HESSI Grid Specifications

All linear dimensions in mm.

Collimator Length, L=1550 mm	1,550								
Detector Diameter, D=71 mm	71								
Collimator #	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Nominal FWHM Resolution (")	2.26	3.92	6.79	11.8	20.4	35.3	61.1	105.8	183.2
Angular Pitch (")	4.52	7.84	13.57	23.5	40.7	70.5	122.2	211.6	366.5
Pitch (mm)	0.034	0.059	0.102	0.177	0.306	0.530	0.918	1.590	2.754
Manufacturer	Tecomet	Tecomet	Tecomet	Tecomet	VBC	VBC	VBC	VBC	VBC
Slit (mm)	0.020	0.035	0.061	0.106	0.184	0.318	0.477	0.811	1.487
Slat (mm)	0.014	0.024	0.041	0.071	0.122	0.212	0.441	0.779	1.267
Maximum fractional transmission	0.60	0.60	0.60	0.60	0.60	0.60	0.52	0.51	0.54
Total collimator thickness (mm)	1.2	2.1	3.6	6.2	10.7	18.6	6.2	6.2	30.0
Field of View (°)	1.0	1.0	1.0	1.0	1.0	1.0	4.4	7.5	2.8
High-Z Absorber	Molybdenun	Tungsten	Tungsten	Tungsten	Tungsten	Tungsten	Tungsten	Tungsten	Tungsten
Diameter (mm)	90	90	90	90	90	90	90	90	90
Outer Diameter (mm)	110	110	110	110	110	110	110	110	110
Rim width (mm)	10	10	10	10	10	10	10	10	10
Rim Material	Molybdenun	Tungsten	Tungsten	Tungsten	Aluminum	Aluminum	Aluminum	Aluminum	Aluminum
Rim height	1.2	2.1	3.6	6.2	20.7	28.6	16.2	16.2	40.0
Shape	Round	Round	Round	Round	Square	Square	Square	Square	Square
Mass (g)	136	240	394	679	1006	1637	708	723	2700
Grid Imperfection (mm)	0.0015	0.0025	0.004	0.005	0.006	0.008	0.012	0.017	0.025
Rel.Mod.Eff. (grids)	0.922	0.928	0.938	0.968	0.985	0.991	0.993	0.995	0.997
Grid Matching {(1+m):1}	0.005%	0.010%	0.020%	0.025%	0.030%	0.045%	0.070%	0.10%	0.15%
Rel.Mod.Eff. (matching)	0.987	0.982	0.976	0.988	0.994	0.996	0.996	0.998	0.998
Relative Twist (arcmin)	0.333	0.5	0.6	1	1.6	2.5	4	6	10
Rel.Mod.Eff. (twist)	0.949	0.962	0.982	0.983	0.986	0.988	0.990	0.993	0.993
RMS Rel.Aspect Error(arcsec)	0.426	0.426	0.426	0.426	0.426	0.426	0.426	0.426	0.426
Rel.Mod.Eff. (aspect)	0.823	0.941	0.980	0.993	0.998	0.999	1.000	1.000	1.000
Camber (mm)	0.001	0.002	0.003	0.003	0.004	0.007	0.01	0.01	0.02
Camber Effect	0.0147	0.0170	0.0147	0.0085	0.0065	0.0066	0.0054	0.0031	0.0036
Venetian Blinding (mm)	0.002	0.003	0.007	0.01	0.015	0.02	0.02	0.02	0.04
Venetian Effect	0.0588	0.0509	0.0686	0.0566	0.0490	0.0377	0.0218	0.0126	0.0145
Slit Width (mm)	0.0015	0.004	0.007	0.01	0.015	0.02	0.02	0.02	0.04
Slit Width Effect	0.0441	0.0679	0.0686	0.0566	0.0490	0.0377	0.0218	0.0126	0.0145
Tilt (arcmin)	6	6	6	6	6	6	6	6	6
Tilt Effect	0.0616	0.0623	0.0616	0.0613	0.0611	0.0613	0.0118	0.0068	0.0190
Source Location (arcmin)	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5
Source Location Effect	0.0873	0.0882	0.0873	0.0868	0.0865	0.0868	0.0167	0.0096	0.0269
Pointing Error (arcmin)	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
Pointing Error Effect	0.0411	0.0415	0.0411	0.0408	0.0407	0.0408	0.0079	0.0045	0.0127
RMS Change in Transmission	0.14	0.14	0.15	0.14	0.13	0.13	0.04	0.02	0.04
Nominal Transmission	0.6	0.6	0.6	0.6	0.6	0.6	0.52	0.51	0.54
Resulting Transmission	0.46	0.46	0.45	0.46	0.47	0.47	0.48	0.49	0.50
Waveform Factor (Fw)	0.987	0.981	0.975	0.985	0.989	0.993	0.997	0.999	1.000
Rel.Mod.Eff. (grids)	0.922	0.928	0.938	0.968	0.985	0.991	0.993	0.995	0.997
Rel.Mod.Eff. (matching)	0.987	0.982	0.976	0.988	0.994	0.996	0.996	0.998	0.998
Rel.Mod.Eff. (twist)	0.949	0.962	0.982	0.983	0.986	0.988	0.990	0.993	0.993
Rel.Mod.Eff. (aspect)	0.823	0.941	0.980	0.993	0.998	0.999	1.000	1.000	1.000
Waveform Factor (Fw)	0.987	0.981	0.975	0.985	0.989	0.993	0.997	0.999	1.000
MODULATION EFFICIENCY	**70.1%**	**80.9%**	**85.9%**	**91.9%**	**95.2%**	**96.8%**	**97.6%**	**98.4%**	**98.8%**
FWHM Resolution (")	2.26	3.92	6.79	11.76	20.36	35.27	61.08	105.80	183.24
Collimator #	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**