

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, 208 OR 480VAC

### General Specifications

INPUT	
<b>Voltage</b>	208 or 480VAC, 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 or 480VAC 3-phase, 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, 208 or 480VAC

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.	Rec. OCPD	Nom.	Max.	Rec. OCPD	Nom.	Max.	Nom.	OCPD	Nom.					
30	24	208	208	92	114	150	80	99	125	480	26	66A	83	125	31.7x32.5x71 (805x825x1800)	2100 (953)	294 (1435)	8,500 (2.5)	720 (1223)
30	24	480	208	38	48	60	33	41	50	480	26	66A	83	125		1850 (839)	259 (1265)	7,500 (2.2)	
30	24	480	480	38	48	60	33	41	50	480	26	66A	36	50		2200 (998)	307 (1499)	11,000 ((3.2)	
40	32	208	208	122	153	200	106	133	175	480	34	88A	111	150	31.7x32.5x71 (805x825x1800)	2200 (998)	307 (1499)	11,000 ((3.2)	720 (1223)
40	32	480	208	51	64	80	44	55	70	480	34	88A	111	150		1900 (862)	266 (1299)	10,000 (2.9)	
40	32	480	480	51	64	80	44	55	70	480	34	88A	48	60		2200 (998)	307 (1499)	14,000 (4.1)	
50	40	208	208	153	191	250	133	166	200	480	43	109A	139	175	31.7x32.5x71 (805x825x1800)	2200 (998)	307 (1499)	12,000 (3.5)	720 (1223)
50	40	480	208	64	80	100	55	69	100	480	43	109A	139	175		1900 (862)	266 (1299)	12,000 (3.5)	
50	40	480	480	64	80	100	55	69	100	480	43	109A	60	80		2500 (1134)	281 (1372)	18,000 (5.3)	
65	52	208	208	193	242	300	171	213	300	480	55	141A	180	225	39.4x32.5x71 (1001x825x1800)	2500 (1134)	281 (1372)	15,000 (4.4)	960 (1631)
65	52	480	208	80	99	125	70	88	125	480	55	141A	180	225		2150 (975)	242 (1182)	15,000 (4.4)	
65	52	480	480	80	99	125	70	88	125	480	55	141A	78	10		2500 (1134)	281 (1372)	22,000 (6.4)	
80	64	208	208	238	298	400	210	262	350	480	68	174A	222	300	39.4x32.5x71 (1001x825x1800)	2500 (1134)	281 (1372)	18,000 (5.3)	960 (1631)
80	64	480	208	98	122	150	87	108	150	480	68	174A	222	300		2150 (975)	242 (1182)	18,000 (5.3)	
80	64	480	480	98	122	150	87	108	150	480	68	174A	96	125		2150 (975)	242 (1182)	18,000 (5.3)	
100	80	208	208	296	370	450	261	326	400	480	85	218A	278	350	49.2x32.5x71 (1250x825x1800)	3350 (1520)	302 (1474)	26,000 (7.6)	1440 (2447)
100	80	480	208	122	152	200	108	135	175	480	85	218A	278	350		2800 (1270)	252 (1230)	21,000 (6.1)	
100	80	480	480	122	152	200	108	135	175	480	85	218A	120	150		2800 (1270)	252 (1230)	21,000 (6.1)	
130	104	208	208	385	481	600	336	420	500	480	111	283A	361	450	49.2x32.5x71 (1250x825x1800)	3350 (1520)	302 (1474)	33,000 (9.7)	1440 (2447)
130	104	480	208	158	198	250	140	175	225	480	111	283A	361	450		2800 (1270)	252 (1230)	27,000 (7.9)	
130	104	480	480	158	198	250	140	175	225	480	111	283A	156	200		2800 (1270)	252 (1230)	27,000 (7.9)	
<b>See Notes for Table (below):</b>				1	2,3,8,12	6,14	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 battery cabinet, Slim-Line distribution cabinet 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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