ESPRESSO Exposure Time Calculator

Optical Echelle Spectroscopy Mode Version P116 Description FAQ

Arm: RED

Observing conditions:

- **Telescope Setup: 4UTs**
- **Mode: multi MR 4x2 slow**
- **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 ≤ 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 l Min (nm)	FSR l Max (nm)	start wav (nm)	end wav (nm)	TS range (nm)
78	784.45	1143	114	10.06	779.45	789.51	778.89	790.56	11.67
79	774.52	1374	137	9.80	769.65	779.45	769.02	780.56	11.54
80	764.84	1598	160	9.56	760.09	769.65	759.40	770.81	11.41
81	755.40	1816	182	9.33	750.76	760.09	750.02	761.30	11.28
82	746.19	2028	203	9.10	741.66	750.76	740.87	752.02	11.15
83	737.19	2233	223	8.88	732.78	741.66	731.93	742.96	11.03
84	728.42	2433	243	8.67	724.11	732.78	723.21	734.12	10.91
85	719.85	2627	263	8.47	715.64	724.11	714.70	725.49	10.79
86	711.48	2816	282	8.27	707.37	715.64	706.38	717.06	10.67
87	703.30	2999	300	8.08	699.28	707.37	698.26	708.82	10.56
88	695.31	3178	318	7.90	691.38	699.28	690.32	700.77	10.45
89	687.50	3353	335	7.72	683.66	691.38	682.56	692.90	10.34
90	679.86	3523	352	7.55	676.10	683.66	674.97	685.20	10.23
91	672.39	3688	369	7.39	668.71	676.10	667.55	677.67	10.12
92	665.08	3850	385	7.23	661.48	668.71	660.29	670.31	10.02
93	657.93	4007	401	7.07	654.41	661.48	653.19	663.10	9.91
94	650.93	4161	416	6.92	647.48	654.41	646.24	656.05	9.81

95	644.08	4311	431	6.78	640.70	647.48	639.43	649.15	9.71
96	637.37	4458	446	6.64	634.06	640.70	632.77	642.39	9.62
97	630.80	4601	460	6.50	627.56	634.06	626.24	635.77	9.52
98	624.36	4741	474	6.37	621.19	627.56	619.85	629.28	9.43
99	618.05	4877	488	6.24	614.95	621.19	613.59	622.92	9.34
100	611.87	5011	501	6.12	608.83	614.95	607.45	616.70	9.25
101	605.81	5141	514	6.00	602.83	608.83	601.43	610.59	9.16
102	599.87	5269	527	5.88	596.95	602.83	595.53	604.61	9.07
103	594.05	5394	539	5.77	591.18	596.95	589.75	598.74	8.99
104	588.34	5516	552	5.66	585.52	591.18	584.08	592.98	8.90
105	582.74	5636	564	5.55	579.97	585.52	578.51	587.34	8.82
106	577.24	5753	575	5.45	574.53	579.97	573.06	581.80	8.74
107	571.84	5868	587	5.34	569.18	574.53	567.70	576.36	8.66
108	566.55	5980	598	5.25	563.94	569.18	562.44	571.02	8.58
109	561.35	6090	609	5.15	558.79	563.94	557.28	565.79	8.51
110	556.25	6197	620	5.06	553.73	558.79	552.21	560.64	8.43
111	551.24	6303	630	4.97	548.76	553.73	547.23	555.59	8.36
112	546.31	6406	641	4.88	543.89	548.76	542.35	550.63	8.29
113	541.48	6507	651	4.79	539.09	543.89	537.55	545.76	8.22
114	536.73	6607	661	4.71	534.39	539.09	532.83	540.98	8.15
115	532.06	6704	670	4.63	529.76	534.39	528.19	536.27	8.08
116	527.48	6799	680	4.55	525.21	529.76	523.64	531.65	8.01
117	522.97	6893	689	4.47	520.74	525.21	519.16	527.11	7.94

- **Image Quality: 0.87** arcsec at **λ = 600 nm (to be used for OB constraint set)**
  ☐ show details of the IQ calculations at **λ = 600** nm

- **Image Quality: 0.852** arcsec at the central wavelength **λ_c = 650** nm of the **RED** arm
  ☐ show details of the IQ calculations at **λ_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: **4** unbinned pixels/bin
  - Spectral (X) bin size: **2** unbinned pixels/bin
  - Digital pixel size in velocity: **0.5** km/s
  - The sky signal is integrated over : **40** unbinned spatial pixels (10 spatial bins)
  - Effective sky aperture: **4** arcsec^2

- **Detector parameters:**
  - Mode: **slow**, gain:**high**, binning:**4x2**
  - Gain (conversion factor): **1.1 e-/ADU**
  - Readout noise: **2 e-**, dark current: **2 e-/h**
  - Saturation limit: **72090 e-**
  - Linearity limit: **60500 e-**

☐ **Show detailed S/N formula**

Detected Counts Red Arm

	FSR Min Wavelength					Wavelength of central column								FSR Max Wavelength				
Order	**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	416	56.1	1.7e+02	16	784.45	0.0026	3.5	712	93	2.9e+02	23	5.1e+03	0	0	0	0	0
79	1.7	394	41.8	1.6e+02	16	774.52	0.0026	3.3	673	84.9	2.7e+02	22	5.4e+03	1.7	268	34.2	1.1e+02	12
80	2.2	512	60.1	2.1e+02	19	764.84	0.0025	4.4	878	107	3.5e+02	26	4e+03	2.2	351	48.5	1.4e+02	15
81	2.3	529	59.2	2.1e+02	19	755.40	0.0025	4.6	914	108	3.7e+02	26	3.8e+03	2.3	369	45.3	1.5e+02	15
82	2.4	557	64.3	2.2e+02	20	746.19	0.0025	4.8	964	111	3.9e+02	27	3.6e+03	2.4	390	46.7	1.6e+02	16
83	2.4	546	60.3	2.2e+02	20	737.19	0.0024	4.7	940	106	3.8e+02	27	3.7e+03	2.4	380	43.2	1.5e+02	16
84	2.4	564	55.3	2.3e+02	20	728.42	0.0024	4.9	972	106	3.9e+02	27	3.6e+03	2.4	393	44.8	1.6e+02	16
85	2.8	647	68.6	2.6e+02	22	719.85	0.0024	5.6	1.12e+03	118	4.5e+02	30	3e+03	2.8	457	51.8	1.8e+02	17
86	2.7	621	63.6	2.5e+02	21	711.48	0.0024	5.4	1.08e+03	111	4.3e+02	29	3.2e+03	2.7	442	45.5	1.8e+02	17
87	2.7	606	61.3	2.4e+02	21	703.30	0.0023	5.3	1.05e+03	106	4.2e+02	29	3.2e+03	2.7	433	43.8	1.7e+02	17
88	2.6	596	55.5	2.4e+02	21	695.31	0.0023	5.2	1.03e+03	102	4.2e+02	29	3.3e+03	2.6	424	42.3	1.7e+02	17
89	2.8	637	59.3	2.6e+02	22	687.50	0.0023	5.6	1.11e+03	106	4.5e+02	30	3.1e+03	2.8	455	45.4	1.8e+02	18
90	2.9	643	58.4	2.6e+02	22	679.86	0.0022	5.7	1.12e+03	104	4.5e+02	30	3e+03	2.9	464	43.9	1.9e+02	18
91	2.9	641	58.5	2.6e+02	22	672.39	0.0022	5.8	1.12e+03	101	4.5e+02	30	3e+03	2.9	465	42.5	1.9e+02	18
92	2.8	625	50.8	2.5e+02	21	665.08	0.0022	5.6	1.1e+03	97	4.4e+02	30	3.1e+03	2.8	456	41	1.8e+02	18
93	3.1	693	62	2.8e+02	23	657.93	0.0022	6.3	1.22e+03	106	4.9e+02	31	2.7e+03	3.2	509	46.5	2e+02	19
94	2.9	640	54.4	2.6e+02	22	650.93	0.0022	5.9	1.13e+03	96.5	4.5e+02	30	3e+03	2.9	473	39.7	1.9e+02	18
95	2.9	628	52.8	2.5e+02	21	644.08	0.0021	5.8	1.11e+03	93.4	4.5e+02	30	3e+03	2.9	466	39.4	1.9e+02	18
96	2.9	619	50.9	2.5e+02	21	637.37	0.0021	5.8	1.09e+03	91.2	4.4e+02	30	3.1e+03	2.9	459	38.5	1.8e+02	18
97	2.9	630	52.3	2.5e+02	22	630.80	0.0021	5.9	1.11e+03	93.3	4.5e+02	30	3e+03	3	469	39.9	1.9e+02	18
98	3	630	54	2.5e+02	22	624.36	0.0021	6	1.12e+03	93.8	4.5e+02	30	3e+03	3	471	39.7	1.9e+02	18
99	2.9	605	51.1	2.4e+02	21	618.05	0.002	5.8	1.07e+03	90.5	4.3e+02	29	3.1e+03	2.9	454	37.8	1.8e+02	18
100	2.9	599	50.5	2.4e+02	21	611.87	0.002	5.7	1.06e+03	89.9	4.3e+02	29	3.2e+03	2.9	451	38.2	1.8e+02	18
101	2.9	594	51	2.4e+02	21	605.81	0.002	5.8	1.05e+03	89.6	4.2e+02	29	3.2e+03	2.9	449	38	1.8e+02	17
102	2.8	575	49.6	2.3e+02	20	599.87	0.002	5.6	1.02e+03	87.1	4.1e+02	29	3.3e+03	2.8	436	36.7	1.8e+02	17
103	2.8	565	46.5	2.3e+02	20	594.05	0.002	5.6	1.01e+03	86	4e+02	28	3.4e+03	2.8	429	36.9	1.7e+02	17
104	2.9	589	52.5	2.4e+02	21	588.34	0.0019	5.9	1.05e+03	90.1	4.2e+02	29	3.2e+03	2.9	449	39	1.8e+02	17
105	2.7	548	46.9	2.2e+02	20	582.74	0.0019	5.5	977	84.2	3.9e+02	28	3.5e+03	2.8	419	35.3	1.7e+02	17
106	2.8	550	47.4	2.2e+02	20	577.24	0.0019	5.6	979	84.5	3.9e+02	28	3.5e+03	2.8	420	36.4	1.7e+02	17
107	2.8	545	46.9	2.2e+02	20	571.84	0.0019	5.6	971	83.7	3.9e+02	28	3.5e+03	2.8	417	35.9	1.7e+02	17
108	2.8	537	46.7	2.2e+02	20	566.55	0.0019	5.5	958	82.5	3.9e+02	27	3.6e+03	2.8	412	35.3	1.7e+02	17
109	2.7	518	45.5	2.1e+02	19	561.35	0.0019	5.4	927	79.7	3.7e+02	27	3.7e+03	2.7	399	33.9	1.6e+02	16
110	2.6	493	42.6	2e+02	19	556.25	0.0018	5.2	885	76.3	3.6e+02	26	3.9e+03	2.6	383	32.5	1.5e+02	16
111	2.6	483	42.9	1.9e+02	18	551.24	0.0018	5.2	867	75.1	3.5e+02	26	4e+03	2.6	376	32.3	1.5e+02	16
112	2.4	455	40.3	1.8e+02	18	546.31	0.0018	4.9	818	71.1	3.3e+02	25	4.2e+03	2.5	355	30.1	1.4e+02	15
113	2.4	433	38.6	1.7e+02	17	541.48	0.0018	4.7	779	68	3.1e+02	24	4.5e+03	2.4	338	29	1.4e+02	15
114	2.2	403	37.9	1.6e+02	16	536.73	0.0018	4.4	726	63.7	2.9e+02	23	4.9e+03	2.2	316	26.7	1.3e+02	14
115	1.7	301	50.1	1.2e+02	13	532.06	0.0018	3.4	543	47.8	2.2e+02	20	6.8e+03	1.7	237	16.9	95	11
116	0.67	120	4.87	48	6.9	527.48	0.0017	1.4	216	19.1	87	11	2.2e+04	0.68	94.2	6.33	38	5.7
117	2.4	426	37.4	1.7e+02	17	522.97	0.0017	4.9	768	68.3	3.1e+02	24	4.6e+03	2.4	336	49.5	1.4e+02	14

* *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: 4UTs**

- **Mode: multi MR 4x2 slow**
- **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 ≤ 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 l Min (nm)	FSR l Max (nm)	start wav (nm)	end wav (nm)	TS range (nm)
117	522.97	1121	112	4.47	520.74	525.21	519.08	526.97	7.89
118	518.54	1323	132	4.39	516.35	520.74	514.67	522.51	7.84
119	514.18	1520	152	4.32	512.03	516.35	510.34	518.12	7.79
120	509.89	1713	171	4.25	507.78	512.03	506.07	513.81	7.74
121	505.68	1901	190	4.18	503.60	507.78	501.89	509.57	7.69
122	501.53	2085	208	4.11	499.49	503.60	497.76	505.40	7.63
123	497.46	2265	226	4.04	495.44	499.49	493.71	501.29	7.58
124	493.44	2441	244	3.98	491.46	495.44	489.72	497.25	7.53
125	489.50	2613	261	3.92	487.55	491.46	485.80	493.28	7.48
126	485.61	2781	278	3.85	483.69	487.55	481.94	489.37	7.43
127	481.79	2947	295	3.79	479.90	483.69	478.14	485.52	7.38
128	478.02	3109	311	3.73	476.16	479.90	474.40	481.73	7.33
129	474.32	3267	327	3.68	472.49	476.16	470.72	478.00	7.28
130	470.67	3423	342	3.62	468.87	472.49	467.10	474.32	7.23
131	467.08	3575	358	3.57	465.30	468.87	463.52	470.70	7.18
132	463.54	3725	372	3.51	461.79	465.30	460.01	467.14	7.13
133	460.05	3871	387	3.46	458.33	461.79	456.55	463.63	7.08
134	456.62	4015	402	3.41	454.92	458.33	453.14	460.17	7.04
135	453.24	4157	416	3.36	451.57	454.92	449.78	456.77	6.99
136	449.91	4295	430	3.31	448.26	451.57	446.47	453.41	6.94
137	446.62	4431	443	3.26	445.00	448.26	443.20	450.10	6.90
138	443.39	4565	457	3.21	441.78	445.00	439.99	446.84	6.85
139	440.20	4697	470	3.17	438.62	441.78	436.82	443.63	6.80
140	437.05	4826	483	3.12	435.50	438.62	433.70	440.46	6.76
141	433.95	4952	495	3.08	432.42	435.50	430.62	437.34	6.72
142	430.90	5077	508	3.03	429.38	432.42	427.59	434.26	6.67
143	427.88	5199	520	2.99	426.39	429.38	424.60	431.22	6.63
144	424.91	5320	532	2.95	423.44	426.39	421.65	428.23	6.59
145	421.98	5438	544	2.91	420.53	423.44	418.74	425.28	6.54
146	419.09	5555	555	2.87	417.66	420.53	415.87	422.37	6.50
147	416.24	5669	567	2.83	414.83	417.66	413.04	419.50	6.46
148	413.43	5782	578	2.79	412.03	414.83	410.24	416.66	6.42
149	410.65	5892	589	2.76	409.28	412.03	407.49	413.87	6.38
150	407.91	6001	600	2.72	406.56	409.28	404.77	411.11	6.34
151	405.21	6108	611	2.68	403.88	406.56	402.09	408.39	6.30
152	402.55	6214	621	2.65	401.23	403.88	399.44	405.70	6.26
153	399.92	6318	632	2.61	398.61	401.23	396.83	403.05	6.22
154	397.32	6420	642	2.58	396.03	398.61	394.25	400.43	6.18
155	394.76	6520	652	2.55	393.49	396.03	391.71	397.85	6.14

156	392.23	6619	662	2.51	390.97	393.49	389.20	395.30	6.11
157	389.73	6717	672	2.48	388.49	390.97	386.72	392.78	6.07
158	387.26	6813	681	2.45	386.04	388.49	384.27	390.30	6.03
159	384.83	6908	691	2.42	383.62	386.04	381.85	387.85	6.00
160	382.42	7001	700	2.39	381.23	383.62	379.46	385.42	5.96
161	380.04	7093	709	2.36	378.87	381.23	377.10	383.03	5.92

- **Image Quality: 0.87** arcsec at **λ = 600 nm (to be used for OB constraint set)**
  ☐ show details of the IQ calculations at **λ = 600** nm

- **Image Quality: 0.936** arcsec at the central wavelength **λ_c = 450** nm of the **BLUE** arm
  ☐ show details of the IQ calculations at **λ_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: **4** unbinned pixels/bin
  - Spectral (X) bin size: **2** unbinned pixels/bin
  - Digital pixel size in velocity: **0.5** km/s
  - The sky signal is integrated over : **40** unbinned spatial pixels (10 spatial bins)
  - Effective sky aperture: **4** arcsec^2

- **Detector parameters:**
  - Mode: **slow**, gain:**high**, binning:**4x2**
  - Gain (conversion factor): **1.1 e-/ADU**
  - Readout noise: **3 e-**, dark current: **2 e-/h**
  - Saturation limit: **72090 e-**
  - Linearity limit: **60500 e-**

☐ **Show detailed S/N formula**

Detected Counts Blue Arm

	FSR Min Wavelength					**Wavelength of central column**								**FSR Max Wavelength**				
Order	**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***
117	2.1	372	37.4	1.5e+02	15	522.97	0.0017	4.3	672	68.3	2.7e+02	22	5.5e+03	2.1	294	49.4	1.2e+02	12
118	2.1	368	37.4	1.5e+02	15	518.54	0.0017	4.2	664	67.8	2.7e+02	21	5.6e+03	2.1	291	29.3	1.2e+02	12
119	2.1	365	37.3	1.5e+02	15	514.18	0.0017	4.3	661	67.8	2.7e+02	21	5.6e+03	2.1	290	29.8	1.2e+02	12
120	2.2	365	37.9	1.5e+02	15	509.89	0.0017	4.3	660	68.1	2.7e+02	21	5.6e+03	2.2	290	30	1.2e+02	12
121	2.1	356	36.8	1.4e+02	14	505.68	0.0017	4.3	645	66.8	2.6e+02	21	5.8e+03	2.1	283	29.2	1.1e+02	12
122	2.1	354	36.3	1.4e+02	14	501.53	0.0017	4.3	641	66.8	2.6e+02	21	5.8e+03	2.2	282	29.6	1.1e+02	12
123	2.2	357	37.4	1.4e+02	14	497.46	0.0016	4.4	648	68	2.6e+02	21	5.8e+03	2.2	286	30.3	1.2e+02	12
124	2.1	334	44	1.3e+02	14	493.44	0.0016	4.2	608	64.4	2.4e+02	20	6.2e+03	2.1	269	27	1.1e+02	12
125	1.5	236	20.1	95	11	489.50	0.0016	3	431	46.1	1.7e+02	16	9.3e+03	1.5	191	18.2	77	9.2
126	2.1	334	36.6	1.3e+02	14	485.61	0.0016	4.3	611	66.5	2.5e+02	20	6.2e+03	2.2	272	33.8	1.1e+02	12
127	2.1	326	36.3	1.3e+02	13	481.79	0.0016	4.2	595	65.8	2.4e+02	20	6.4e+03	2.1	265	29.1	1.1e+02	12
128	2.1	318	36	1.3e+02	13	478.02	0.0016	4.2	578	64.5	2.3e+02	20	6.6e+03	2.1	256	28.3	1e+02	11
129	2	307	34.3	1.2e+02	13	474.32	0.0016	4.1	560	62.6	2.3e+02	19	6.9e+03	2	248	27.5	1e+02	11

130	2.1	305	34.5	1.2e+02	13	470.67	0.0016	4.1	556	62.4	2.2e+02	19	6.9e+03	2.1	247	27.7	99	11
131	2	296	33.6	1.2e+02	13	467.08	0.0015	4.1	541	61.3	2.2e+02	19	7.1e+03	2	241	27.1	97	11
132	2	290	33.4	1.2e+02	12	463.54	0.0015	4.1	531	60.7	2.1e+02	19	7.3e+03	2	237	27	96	11
133	2	282	33.2	1.1e+02	12	460.05	0.0015	4	518	59.8	2.1e+02	18	7.5e+03	2	231	26.5	93	11
134	1.9	267	32.2	1.1e+02	12	456.62	0.0015	3.9	492	57.7	2e+02	18	8e+03	1.9	221	25.3	89	10
135	1.8	252	30.8	1e+02	11	453.24	0.0015	3.7	463	55.1	1.9e+02	17	8.6e+03	1.9	208	24.2	84	9.7
136	1.8	238	28.9	96	11	449.91	0.0015	3.5	437	52.9	1.8e+02	16	9.2e+03	1.8	197	23.3	79	9.3
137	1.7	233	29	94	11	446.62	0.0015	3.5	428	52.4	1.7e+02	16	9.5e+03	1.8	192	23.3	77	9.2
138	1.7	224	27.7	90	10	443.39	0.0015	3.4	412	50.9	1.7e+02	16	9.9e+03	1.7	185	22.6	75	8.9
139	1.6	213	30.5	86	9.9	440.20	0.0015	3.3	393	49	1.6e+02	15	1.1e+04	1.7	177	21.2	71	8.6
140	1.3	170	19	69	8.4	437.05	0.0014	2.7	315	39.5	1.3e+02	13	1.4e+04	1.4	142	16.7	57	7.3
141	1.6	199	26.1	80	9.4	433.95	0.0014	3.2	367	46.4	1.5e+02	15	1.1e+04	1.6	166	22.2	67	8.2
142	1.5	182	23	73	8.8	430.90	0.0014	3	336	42.6	1.4e+02	14	1.3e+04	1.5	152	18.8	61	7.7
143	1.5	176	23.2	71	8.6	427.88	0.0014	2.9	327	41.8	1.3e+02	13	1.3e+04	1.5	148	18.8	60	7.5
144	1.4	165	21.6	66	8.1	424.91	0.0014	2.8	306	39.5	1.2e+02	13	1.4e+04	1.4	139	17.6	56	7.1
145	1.3	157	21.1	63	7.8	421.98	0.0014	2.7	290	38	1.2e+02	12	1.5e+04	1.4	132	17	53	6.8
146	1.3	146	19.2	59	7.4	419.09	0.0014	2.5	270	35.7	1.1e+02	12	1.7e+04	1.3	123	15.9	49	6.5
147	1.3	150	17.6	61	7.6	416.24	0.0014	2.7	278	37	1.1e+02	12	1.6e+04	1.3	126	17.6	51	6.6
148	1.5	173	26.5	70	8.4	413.43	0.0014	3.1	320	42.7	1.3e+02	13	1.4e+04	1.6	145	20.1	59	7.4
149	1.2	130	18.6	52	6.7	410.65	0.0014	2.4	241	32.5	97	11	2e+04	1.2	110	13.1	44	5.9
150	1	113	15.9	45	6	407.91	0.0013	2.1	209	28.4	84	9.8	2.4e+04	1.1	95.6	12.2	39	5.3
151	0.97	103	14.4	42	5.6	405.21	0.0013	2	192	26.3	77	9.1	2.7e+04	0.98	87.6	11.6	35	4.9
152	0.93	97.6	13.4	39	5.3	402.55	0.0013	1.9	182	25.3	73	8.8	2.9e+04	0.95	83.1	11.4	34	4.7
153	0.93	95.2	14.2	38	5.2	399.92	0.0013	1.9	177	24.9	72	8.6	3e+04	0.94	81.1	11.2	33	4.6
154	0.81	82.1	12.4	33	4.6	397.32	0.0013	1.6	153	21.7	62	7.7	3.6e+04	0.82	70	9.33	28	4
155	0.74	73.4	10	30	4.2	394.76	0.0013	1.5	137	19.7	55	7	4.3e+04	0.75	62.7	8.78	25	3.7
156	0.76	74.5	12.6	30	4.2	392.23	0.0013	1.5	139	20.2	56	7.1	4.2e+04	0.77	63.7	9.11	26	3.7
157	0.57	54.8	8.58	22	3.2	389.73	0.0013	1.2	103	15.1	41	5.6	6.5e+04	0.58	47.1	6.08	19	2.8
158	0.49	46.5	7.94	19	2.8	387.26	0.0013	1	87	13	35	4.8	8.4e+04	0.5	40	5.5	16	2.4
159	0.38	35.1	5.89	14	2.2	384.83	0.0013	0.77	65.7	10	27	3.8	1.3e+05	0.39	30.3	4.05	12	1.9
160	0.31	27.9	4.93	11	1.7	382.42	0.0013	0.62	52.3	8.08	21	3.1	1.9e+05	0.31	24.1	3.33	9.7	1.5
161	0.23	20.8	3.84	8.4	1.3	380.04	0.0013	0.47	38.9	6.11	16	2.4	3.2e+05	0.24	17.9	2.44	7.2	1.1

* *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.*
