

Liebert has re-invented the double-conversion UPS. The Npower is the result of an international design collaboration and more than a decade of advanced research.



Every aspect of the Npower shows careful design and attention to detail. The rugged powertrain and advanced ActiveStar™ controls were subjected to computer simulations and thermal analysis to ensure reliable performance in every environment.

Even the physical packaging is uniquely efficient, to make fully configured systems more compact than other products on the market.

Best of all, it's a Liebert product—designed to give the same million-hour critical bus MTBF as its older brothers.

- Unmatched heritage of reliability and availability
- Smallest system footprint
- Excellent efficiency with non-linear loads and partial loads
- Outstanding dynamic response
- All-digital ActiveStar™ controls and graphical user interface

## LIEBERT NPOWER™ 3-PHASE UPS: 30-130kVA, 60 Hz, 220 OR 240VAC

### General Specifications

INPUT	
<b>Voltage</b>	220 or 240VAC, 60 Hz 3-phase, 3- or 4-wire plus ground
<b>Voltage Range</b>	+10, -15% (no battery discharge at -20%)
<b>Frequency Range</b>	60 Hz, ±5
<b>Current Distortion</b>	10% maximum reflected THD at full load with optional input filter; 30% THD without filter
<b>Current Limit</b>	115% of full load input current
<b>Current Walk-in</b>	20 seconds to full load
<b>Power Factor</b>	0.80 lagging minimum at full load; up to 0.96 lagging at full load with optional input filter
<b>Surge Protection</b>	Sustains input surges without damage, per criteria listed in ANSI C62.41-1980 (IEEE 587)
ENVIRONMENTAL	
<b>Operating Temperature</b>	<b>UPS:</b> 32° to 104°F (0-40°C) <b>Battery:</b> 68° to 86°F (20-30°C)
<b>Non-Operating Temp.</b>	-4° to 158°F (-20° to 70°C)
<b>Relative Humidity</b>	0-95% non-condensing
<b>Operating Altitude</b>	Up to 6600 ft. (2000m) without derating
<b>Acoustical Noise</b>	Less than 65 dBA typical, measured 3.3 ft. (1m) from the unit
OUTPUT	
<b>Voltage</b>	208, 220 or 480VAC 4-wire plus ground
<b>Voltage Adjustment Range</b>	±5%
<b>Voltage Regulation</b>	±0.5% for balanced load ±1.0% for 100% unbalanced load
<b>Dynamic Regulation</b>	±5% deviation for 100% load step ±1% for loss or return of AC input
<b>Transient Response Time</b>	Recover to ±1% of steady state within 1 cycle
<b>Voltage Distortion</b>	For linear loads, 1% THD; less than 2.5% THD for 100% nonlinear loads w/o kVA/kW derating
<b>Phasing Balance</b>	120° ±0.5° for balanced load. 120° ±1° for 100% unbalanced load
<b>Frequency Regulation</b>	±0.1%
<b>Load Power Factor Range</b>	1.0 to 0.7 lagging without derating
<b>Overload</b>	125% of full load for 10 minutes 150% for 1 minute w/ true sinusoidal waveform
STANDARDS	
ETL listed to UL 1778 UPS standards and CSA certified. Meets current requirements for safe high performance UPS operation.	

### Npower Matching Battery Cabinet

Model	Run Time (minutes) for kVA:							Dimensions WxDxH, in. (mm)	Weight lb. (kg)
	30	40	50	65	80	100	130		
1FJ	12	7	-	-	-	-	-	25x32.5x71 (635x825x1800)	1,600 (725)
1HJ	21	14	10	7	5	-	-		1,800 (815)
1LJ	28	20	14	8	5	-	-		2,350 (1,065)
1MJ	36	25	18	12	8	5	-		2,350 (1,065)
1PJ	53	38	28	20	15	10	-		3,000 (1,360)
1PJ(130)	-	-	-	-	-	-	7	49x32.5x71 (1250x825x1800)	3,350 (1,520)
1RJ	62	45	34	25	19	13	9		3,700 (1,680)
1UJ	72	52	39	30	23	17	12		4,000 (1,815)
1WJ	104	74	55	40	33	25	16		5,050 (2,290)
2PJ	126	83	67	50	38	28	-		(2) 25x32.5x71 635x825x1800
2PJ(130)	-	-	-	-	-	-	20	(2) 49x32.5x71 (1250x825x1800)	6,700 (3,040)
2RJ	144	104	76	55	45	35	25		7,400 (3,360)
2UJ	156	111	90	67	52	40	30		8,000 (3,630)
2WJ	-	-	-	97	74	55	40		10,100 (4,580)
3PJ	204	145	108	78	63	48	-	(3) 25x32.5x71 635x825x1800	9,000 (4,080)
3PJ(130)	-	-	-	-	-	-	35	(3) 49x32.5x71 (1250x825x1800)	10,050 (4,560)
3RJ	223	161	129	94	72	54	39		11,100 (5,040)
3UJ	265	187	142	105	81	65	48		12,000 (5,445)
3WJ	421	302	217	157	124	94	69		15,150 (6,870)
4PJ	301	206	154	111	90	68	-	(4) 25x32.5x71 635x825x1800	12,000 (5,440)
4PJ(130)	-	-	-	-	-	-	50	(4) 49x32.5x71 1250x825x1800	13,400 (6,080)
4RJ	329	224	182	134	102	77	55		14,800 (6,720)
4UJ	377	266	201	147	111	91	67		16,000 (7,260)
4WJ	480	423	320	222	180	135	97		20,200 (9,160)

### Maintenance Bypass Cabinets

Model	Dimensions WxDxH, in. (mm)	Weight, lb. (kg) for kVA:		
		30-50	65-80	100-130
L or N	25x32.5x71 (635x825x1800)	660 (299)	750 (340)	800 (363)
P or Q	31.7x32.5x71 (805x825x1800)	1,210 (549)	1,320 (599)	1,540 (699)

### Slim-Line Distribution Cabinet

kVA	Dimensions	Weight
	WxDxH, in. (mm)	lb. (kg)
All	10x32.5x71 (254x825x1800)	250 (113)

## Site Planning Data, Liebert Npower: 30-130kVA, 60 Hz, 220 or 240VAC

UPS Rating	Voltage		Standard AC Input			AC Input w/Filter Opt.			Battery			AC Output		Mechanical Data					
			Current (A)		Rec. OCPD	Current (A)		Rec. OCPD	Nom. VDC	Battery kW	Max. Discharge	Current		Dimensions WxDxH, in. (mm)	Weight lb. (kg)	Floor Loading lb./ft <sup>2</sup> (kg/m <sup>2</sup> )	Heat Dis. BTU/h (kWH)	Cooling Air CFM (m <sup>3</sup> /h)	
kVA	kW	Input	Output	Nom.	Max.		Nom.	Max.				Nom	OCPD						
30	24	220	208	87	108	150	75	94	125	480	26	66A	83	125	31.7x32.5x71 (805x825x1800)	2,100 (953)	294 (1435)	8500 (2.5)	720 (1223)
30	24	220	220	87	108	150	75	94	125	480	26	66A	79	100					
30	24	240	208	79	99	125	69	86	125	480	26	66A	83	125					
30	24	240	240	79	99	125	69	86	125	480	26	66A	72	100	31.7x32.5x71 (805x825x1800)	2,200 (998)	307 (1499)	11,000 (3.2)	720 (1223)
40	32	220	208	115	144	175	100	125	150	480	34	88A	111	150					
40	32	220	220	115	144	175	100	125	150	480	34	88A	105	150					
40	32	240	208	106	132	175	92	115	150	480	34	88A	111	150					
40	32	240	240	106	132	175	92	115	150	480	34	88A	96	125	31.7x32.5x71 (805x825x1800)	2,200 (998)	307 (1499)	14,000 (4.1)	720 (1223)
50	40	220	208	144	180	225	125	157	200	480	43	109A	139	175					
50	40	220	220	144	180	225	125	157	200	480	43	109A	131	175					
50	40	240	208	132	165	200	115	144	175	480	43	109A	139	175					
50	40	240	240	132	165	200	115	144	175	480	43	109A	120	150					
65	52	220	208	183	229	300	161	202	250	480	55	141A	180	225	39.4x32.5x71 (1001x825x1800)	2,500 (1134)	281 (1372)	18,000 (5.3)	960 (1631)
65	52	220	220	183	229	300	161	202	250	480	55	141A	171	225					
65	52	240	208	168	210	250	148	185	225	480	55	141A	180	225					
65	52	240	240	168	210	250	148	185	225	480	55	141A	156	200					
80	64	220	208	225	281	350	198	248	300	480	68	174A	222	300	39.4x32.5x71 (1001x825x1800)	2,500 (1134)	281 (1372)	22,000 (6.4)	960 (1631)
80	64	220	220	225	281	350	198	248	300	480	68	174A	210	300					
80	64	240	208	206	258	350	182	227	300	480	68	174A	222	300					
80	64	240	240	206	258	350	182	227	300	480	68	174A	192	250					
100	80	220	208	280	350	450	247	308	400	480	85	218A	278	350					
100	80	220	220	280	350	450	247	308	400	480	85	218A	262	350	49.2x32.5x71 (1250x825x1800)	3,350 (1520)	302 (1474)	26,000 (7.6)	1440 (2447)
100	80	240	208	256	321	400	226	283	350	480	85	218A	278	350					
100	80	240	240	256	321	400	226	283	350	480	85	218A	241	300					
130	104	220	208	364	455	600	321	401	500	480	111	283A	361	450	49.2x32.5x71 (1250x825x1800)	3,350 (1520)	302 (1474)	33,000 (9.7)	1440 (2447)
130	104	220	220	364	455	600	321	401	500	480	111	283A	341	450					
130	104	240	208	333	417	500	294	368	450	480	111	283A	361	450					
130	104	240	240	333	417	500	294	368	450	480	111	283A	313	400					
See Notes for Table (below):				1	2,3,8,12	6	1	2,3,8,12	6	4	—	1,3,5,8,12	1,3,8,12	6	13	13, 14	—	—	—

### Notes for Table

- Nominal (Nom) current is based on full rated output load.
- Maximum (Max) current (125% of nominal) is short duration for battery recharge conditions.
- UPS input and bypass cables must be run in separate conduit from output cables.
- Nominal battery voltage is shown at 2.0 volts/cell per NEC 480-2.
- Power cables from UPS DC link to batteries should be sized for a total maximum 2.0V line drop (measured at the UPS) at maximum discharge current.
- OCPD=Overcurrent Protection Device. Recommended AC input and AC output overcurrent protection represents 125% of nominal full load current (continuous) per NEC 215.
- Minimum-sized grounding conductors to be per NEC 250-122. Parity-sized ground conductors are recommended. Neutral conductors to be sized for full capacity per NEC 310-15(b)(4). References are per NEC 1999.
- Wiring requirements:  
AC Input and Output: 3-phase, 3- or 4-wire plus ground, depending on UPS configuration. See installation manual and submittal drawings for specific instructions. DC Input: 2-wire (positive and negative), plus ground.
- All wiring is to be in accordance with national and local electrical codes.

- Minimum access clearance is 3 ft. (0.9m) front and 1 ft. (0.3m) above UPS.
- Top or bottom cable entry through removable access plates. Punch plate to suit conduit size, then replace.
- Control wiring and power wiring must be run in separate conduit.
- Weights and dimensions shown do not include ancillary cabinets or other options.
- Add 560 lb. (254kg) for 100-130kVA unit with dual input and isolated 208VAC output.
- Backup emergency generator must be properly sized and equipped with an isochronous governor (generator frequency regulation) and a UPS-compatible voltage regulator.
- An on-site automatic transfer switch should be equipped with auxiliary contacts for UPS "on generator" current limit. Refer to Liebert publication 91K-PLT-48-02.
- An external isolated maintenance bypass circuit might cause utility AC input to be out of phase with the UPS AC output.

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