	66.3	6.04	4	2.8
93	3.5	95.7	8.71	5.8	4	657.93	0.0011	7	168	14.6	10	6.5	2.5e+04	3.5	70.3	6.28	4.3	3
94	3.1	86	7.28	5.2	3.6	650.93	0.0011	6.3	151	13	9.1	6	2.8e+04	3.2	63.5	5.27	3.8	2.7
95	3.1	85.4	7.05	5.1	3.6	644.08	0.0011	6.3	151	12.7	9.1	5.9	2.9e+04	3.2	63.3	5.4	3.8	2.7
96	3.2	86.3	7.21	5.2	3.6	637.37	0.0011	6.4	152	12.7	9.2	6	2.8e+04	3.2	64.1	5.41	3.9	2.7
97	3.2	85.5	7.16	5.1	3.6	630.80	0.001	6.4	151	12.7	9.1	6	2.9e+04	3.2	63.7	5.34	3.8	2.7
98	3.2	85	7.11	5.1	3.6	624.36	0.001	6.4	150	12.7	9.1	5.9	2.9e+04	3.2	63.6	5.37	3.8	2.7
99	3.2	84.9	7.23	5.1	3.5	618.05	0.001	6.5	150	12.7	9.1	5.9	2.9e+04	3.2	63.7	5.38	3.8	2.7
100	3.2	82.7	7.01	5	3.5	611.87	0.001	6.3	147	12.4	8.8	5.8	2.9e+04	3.2	62.2	5.24	3.7	2.7
101	3.1	81.4	6.92	4.9	3.4	605.81	0.001	6.3	145	12.3	8.7	5.7	3e+04	3.2	61.5	5.2	3.7	2.6
102	3.1	80.4	6.86	4.8	3.4	599.87	0.00099	6.3	143	12.2	8.6	5.7	3e+04	3.1	60.9	5.18	3.7	2.6
103	3.1	79.1	6.81	4.8	3.3	594.05	0.00098	6.2	141	12	8.5	5.6	3.1e+04	3.1	60.2	5.13	3.6	2.6
104	3.1	77.7	6.58	4.7	3.3	588.34	0.00097	6.2	138	11.9	8.4	5.5	3.1e+04	3.1	59.2	5.08	3.6	2.5
105	3.1	78.3	6.84	4.7	3.3	582.74	0.00096	6.3	140	12	8.4	5.6	3.1e+04	3.2	59.9	5.18	3.6	2.6
106	3.1	75.8	6.58	4.6	3.2	577.24	0.00095	6.1	135	11.6	8.1	5.4	3.2e+04	3.1	57.8	4.94	3.5	2.5
107	3	74.4	6.31	4.5	3.1	571.84	0.00095	6.1	133	11.4	8	5.3	3.3e+04	3	57	4.91	3.4	2.4
108	3.1	75.3	6.52	4.5	3.2	566.55	0.00094	6.2	134	11.6	8.1	5.4	3.3e+04	3.1	57.8	5.01	3.5	2.5
109	3	73.1	6.43	4.4	3.1	561.35	0.00093	6.1	131	11.2	7.9	5.2	3.4e+04	3	56.3	4.79	3.4	2.4
110	2.9	69.3	6.01	4.2	2.9	556.25	0.00092	5.9	124	10.7	7.5	5	3.5e+04	2.9	53.8	4.55	3.2	2.3
111	2.9	67.8	5.91	4.1	2.9	551.24	0.00091	5.8	122	10.5	7.3	4.9	3.6e+04	2.9	52.7	4.54	3.2	2.3
112	2.8	65.8	5.82	4	2.8	546.31	0.0009	5.7	118	10.3	7.1	4.8	3.8e+04	2.8	51.3	4.41	3.1	2.2
113	2.7	62.7	5.57	3.8	2.7	541.48	0.0009	5.5	113	9.85	6.8	4.6	4e+04	2.7	49	4.2	3	2.1
114	2.6	59.7	5.35	3.6	2.6	536.73	0.00089	5.3	108	9.43	6.5	4.4	4.2e+04	2.6	46.8	4.02	2.8	2
115	2.5	55.4	5.16	3.4	2.4	532.06	0.00088	4.9	99.8	8.79	6	4.1	4.6e+04	2.5	43.5	3.67	2.6	1.9
116	1.9	42.3	7.07	2.7	1.8	527.48	0.00087	3.8	76.4	6.76	4.6	3.2	6.2e+04	1.9	33.3	2.41	2	1.5
117	2.7	58.3	5.13	3.5	2.5	522.97	0.00086	5.3	105	9.35	6.4	4.3	4.3e+04	2.7	46	10.7	3.2	2

* The S/N is per spectral bin. For point sources, **Eff** refers to the total efficiency including the fiber entrance loss and atmospheric transmission.

Warning: Please be aware that without a waiver there is a one-hour execution time limit for Service Mode OBs, and that the times returned here **do not** include instrument overheads, times for sky measurements, etc. Thus, care must be taken to allow for these additional times when constructing compliant OBs.

Arm: BLUE

Observing conditions:

- **Telescope Setup: 1 UT**
- **Mode: single HR 1x1 fast**
- **Input flux distribution:**
 - Source type: **Blackbody**
 - Temperature: **6500 K**
 - Object Magnitude: **V = 17 (Vega)**
- **Spatial Distribution: Point Source**
- **Sky Conditions:**
 - ☐ **show sky model configuration details**
 - Moon FLI: **0.5**
 - Moon-target separation: **45 degrees**
 - Airmass: **1.5**
 - Seeing: **0.8 arcsec**
 - T category to use in phase 1: **50%**
 - PWV: **30 mm**
 - Probability > **95%** of realising the $PWV \leq 30$ mm

Spectral Format Blue Arm

Order	wav of central column (nm)	y of central column (pix)	y of central column (arcsec)	FSR range (nm)	FSR 1 Min (nm)	FSR 1 Max (nm)	start wav (nm)	end wav (nm)	TS range (nm)
117	522.97	1122	112	4.47	520.74	525.21	519.13	527.03	7.89
118	518.54	1324	132	4.39	516.35	520.74	514.72	522.57	7.84
119	514.18	1521	152	4.32	512.03	516.35	510.39	518.18	7.79
120	509.89	1714	171	4.25	507.78	512.03	506.13	513.87	7.74
121	505.68	1902	190	4.18	503.60	507.78	501.94	509.63	7.69
122	501.53	2086	209	4.11	499.49	503.60	497.82	505.45	7.64
123	497.46	2266	227	4.04	495.44	499.49	493.76	501.35	7.58
124	493.44	2442	244	3.98	491.46	495.44	489.78	497.31	7.53
125	489.50	2614	261	3.92	487.55	491.46	485.85	493.33	7.48
126	485.61	2783	278	3.85	483.69	487.55	481.99	489.42	7.43
127	481.79	2948	295	3.79	479.90	483.69	478.19	485.57	7.38
128	478.02	3110	311	3.73	476.16	479.90	474.45	481.78	7.33
129	474.32	3269	327	3.68	472.49	476.16	470.77	478.05	7.28
130	470.67	3424	342	3.62	468.87	472.49	467.15	474.38	7.23
131	467.08	3577	358	3.57	465.30	468.87	463.57	470.76	7.18
132	463.54	3726	373	3.51	461.79	465.30	460.06	467.19	7.13
133	460.05	3873	387	3.46	458.33	461.79	456.60	463.68	7.08
134	456.62	4017	402	3.41	454.92	458.33	453.19	460.22	7.04
135	453.24	4158	416	3.36	451.57	454.92	449.83	456.82	6.99
136	449.91	4297	430	3.31	448.26	451.57	446.52	453.46	6.94
137	446.62	4433	443	3.26	445.00	448.26	443.26	450.15	6.90
138	443.39	4567	457	3.21	441.78	445.00	440.04	446.89	6.85
139	440.20	4698	470	3.17	438.62	441.78	436.87	443.68	6.81
140	437.05	4827	483	3.12	435.50	438.62	433.75	440.51	6.76
141	433.95	4954	495	3.08	432.42	435.50	430.67	437.39	6.72
142	430.90	5079	508	3.03	429.38	432.42	427.64	434.31	6.67
143	427.88	5201	520	2.99	426.39	429.38	424.64	431.27	6.63
144	424.91	5321	532	2.95	423.44	426.39	421.69	428.28	6.59
145	421.98	5440	544	2.91	420.53	423.44	418.78	425.33	6.55

146	419.09	5556	556	2.87	417.66	420.53	415.91	422.42	6.50
147	416.24	5671	567	2.83	414.83	417.66	413.08	419.54	6.46
148	413.43	5783	578	2.79	412.03	414.83	410.29	416.71	6.42
149	410.65	5894	589	2.76	409.28	412.03	407.53	413.91	6.38
150	407.91	6003	600	2.72	406.56	409.28	404.82	411.15	6.34
151	405.21	6110	611	2.68	403.88	406.56	402.13	408.43	6.30
152	402.55	6216	622	2.65	401.23	403.88	399.48	405.75	6.26
153	399.92	6320	632	2.61	398.61	401.23	396.87	403.10	6.22
154	397.32	6422	642	2.58	396.03	398.61	394.30	400.48	6.18
155	394.76	6522	652	2.55	393.49	396.03	391.75	397.90	6.15
156	392.23	6621	662	2.51	390.97	393.49	389.24	395.35	6.11
157	389.73	6719	672	2.48	388.49	390.97	386.76	392.83	6.07
158	387.26	6815	681	2.45	386.04	388.49	384.31	390.34	6.03
159	384.83	6910	691	2.42	383.62	386.04	381.89	387.89	6.00
160	382.42	7003	700	2.39	381.23	383.62	379.50	385.47	5.96
161	380.04	7094	709	2.36	378.87	381.23	377.15	383.07	5.93

- **Image Quality: 0.87 arcsec at $\lambda = 600$ nm (to be used for OB constraint set)**
☐ show details of the IQ calculations at $\lambda = 600$ nm
- **Image Quality: 0.936 arcsec at the central wavelength $\lambda_c = 450$ nm of the BLUE arm**
☐ show details of the IQ calculations at $\lambda_c = 450$ nm

We remind users that:

- the Turbulence Category to be specified in Phase 1 should be the one derived for 500 nm.
- the reference value to be entered in the image quality constraint in Phase 2 refers to the wavelength 600nm.

- **Instrument setup:**
 - ESPRESSO fiber feed used
 - Fiber diameter: **1 arcsec**
 - Fiber entrance loss: **54.6 %**
 - Exposure time: **3000 s**
 - Medium pixel scale in Y (spatial) direction: **0.1 arcsec/pix**
 - Spatial (Y) bin size: **1 unbinned pixel/bin**
 - Spectral (X) bin size: **1 unbinned pixel/bin**
 - Digital pixel size in velocity: **0.5 km/s**
 - The sky signal is integrated over : **18 unbinned spatial pixels (18 spatial bins)**
 - Effective sky aperture: **1 arcsec²**
- **Detector parameters:**
 - Mode: **fast**, gain: **low**, binning: **1x1**
 - Gain (conversion factor): **1 e-/ADU**
 - Readout noise: **7 e-**, dark current: **2 e-/h**
 - Saturation limit: **65536 e-**
 - Linearity limit: **55000 e-**

☐ **Show detailed S/N formula**

Detected Counts Blue Arm

Order	FSR Min Wavelength					Wavelength of central column								FSR Max Wavelength				
	Eff. (%)	Obj (e-)	Sky (e-)	I _{max} (e-)	S/N*	lambda (nm)	bin size (nm)	Eff. (%)	Obj (e-)	Sky (e-)	I _{max} (e-)	S/N*	Texp(s) for S/N*=30	Eff. (%)	Obj (e-)	Sky (e-)	I _{max} (e-)	S/N*

117	2.3	51	5.12	3.1	1.6	522.97	0.00086	4.7	92	9.34	5.6	2.9	5.7e+04	2.3	40.2	10.7	2.8	1.3
118	2.3	50.2	5.09	3.1	1.6	518.54	0.00086	4.6	90.8	9.26	5.6	2.9	5.8e+04	2.3	39.7	4	2.4	1.3
119	2.4	50.3	5.15	3.1	1.6	514.18	0.00085	4.7	91	9.33	5.6	2.9	5.7e+04	2.4	39.9	4.12	2.4	1.3
120	2.4	50.1	5.18	3.1	1.6	509.89	0.00084	4.7	90.6	9.34	5.6	2.8	5.8e+04	2.4	39.8	4.11	2.4	1.3
121	2.3	49	5.11	3	1.6	505.68	0.00084	4.7	88.8	9.2	5.4	2.8	5.9e+04	2.4	39.1	4.03	2.4	1.3
122	2.3	48.2	4.96	3	1.6	501.53	0.00083	4.7	87.4	9.11	5.4	2.8	6e+04	2.3	38.5	4.01	2.4	1.2
123	2.4	48.6	5.08	3	1.6	497.46	0.00082	4.8	88.3	9.27	5.4	2.8	6e+04	2.4	39	4.13	2.4	1.3
124	2.3	45.5	6.25	2.9	1.5	493.44	0.00082	4.6	82.8	8.77	5.1	2.6	6.4e+04	2.3	36.6	3.66	2.2	1.2
125	1.5	30	2.43	1.8	0.97	489.50	0.00081	3	54.7	5.86	3.4	1.8	1e+05	1.5	24.3	2.25	1.5	0.79
126	2.3	45.8	5.01	2.8	1.5	485.61	0.0008	4.7	83.7	9.1	5.2	2.6	6.3e+04	2.4	37.2	4.74	2.3	1.2
127	2.3	44.6	4.98	2.8	1.4	481.79	0.0008	4.7	81.6	9.02	5	2.6	6.5e+04	2.3	36.3	3.99	2.2	1.2
128	2.3	43.6	4.92	2.7	1.4	478.02	0.00079	4.6	79.3	8.85	4.9	2.5	6.8e+04	2.3	35.1	3.89	2.2	1.1
129	2.3	42.3	4.72	2.6	1.4	474.32	0.00078	4.5	77	8.61	4.8	2.4	7e+04	2.3	34.1	3.79	2.1	1.1
130	2.3	41.8	4.73	2.6	1.3	470.67	0.00078	4.5	76.3	8.56	4.7	2.4	7.1e+04	2.3	33.9	3.8	2.1	1.1
131	2.2	40.5	4.6	2.5	1.3	467.08	0.00077	4.5	74.1	8.39	4.6	2.4	7.3e+04	2.2	33.1	3.71	2	1.1
132	2.2	39.8	4.59	2.5	1.3	463.54	0.00077	4.4	72.9	8.33	4.5	2.3	7.5e+04	2.2	32.5	3.7	2	1.1
133	2.2	38.7	4.51	2.4	1.3	460.05	0.00076	4.4	71.1	8.21	4.4	2.3	7.7e+04	2.2	31.8	3.65	2	1
134	2.1	37.4	4.51	2.3	1.2	456.62	0.00076	4.3	68.7	8.06	4.3	2.2	8e+04	2.2	30.9	3.56	1.9	1
135	2	35	4.29	2.2	1.1	453.24	0.00075	4.1	64.3	7.67	4	2.1	8.6e+04	2.1	28.9	3.35	1.8	0.94
136	1.9	32.9	4.01	2.1	1.1	449.91	0.00074	3.9	60.4	7.31	3.8	1.9	9.3e+04	2	27.2	3.21	1.7	0.88
137	1.9	32	3.99	2	1	446.62	0.00074	3.9	58.8	7.19	3.7	1.9	9.6e+04	1.9	26.4	3.2	1.6	0.86
138	1.9	30.6	3.79	1.9	1	443.39	0.00073	3.7	56.3	6.96	3.5	1.8	1e+05	1.9	25.3	3.08	1.6	0.82
139	1.8	29.4	4.03	1.9	0.95	440.20	0.00073	3.7	54.1	6.76	3.4	1.7	1.1e+05	1.8	24.3	2.95	1.5	0.79
140	1.6	24.9	2.93	1.5	0.81	437.05	0.00072	3.1	46	5.77	2.9	1.5	1.3e+05	1.6	20.7	2.48	1.3	0.68
141	1.7	26.8	3.51	1.7	0.87	433.95	0.00072	3.4	49.6	6.25	3.1	1.6	1.2e+05	1.7	22.4	2.91	1.4	0.73
142	1.6	24.6	3.12	1.5	0.8	430.90	0.00071	3.2	45.5	5.78	2.9	1.5	1.3e+05	1.6	20.6	2.55	1.3	0.67
143	1.6	23.8	3.13	1.5	0.78	427.88	0.00071	3.2	44.1	5.65	2.8	1.4	1.4e+05	1.6	20	2.54	1.3	0.66
144	1.5	22.2	2.9	1.4	0.72	424.91	0.0007	3	41.1	5.32	2.6	1.3	1.5e+05	1.5	18.7	2.36	1.2	0.61
145	1.4	21.1	2.83	1.3	0.69	421.98	0.0007	2.9	39.1	5.12	2.5	1.3	1.6e+05	1.5	17.8	2.29	1.1	0.58
146	1.4	19.8	2.62	1.2	0.65	419.09	0.00069	2.8	36.7	4.84	2.3	1.2	1.7e+05	1.4	16.7	2.16	1	0.55
147	1.4	20.4	2.34	1.3	0.67	416.24	0.00069	2.9	37.8	5.02	2.4	1.2	1.7e+05	1.4	17.2	2.4	1.1	0.56
148	1.7	24	3.75	1.5	0.78	413.43	0.00068	3.5	44.5	5.95	2.8	1.4	1.4e+05	1.7	20.2	2.81	1.3	0.66
149	1.3	17.5	2.49	1.1	0.57	410.65	0.00068	2.6	32.5	4.37	2	1.1	2e+05	1.3	14.8	1.73	0.92	0.49
150	1.1	15.3	2.16	0.97	0.5	407.91	0.00067	2.3	28.5	3.87	1.8	0.93	2.4e+05	1.2	13	1.68	0.82	0.43
151	1.1	14	1.96	0.89	0.46	405.21	0.00067	2.1	26.1	3.58	1.6	0.85	2.7e+05	1.1	11.9	1.59	0.75	0.39
152	1	13.4	1.81	0.85	0.44	402.55	0.00067	2.1	25	3.48	1.6	0.82	2.9e+05	1	11.4	1.59	0.72	0.38
153	1.1	13.5	2.06	0.87	0.44	399.92	0.00066	2.1	25.2	3.54	1.6	0.82	2.9e+05	1.1	11.5	1.61	0.73	0.38
154	0.9	11.3	1.71	0.72	0.37	397.32	0.00066	1.8	21.1	3	1.3	0.69	3.7e+05	0.91	9.67	1.27	0.61	0.32
155	0.83	10.2	1.38	0.65	0.34	394.76	0.00065	1.7	19.1	2.75	1.2	0.63	4.3e+05	0.84	8.76	1.23	0.55	0.29
156	0.87	10.6	1.79	0.69	0.35	392.23	0.00065	1.7	19.7	2.87	1.3	0.65	4.1e+05	0.88	9.04	1.3	0.57	0.3
157	0.65	7.84	1.2	0.5	0.26	389.73	0.00064	1.3	14.7	2.16	0.93	0.48	6.4e+05	0.67	6.73	0.875	0.42	0.22
158	0.59	6.89	1.18	0.45	0.23	387.26	0.00064	1.2	12.9	1.93	0.82	0.42	7.8e+05	0.6	5.93	0.827	0.38	0.2
159	0.45	5.25	0.834	0.34	0.17	384.83	0.00064	0.92	9.83	1.49	0.63	0.32	1.2e+06	0.46	4.53	0.614	0.29	0.15
160	0.4	4.57	0.807	0.3	0.15	382.42	0.00063	0.81	8.57	1.32	0.55	0.28	1.5e+06	0.41	3.95	0.567	0.25	0.13
161	0.31	3.4	0.63	0.22	0.11	380.04	0.00063	0.62	6.38	1	0.41	0.21	2.6e+06	0.31	2.94	0.4	0.19	0.097

* The S/N is per spectral bin. For point sources, **Eff** refers to the total efficiency including the fiber entrance loss and atmospheric transmission.

Warning: Please be aware that without a waiver there is a one-hour execution time limit for Service Mode OBs, and that the times returned here **do not** include instrument overheads, times for sky measurements, etc. Thus, care must be taken to allow for these additional times when constructing compliant OBs.

Send comments and questions via <https://support.eso.org/>

