

Project _____
Catalogue n° _____

Type _____
Date _____

ILLUMINATOR NVJ THREE PHASE INVERTER

The Illuminator NVJ three phase emergency lighting inverter provides up to 50kW of backup power for larger facilities and campuses.



FEATURES & SPECIFICATIONS

STANDARD FEATURES

- 98% Efficient (Typical)
- PWM/IGBT Technology & Microprocessor Control
- Internal Maintenance Bypass
- User Programmable with Password Protection
- Automatic Event & Alarm Log
- RS232 Communications Port
- Input Circuit Breaker
- Low Audible Noise
- 65kAIC Withstanding Rating

OPTIONAL FEATURES

- Enhanced Communications
 - Expanded Building Management Protocols
 - BACnet or Modbus Communications Interface
 - IoT Connect Cloud Software
- External Maintenance Bypass
- Status Monitoring Dry Form C Contacts
- Summary Dry Form C Contacts
- Output Circuit Breakers
 - 4 800 - 16 700 W: up to 8 supervised poles, additional 19 with a top enclosure
 - 24 000 - 50 000 W: up to 30 supervised poles
- Remote Meter Panel

SPECIFICATIONS

- Input 120/208, 277/480, 347/600 VAC 3-Phase 4 Wire Wye Configuration
- Output 120/208, 277/480, 347/600 VAC 3-Phase Wye Or Delta Configuration
- Output Load Power Factor .5 Lag to .5 Lead
- LED, Electronic & Magnetic Ballast Compatible
- Output Distortion Less Than 3% THD For Linear Loads
- Generator Compatibility
- Forced Air Cooling Only During Emergency Operation; No Filters Required
- 30, 60, and 120 Minute Runtime available (90 minute certification pending)
- Inverter Operating Temperature 0 °C to 40 °C
- Battery Operating Temperature 20 °C to 30 °C

APPROVALS

- cUL to CSA 22.2 #141-15

System Display Functions



The NVJ is the third generation of IGBTbased inverter technology and is compatible with any type of lighting load. It features a rock solid design with all critical components and will work with lighting loads at cold starts for all normally off circuits or regular normally on circuits. The LVD disconnect for long power outages eliminates battery drain. Additionally, the NVJ Series eliminates the maintenance costs of individual testing of unit equipment and battery powered ballasts. All tests and diagnostics are performed and recorded automatically.



Meter Functions

- AC Voltage Input
- AC Voltage Output
- AC Current Output
- Battery Voltage
- System Days
- Battery Current
- VA Output
- Inverter Watts
- Ambient Temperature
- Inverter Minutes

Program Functions

- Date
- Time
- Month Test Date / Time
- Yearly Test Date / Time
- Load Fault Reduction Setting
- Low Battery Alarm
- Near Low Battery Alarm
- Low AC Voltage Alarm
- High AC Voltage Alarm
- Ambient Temperature Alarm

Control Functions

- Test Log & Event Log
- 75 Logs Stored
- Date, Time, Duration
- Output Voltage
- Output Current
- Ambient Temperature
- Alarms Preset
- Alarm Log
- 75 Logs Stored
- Date, Time, Alarm Type
- Test
- Buzzer On / Off

ORDERING GUIDE

SERIES	VOLTAGE INPUT-OUTPUT	CAPACITY RATING [W]*	BATTERY TYPE	OUTPUT BREAKERS ¹				OPTIONS
				OUTPUT	VOLTAGE/POLES	AMP RATING	QUAN- TITY ²	
NVJ30	AB-AB - 120/208 INPUT;	4 800	S - STAN- DARD	O - NORMALLY ON F - NORMALLY OFF	A - 120V 1-POLE	10	T01 - T30	STANDARD FEATURES
NVJ60	120/208 OUTPUT	6 000			B - 208V 2-POLES	16		C - STATUS MONITORING CONTACTS
NVJ90	EK-EK - 277/480 INPUT;	8 000			C - 240V 2-POLES	20		DRY FORM C
NVJ120	277/480 OUTPUT	10 000			E - 277V 1-POLE	25		DT - DRIP TOP [NEMA 2]
	HS-HS - 347/600 INPUT;	12 500			AB - 120/208V 3-POLES	32		OPTIONAL FEATURES
	347/600 OUTPUT	16 700			H - 347V	40		BBM - INTERNAL MAINTENANCE BYPASS (BREAK-BEFORE-MAKE)
		24 000			K - 480V 2-POLES	50		BL - CIRCUIT BREAKER LOCK[S]
		33 000				63		BTM - BATTERY TEMPERATURE MONITOR
		40 000						EMBP - EXTERNAL MAINTENANCE BYPASS (MAKE-BEFORE-BREAK)
		50 000						F - FAST CHARGE
								I - INVERTER ON DRY FORM C CONTACTS
								L - LOAD CONTROL INTERFACE (DIMMER / SWITCH BYPASS)
								MBB - INTERNAL MAINTENANCE BYPASS (MAKE-BEFORE-BREAK)
								O - OUTPUT TRANSFER DELAY
								P - REMOTE STATUS PANEL (REQUIRES OPTION C)
								R - REMOTE METER PANEL
								RA - REMOTE SUMMARY ALARM PANEL
								S - SUMMARY DRY FORM C CONTACTS
								SM - SEISMIC BRACING/MOUNTING
								PICK 1
								BIP - BACNET IP
								IOT - IOT INVERTER CLOUD CONNECT
								MIP - MODBUS TCP/IP

¹ Output breakers are optional

² Maximum out breakers available:

4 800-16 700 W: 8 supervised or 20 supervised with a top enclosure

24 000-50 000 W: 30 supervised

347 V : 14 supervised

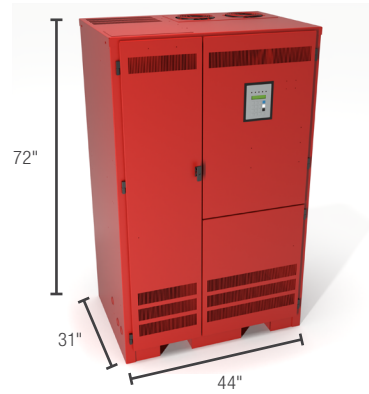
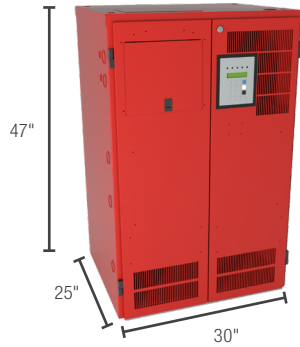
* Capacity changes with runtime. See list below.

CAPACITY RATING AS PER ORDERING GUIDE	ACTUAL CAPACITY RATING [KW]			
	NVJ30	NVJ60	NVJ90	NVJ120
4 800	4.8	4.8	4.44	4.08
6 000	6	6	5.55	5.1
8 000	8	8	7.4	6.8
10 000	10	10	9.25	8.5
12 500	12.5	12.5	11.6	10.6
16 700	16.7	16.7	15.4	14.2
24 000	24	24	22.2	20.4
33 000	33	33	30.5	28.1
40 000	40	40	37	34
50 000	50	50	46.3	42.5

OPTION TABLE

OPTION CODE	OPTION NAME	DESCRIPTION
BBM	INTERNAL MAINTENANCE BYPASS [BREAK-BEFORE-MAKE]	TOGGLE SWITCH DESIGNED TO DISCONNECT INVERTER FROM ELECTRICAL SYSTEM FOR MAINTENANCE [BREAK BEFORE MAKE]
BIP	BACNET IP	"MSTP" ALLOW UPLOAD OF FMP DATA VIA RS232 INTERMEDIATE DEVICE. THIS INFO CAN THEN BE DOWNLOADED TO CUSTOMER DEVICE. ALLOWS DIRECT COMMUNICATION VIA IP
BL	OUTPUT CIRCUIT BREAKER LOCK(S)	ALLOWS CUSTOMER TO LOCK THE OUTPUT CIRCUIT BREAKER IN ON OR OFF POSITION
BTM	BATTERY TEMPERATURE MONITOR	1. WARNING ALARM: WARNS WHEN BATTERY TEMPERATURE IS GETTING TOO HIGH. 2. ABSOLUTE ALARM: WHEN TEMPERATURE REACHES HIGH TEMP THIS SHUTS DOWN THE STRING OF BATTERIES WHERE THE HOT BATTERY IS.
C	STATUS MONITORING CONTACTS	5 FORM C DRY CONTACTS: 1. SYSTEM IN BYPASS 2. SUMMARY ALARM: ANY ALARM IN THE FMP 3. OUTPUT TRIP ALARM 4. UTILITY FAILURE 5. INVERTER ON
DT	DRIP TOP [NEMA 2]	METAL PIECE DESIGNED TO DIRECT FALLING WATER AWAY FROM THE UNIT
EMBP	EXTERNAL MAINTENANCE BYPASS SWITCH	MAINTENANCE BYPASS SWITCH MOUNTED EXTERNAL TO THE SYSTEM [CANNOT USE WITH OUTPUT CIRCUIT BREAKERS]
F	FAST CHARGE	ALLOWS THE SYSTEM TO RECHARGE IN 12 HOURS FROM LVD
I	INVERTER ON DRY FORM C CONTACT	FORM C DRY CONTACT WHICH OPENS WHEN INVERTER IS ON
IOT	IOT INVERTER CONNECT CLOUD COMMUNICATION	SYSTEM USING THE CLOUD TO ALLOW MONITORING OF MULTIPLE SYSTEMS IN ONE LOCATION
L	LOAD CONTROL RELAY [LINE VOLTAGE DIMMER OR SWITCH BYPASS]	LOAD CONTROL RELAY [LINE VOLTAGE DIMMER OR SWITCH BYPASS]
MBB	INTERNAL MAINTENANCE BYPASS MAKE BEFORE BREAK	TOGGLE SWITCH DESIGNED TO DISCONNECT INVERTER FROM ELECTRICAL SYSTEM FOR MAINTENANCE [MAKE BEFORE BREAK]
MIP	MODBUS TCP/IP	"MSTP" ALLOW UPLOAD OF FMP DATA VIA RS232 INTERMEDIATE DEVICE. THIS INFO CAN THEN BE DOWNLOADED TO CUSTOMER DEVICE. ALLOWS DIRECT COMMUNICATION VIA IP
O	OUTPUT TRANSFER DELAY	DEVICE DESIGNED TO DELAY TRANSFER ADJUSTABLE 0-7.5 SECONDS, FACTORY SET AT 3 SECONDS. USED WHEN CONTROL SYSTEM CANNOT DETECT THE FAST TRANSFER
P	REMOTE STATUS PANEL [STATUS ALARMS, REQUIRES C OPTION]	SINGLE GANG BOX SHOWING STATUS OF ALARMS, REQUIRES C OPTION
R	REMOTE METER PANEL	FULL SIZE METER PANEL MOUNTED REMOTELY IN A NEMA 1 ENCLOSURE
RA	REMOTE SUMMARY ALARM PANEL	LED INDICATOR AND SOUND ALERT
S	SUMMARY FAULT FORM C CONTACTS	RELAY CONTACT SHOWING ANY ALARM
SM	SEISMIC MOUNTING	INSTRUCTIONS AND HARDWARE FOR MOUNTING SYSTEM IN STANDARD SEISMIC APPLICATIONS
T	OUTPUT TRIP ALARM	ALARMS WHEN ANY OUTPUT CIRCUIT BREAKER IS TRIPPED

DIMENSIONS



POWER RATING [KW]	VOLTAGE IN-OUT	ELECTRONICS CABINET DIMENSIONS				BATTERIES			BATTERY CABINET DIMENSIONS			TOTAL SYSTEM WEIGHT
		WIDTH [IN]	HEIGHT [IN]	DEPTH [IN]	WEIGHT [LBS]	NO. OF BATTERIES	WEIGHT [LBS]	WIDTH [IN]	HEIGHT [IN]	DEPTH [IN]	WEIGHT [LBS]	
30 MIN.	[VAC]											
4.8	120/208 OR 277/480	30	47	25	535	12	437	17.5	62	25	285	1 257
	347/600		69		725							1 447
6	120/208 OR 277/480	30	47	25	535	15	546	17.5	62	25	285	1 366
	347/600		69		725							1 556
8	120/208 OR 277/480	30	47	25	535	20	728	17.5	62	25	285	1 548
	347/600		69		725							1 738
10	120/208 OR 277/480	30	47	25	639	12	860	22.75	77	25	375	1 874
	347/600		69		851							2 086
12.5	120/208 OR 277/480	30	47	25	639	15	1 076	22.75	77	25	375	2 090
	347/600		69		873							2 324
16.7	120/208 OR 277/480	30	47	25	639	20	1 434	22.75	77	25	375	2 448
	347/600		69		873							2 682
24	120/208 OR 277/480	44	72	31	1 250	40	2 868	48	72	31	650	4 768
	347/600	74			1 547							5 065
33	120/208 OR 277/480	44	72	31	1 250	40	2 868	48	72	31	650	4 768
	347/600	74			1 585							5 103
40	120/208 OR 277/480	44	72	31	1 460	60	4 302	48	72	31	700	6 462
	347/600	74			1 827							6 829
50	120/208 OR 277/480	44	72	31	1 460	60	4 302	48	72	31	700	6 462
	347/600	74			1 827							6 829

POWER RATING [KW]			VOLTAGE IN-OUT [VAC]	ELECTRONICS CABINET DIMENSIONS				BATTERIES			BATTERY CABINET DIMENSIONS			TOTAL SYSTEM WEIGHT
60 MIN.	90 MIN.	120 MIN.		WIDTH [IN]	HEIGHT [IN]	DEPTH [IN]	WEIGHT [LBS]	NO. OF BATTERIES	WEIGHT [LBS]	WIDTH [IN]	HEIGHT [IN]	DEPTH [IN]	WEIGHT [LBS]	
4.8	4.44	4.08	120/208 OR 277/480	30	47	25	535	12	860	30	47	25	210	1 605
			347/600		69		725							1 795
6	5.55	5.1	120/208 OR 277/480	30	47	25	535	15	1 076	30	47	25	210	1 821
			347/600		69		725							2 011
8	7.4	6.8	120/208 OR 277/480	30	47	25	535	20	1 434	30	47	25	232	2 201
			347/600		69		725							2 391
10	9.25	8.5	120/208 OR 277/480	30	47	25	639	24	1 721	30	47	25	232	2 592
			347/600		69		851							2 804
12.5	11.6	10.6	120/208 OR 277/480	30	47	25	639	30	2 151	60	47	25	420	3 210
			347/600		69		873							3 444
16.7	15.4	14.2	120/208 OR 277/480	30	47	25	639	40	2 868	60	47	25	464	3 971
			347/600		69		873							4 205
24	22.2	20.4	120/208 OR 277/480	44	72	31	1 250	60	4 302	48	72	31	700	6 252
			347/600	74			1 547							6 549
33	30.5	28.1	120/208 OR 277/480	44	72	31	1 250	80	5 736	96	72	31	1 300	8 286
			347/600	74			1 585							8 621
40	37	34	120/208 OR 277/480	44	72	31	1 460	100	7 170	96	72	31	1 300	9 930
			347/600	74			1 827							10 297
50	46.3	42.5	120/208 OR 277/480	44	72	31	1 460	120	8 604	96	72	31	1 400	11 464
			347/600	74			1 827							11 831

Data is based upon tests performed in a controlled environment. Actual performance can vary depending on operating conditions.
All products are subject to change or may be discontinued any time without notice.

HEAT LOSS TABLE

30 MINUTE RUN TIME		60 MINUTE RUN TIME		90 MINUTE RUN TIME		120 MINUTE RUN TIME	
OUTPUT RATING [KW]	HEAT LOSS [BTU/H]	OUTPUT RATING [KW]	HEAT LOSS [BTU/H]	OUTPUT RATING [KW]	HEAT LOSS [BTU/H]	OUTPUT RATING [KW]	HEAT LOSS [BTU/H]
4.8	327	4.8	327	4.44	303	4.08	278
6.0	409	6.0	409	5.55	379	5.10	348
8.0	546	8.0	546	7.40	505	6.80	464
10.0	682	10.0	682	9.25	631	8.50	580
12.5	853	12.5	853	11.6	789	10.6	725
16.7	1 139	16.7	1 139	15.4	1 054	14.2	968
24.0	1 637	24.0	1 637	22.2	1 514	20.4	1 391
33.0	2 251	33.0	2 251	30.5	2 082	28.1	1 913
40.0	2 728	40.0	2 728	37.0	2 523	34.0	2 319
50.0	3 410	50.0	3 410	46.3	3 154	42.5	2 899