

GEN 1500W SPECIFICATIONS

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09/07/2006  
N.L.K. R&D

OUTPUT RATING

MODEL	GEN	6-200	8-180	12.5-120	20-76	30-50	40-38	50-30	60-25	80-19	100-15	150-10	300-5	600-2.6	REV.
1. Rated output voltage (*1)	V	6	8	12.5	20	30	40	50	60	80	100	150	300	600	A
2. Rated output current (*2)	A	200	180	120	76	50	38	30	25	19	15	10	5	2.6	A
3. Rated output power	W	1200	1440	1500	1520	1500	1520	1500	1500	1520	1500	1500	1500	1560	A

INPUT CHARACTERISTICS

	V	6	8	12.5	20	30	40	50	60	80	100	150	300	600		
1. Input voltage/freq. (*3)	---	85~265Vac continuous, 47~63Hz, single phase.														A
2. Input current (at 100/200Vac)	A	21/11														A
3. Power Factor	---	0.99@100/200Vac, rated output power.														
4. Efficiency (*4)	%	77/79	78/81	82/85	83/86	83/86	84/88	84/88	84/88	84/88	84/88	84/88	84/88	84/88	A	
5. Inrush current at 100/200V	A	Less than 50A														A

CONSTANT VOLTAGE MODE

	V	6	8	12.5	20	30	40	50	60	80	100	150	300	600		
1. Max. Line regulation (*5)	---	0.01% of rated output voltage +2mV														A
2. Max. Load regulation (*6)	---	0.01% of rated output voltage +2mV														
3. Ripple and noise (p-p, 20MHz) (*10)	mV	60	60	60	60	60	60	60	60	80	80	100	150	300	A	
4. Ripple r.m.s. 5Hz~1MHz (*10)	mV	8	8	8	8	8	8	8	8	8	8	10	25	60	A	
5. Temperature coefficient	PPM/°C	100PPM/°C from rated output voltage, following 30 minutes warm-up.														
6. Temperature drift	---	0.05% of rated Vout over 8hrs interval following 30 minutes warm-up. Constant line, load & temp.														
7. Rem. sense compensation/wire	V	1	1	1	1	1.5	2	2	3	4	5	5	5	5	A	
8. Up-prog. Response time, 0~Vomax (*9)	mS	80														A
9. Down-prog. response time:	Full load	10	50				80				150				250	A
	No load	500	600	700	800	900	1000	1100	1100	1200	1500	2000	2500	4000	A	
10. Transient response time	mS	Time for output voltage to recover within 0.5% of its rated output for a load change 10~90% of rated output current. Output set-point: 10~100%. Less than 1mS, for models up to and including 100V. 2mS, for models above 100V.														
11. Hold-up time	mS	More than 20mS, 100Vac, rated output power.														

CONSTANT CURRENT MODE

	V	6	8	12.5	20	30	40	50	60	80	100	150	300	600		
1. Max. Line regulation (*5)	---	0.01% of rated output current +2mA														A
2. Max. Load regulation (*7)	---	0.02% of rated output current +5mA														
3. Ripple r.m.s. 5Hz~1MHz: (*8)	mA	400	360	240	152	125	95	85	75	57	45	35	25	12	A	
4. Temperature coefficient	PPM/°C	100PPM/°C from rated output current, following 30 minutes warm-up.														
5. Temperature drift	---	0.05% of rated Iout over 8hrs. interval following 30minutes warm-up. Constant line, load & temperature.														
6. Warm up drift	---	Less than 0.1% of rated output current over 30 minutes following power on or output voltage change or load current change														B

ANALOG PROGRAMMING AND MONITORING

1. Vout voltage programming	---	0~100%, 0~5V or 0~10V, user select. Accuracy and linearity: +/-0.5% of rated Vout.														
2. Iout voltage programming	---	0~100%, 0~5V or 0~10V, user select. Accuracy and linearity: +/-1% of rated Iout.														
3. Vout resistor programming	---	0~100%, 0~5/10Kohm full scale, user select. Accuracy and linearity: +/-1% of rated Vout.														
4. Iout resistor programming	---	0~100%, 0~5/10Kohm full scale, user select. Accuracy and linearity: +/-1.5% of rated Iout.														
5. On/off control	---	By electrical Voltage: 0~0.6V/2~15V or dry contact, user selectable logic.														
6. Output current monitor	---	0~5V or 0~10V, user selectable. Accuracy: 1%.														
7. Output voltage monitor	---	0~5V or 0~10V, user selectable. Accuracy: 1%.														
8. Power supply OK signal	---	4~5V-OK, 0V-Fail. 500ohm series resistance.														
9. Parallel operation	---	Possible, up to 4 units in master/slave mode with single wire current balance connection.														
10. Series operation	---	Possible (with external diodes), up to 2 units.														
11. CV/CC indicator	---	CV: TTL high (4~5V), source current: 10mA, CC: TTL low (0-0.6V), sink current: 10mA.														
12. Enable/Disable	---	Dry contact. Open: off, Short: on. Max. voltage at Enable/Disable in: 6V.														
13. Local/Remote analog Control	---	By electrical signal or Open/Short: 0~0.6V or short: Remote, 4~5V or open: Local														
14. Local/Remote analog Indicator	---	Open collector. Local: Open, Remote: On. Maximum voltage: 30V, maximum sink current: 5mA														

PROGRAMMING AND READBACK (RS232/485, Optional IEEE Interface)

1. Vout programming accuracy	---	0.05%+0.05% of rated output voltage														
2. Iout programming accuracy	---	0.1%+0.1% of rated output current														
3. Vout programming resolution	---	0.012% of full scale														
4. Iout programming resolution	---	0.012% of full scale														
5. Vout readback accuracy	---	0.1%+0.1% of rated output voltage														
6. Iout readback accuracy	---	0.1%+0.3% of rated output current														
7. Vout readback resolution	---	0.012% of full scale														
8. Iout readback resolution	---	0.012% of full scale														

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# GEN 1500W SPECIFICATIONS

PROTECTIVE FUNCTIONS	V	6	8	12.5	20	30	40	50	60	80	100	150	300	600	REV.	
	1.Foldback protection	---	Output shut-down when power supply change from CV to CC. User presetable.													
2.Over-voltage protection	---	Inverter shut-down, manual reset by AC input recycle or by OUT button or by communication port command.														
3.Over -voltage trip point	V	0.5~7.5	0.5~10	1~15	1~24	2~36	2~44	5~57	5~66	5~88	5~110	5~165	5~330	5~660	A	
4.Output under voltage limit	---	Preset by front panel or communication port. Prevents from adjusting Vout below limit. Raises the PS_OK signal in case of output voltage is below limit.														
5.Over temperature protection	---	User selectable, latched or non latched.														

## FRONT PANEL

1.Control functions	---	Vout/Iout manual adjust by separate encoders (coarse and fine adjustment).														
	---	OVP/UVL manual adjust by Vout. Adjust encoder.														
	---	Address selection by Voltage Adjust encoder. No of address:31.														
	---	Go to local control.														
	---	Output on/off														
	---	AC on/off														
	---	Front panel lock														
	---	Foldback control														
	---	Baud rate selection: 1200, 2400, 4800, 9600 and 19200.														
	---	Re-start modes (automatic restart, safe mode).														
2.Display	---	Vout:	4 digits, accuracy: 0.5%+/-1 count.													
	---	Iout:	4 digits, accuracy: 0.5%+/-1 count.													
3.Indications	---	VOLTAGE, CURRENT, ALARM, FINE, PREVIEW, FOLDBACK, LOCAL, OUTPUT ON.														

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## ENVIRONMENTAL CONDITIONS

1.Operating temperature	---	0~50°C, 100% load.														
2.Storage temperature	---	-20~70°C														
3.Operating humidity	%	30~90% RH (no condensation).														
4.Storage humidity	%	10~95% RH (no condensation).														
5.Altitude	---	Maximum 3000m. Derate output current by 2%/100m above 2000m. Alternatively, derate maximum ambient temperature by 1°C/100m above 2000m.														

## MECHANICAL

1.Cooling	---	Forced air cooling by internal fans.														
2.Weight	Kg	Less than 8.5Kg.														A
3.Dimensions (WxHxD)	mm	W: 422.8, H: 43.6, D: 432.8 (Refer to Outline drawing).														
4.Vibration	---	MIL-810E, method 514.4, test condition I-3.3.1														
5.Shock	---	Less than 20G, half sine, 11mS. Unit is unpacked.														

## SAFETY/EMC

1.Applicable standards:	Safety	---	UL60950 listed, EN60950. Vouts<60V: Output is SELV, IEEE/Isolated analog are SELV. 60<Vout<400V: Output is hazardous, IEEE/Isolated analog are SELV. 400<Vouts<600V: Output is hazardous, IEEE/Isolated analog are not SELV.													
	EMC	---	EN55024													
2.Withstand voltage	---	Vouts60V models: Input-Outputs (SELV): 3.0KVrms 1min, Input-Ground: 2.0KVrms 1min., 60<Vouts<600V models: Input-Haz. Output: 2.5KVrms 1min, Input-SELV: 3KVrms 1min, Hazardous Output-SELV: 1.9KVrms 1min, Hazardous Output-Ground: 1.9KVrms 1min, Input-Ground: 2.0KVrms 1min.														
3. Insulation resistance	---	More than 100Mohm at 25°C, 70%RH.														
4. Conducted emission	---	EN55022B, FCC part 15-B, VCCI-2														
5. Radiated emission	---	EN55022A, FCC part 15-A, VCCI-1														

## NOTES:

- \*1: Minimum voltage is guaranteed to maximum 0.2% of rated output voltage.
- \*2: Minimum current is guaranteed to maximum 0.4% of rated output current.
- \*3: For cases where conformance to various safety standards (UL, IEC, etc...) is required, to be described as 100-240Vac (50/60Hz).
- \*4: At 100/200Vac input voltage and maximum output power.
- \*5: From 85~132Vac or 170~265Vac, constant load.
- \*6: From No-Load to Full-Load, constant input voltage. Measured at the sensing point in Remote Sense.
- \*7: For load voltage change, equal to the unit voltage rating, constant input voltage.
- \*8: For 6V models the ripple is measured at 2~6V output voltage and full output current. For other models, the ripple is measured at 10~100% output voltage and full output current.
- \*9: With rated, resistive load.
- \*10 For 6V~300V models: Measured with JEITA RC-9131A (1:1) probe. For 600V model: Measured with 10:1 probe.

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