

HESSI Instrument Power Breakdown
 HSI_SYS_006M
 2000-9-12 D.W.Curtis

Table 2: Dissipation Summary (all services) W

Mode	IDPU	IPC	CPC	Spec	RAS	Imager	Total	
Total Power Dissipation by Mode (Nominal)								
Cool-Down	7.90	8.08	12.56	101.60	0.00	0.00	130.14	0% Cold Plate Heater
Safe	7.90	10.17	3.36	0.00	0.00	0.00	21.43	
Standby	7.90	11.28	8.90	77.60	0.00	5.00	110.68	
Normal	28.21	16.56	8.90	77.60	1.93	9.12	142.32	Normal + 100W to cryocooler
Contingency	28.21	16.56	12.56	107.20	1.93	9.12	175.58	
Total Power Dissipation by Mode (w/Margin)								
Cool-Down	8.32	9.48	15.24	107.28	0.00	0.00	140.32	33% Cold Plate Heater
Safe	8.32	10.35	4.20	0.00	0.00	0.00	22.87	
Standby	8.32	11.58	10.83	78.66	0.00	10.00	119.39	
Normal	29.70	17.15	10.83	78.66	2.06	14.40	152.81	(Shutters enabled)
Contingency	29.70	17.15	15.24	108.16	2.06	14.40	186.72	

Table 3: Consumption Summary (All units), W

Mode	IDPU	Cryo	Switched	Total,W	
Total Power Consumption by Mode (Nominal)					
Cool-Down	15.98	114.16		130.14	0% Cold Plate Heater
Safe	18.07	3.36		21.43	
Standby	24.79	80.90	5.00	110.68	
Normal	56.42	80.90	5.00	142.32	
Normal	56.42	114.16	5.00	175.58	
Total Power Consumption by Mode (w/Margin)					
Cool-Down	23.08	117.24		140.32	33% Cold Plate Heater
Safe	18.67	4.20		22.87	
Standby	26.06	83.33	10.00	119.39	
Normal	59.47	83.33	10.00	152.81	
Contingency	59.47	117.24	10.00	186.72	
Peak	59.47	117.24	62.5		

ICD MAX = 185 W Orbit average, not-to-exceed, per John Jordan, 99-11-4

Table 4: Peak Current and Spacecraft Limiters, Amps

Service:	IDPU	Cryo	Switched	IDPU Htr	
Peak Usage	2.48	4.89	2.60	4.72	IDPU, Cryo, & Switched is peak load at 24V, Heater is at 34V
Breaker, 40ms	5.00	10.50	5.00	7.50	+/- 0.5A
Limit, Inst.	20.00	20.00	20.00	20.00	+/- 1A

NOTE: Cryo is RMS power. The current has almost 100% ripple at 120Hz