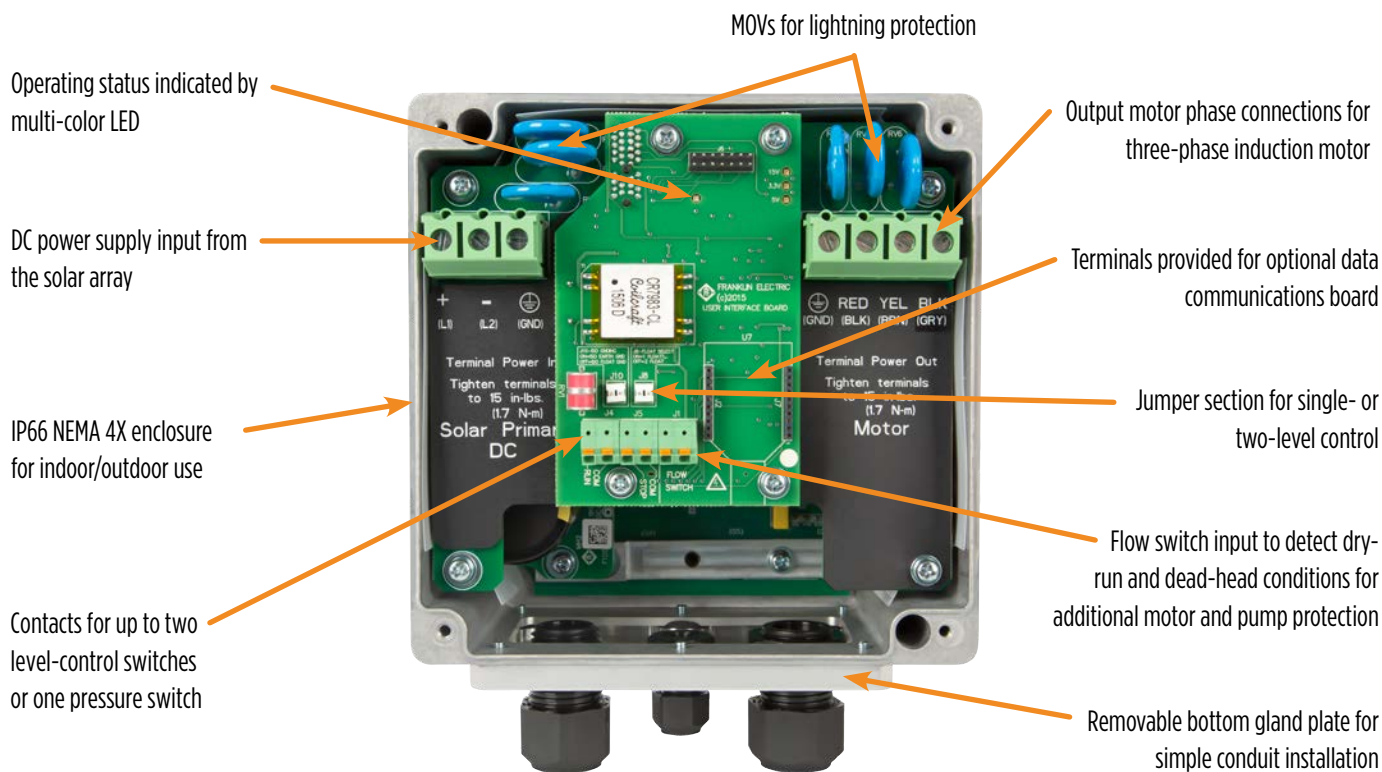




FHOTON™ SOLARPAK





APPLICATIONS

The Fhoton™ drive supports submersible pumping applications:

- Livestock watering
- Tank/cistern fillin
- Wildlife refuge and game farms
- Rural water supply for villages and homesteads
- Irrigation systems
- Fountains
- Vineyards
- Renewable energy projects
- Efflu t pumping
- Rain harvesting

BUILT-IN DIAGNOSTICS & PROTECTION

The Fhoton™ SolarPAK includes diagnostic features and built-in protection from potential harmful conditions, including:

- | | |
|---------------------|-------------------------|
| ■ Surge | ■ Short circuit |
| ■ Underload/dry run | ■ Overheated controller |
| ■ Overvoltage | ■ Reverse polarity |
| ■ Locked pump | ■ Dead head |
| ■ Open circuit | |



PHOTON™ SOLARPAK

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For the most up-to-date product information, visit www.franklin-electric.com.au

ALL-IN-ONE PACKAGE

The Photon SolarPAK is the system solution to your solar pumping requirements. By utilizing quality components, innovative thinking based on global market inputs, and a technical expertise in groundwater pumping, Franklin Electric has developed a rugged, high-output system which tackles the challenges of harsh and remote environments. No other system delivers the features, benefits, and reliability of Photon SolarPAK in just one package!

FEATURES

- High-flow system for faster tank-fill and significant water output
- Proven motor and pump technology for long-term reliability
- Robust IP66, NEMA 4X enclosure minimizes impact from wildlife, insects, dust, and weather
- Optimized for use with DC solar array
- Operating status and fault conditions indicated by multi-color LED
- Terminals provided for an optional data communications board
- Maximum Power Point Tracking (MPPT) for maximizing efficiency of input power
- Soft-start feature prevents water hammer and increases system life
- Allows use of new solar array or retrofit to existing array
(subject to size and performance check)
- Simple installation with no required maintenance
- Built-in diagnostics and protection
- cULus, UL and CE approved

SOLARPAK CONTENTS

- Franklin Electric 4" submersible motor
- Franklin Electric 4" submersible pump
- Photon Solar controller
- Variety of flow rates available: 18, 25, 30, 45, 70, 100, 150, or 270 Lpm
- Motor and drive ratings available: 0.75 or 1.5 hp (0.55 or 1.1 kW)



SOLARPAK NOMENCLATURE

XXX FD SP - X.XHP

Motor Rating: 0.75 or 1.5 hp (0.55 or 1.1 kW)
 SolarPAK
 Photon Drive
 Pump Flow: 5, 7, 10, 15, 25, 35, 45, or 90 US gpm
 (18, 25, 30, 45, 70, 100, 150, or 270 lpm)

PHOTON SOLARPAK - ORDERING INFORMATION

SOLARPAK MODEL NUMBERS

SolarPAK		Photon Solar Controller		Solar Pump (BSPP)				Motor		Flow Switch (BSPP)	
SolarPAK Model	Order No.	Drive Model	Part No.	LPM	Stages	Solar Pump	Part No.	kW	Part No.	Model	Part No.
18FDSP-0.55KW	90030514	FD Solar 0.55KW N4	581013000864-SP075HP	18	18	18SL07S4-PEXB	90020504	0.55	2349029204S	F21	226019101
18FDSP-1.1KW	90030524	FD Solar 1.1 kW N4	581014200864-SP150HP	18	30	18SL1S4-PEXB	90020508	1.1	2345049203S	F21	226019101
25FDSP-0.55KW	90030714	FD Solar 0.55KW N4	581013000864-SP075HP	25	13	25SL07S4-PEXB	90020704	0.55	2349029204S	F21	226019101
30FDSP-0.55KW	90031014	FD Solar 0.55KW N4	581013000864-SP075HP	30	8	30SL07S4-PEXB	90021004	0.55	2349029204S	F21	226019101
30FDSP-1.1KW	90031024	FD Solar 1.1 kW N4	581014200864-SP150HP	30	18	30SL1S4-PEXB	90021011	1.1	2345049203S	F21	226019101
45FDSP-0.55KW	90031514	FD Solar 0.55KW N4	581013000864-SP075HP	45	6	45SL07S4-PEXB	90021504	0.55	2349029204S	F21	226019101
45FDSP-1.1KW	90031524	FD Solar 1.1 kW N4	581014200864-SP150HP	45	15	45SL1S4-PEXB	90021511	1.1	2345049203S	F21	226019101
70FDSP-1.1KW	90032524	FD Solar 1.1 kW N4	581014200864-SP150HP	70	10	70SL1S4-PEXB	90022511	1.1	2345049203S	F21	226019101
100FDSP-1.1KW	90033524(a)	FD Solar 1.1 kW N4	581014200864-SP150HP	100	10	100SL1S4-PEXB	90023511	1.1	2345049203S	F21	226019101
150FDSP-1.1KW	90034524(a)	FD Solar 1.1 kW N4	581014200864-SP150HP	150	7	150SL1S4-PEXB	90024511	1.1	2345049203S	F21	226019101
270FDSP-1.1KW	90039024(a)	FD Solar 1.1 kW N4	581014200864-SP150HP	270	5	270SL1S4-PEXB	90029011	1.1	2345049203S	F21	226019101

* 316 stainless steel motors available on request for 1.5 hp (1.1 kW)

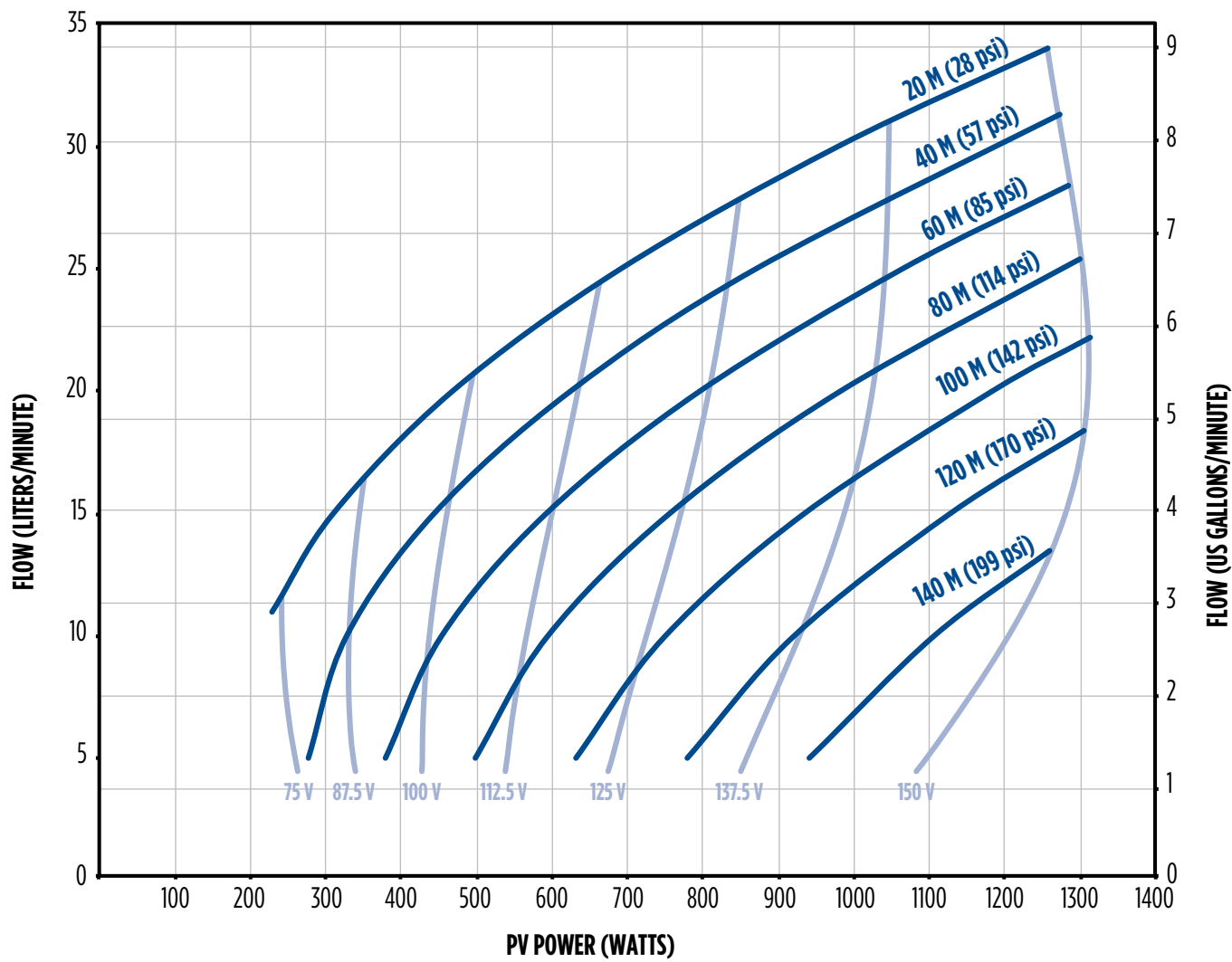
** Motors shown above include an individual conductor lead installed in the motor.

(a) High capacity pumps, 35 US gpm (100 lpm) and higher, in a SolarPAK are not supplied with an internal check valve.



PHOTON SOLARPAK - 0.75 PERFORMANCE

18FDSP-0.55kW
Photon Solar 0.55 kW Controller, 18 Lpm 0.55 kW Pump End, 0.55 kW Motor



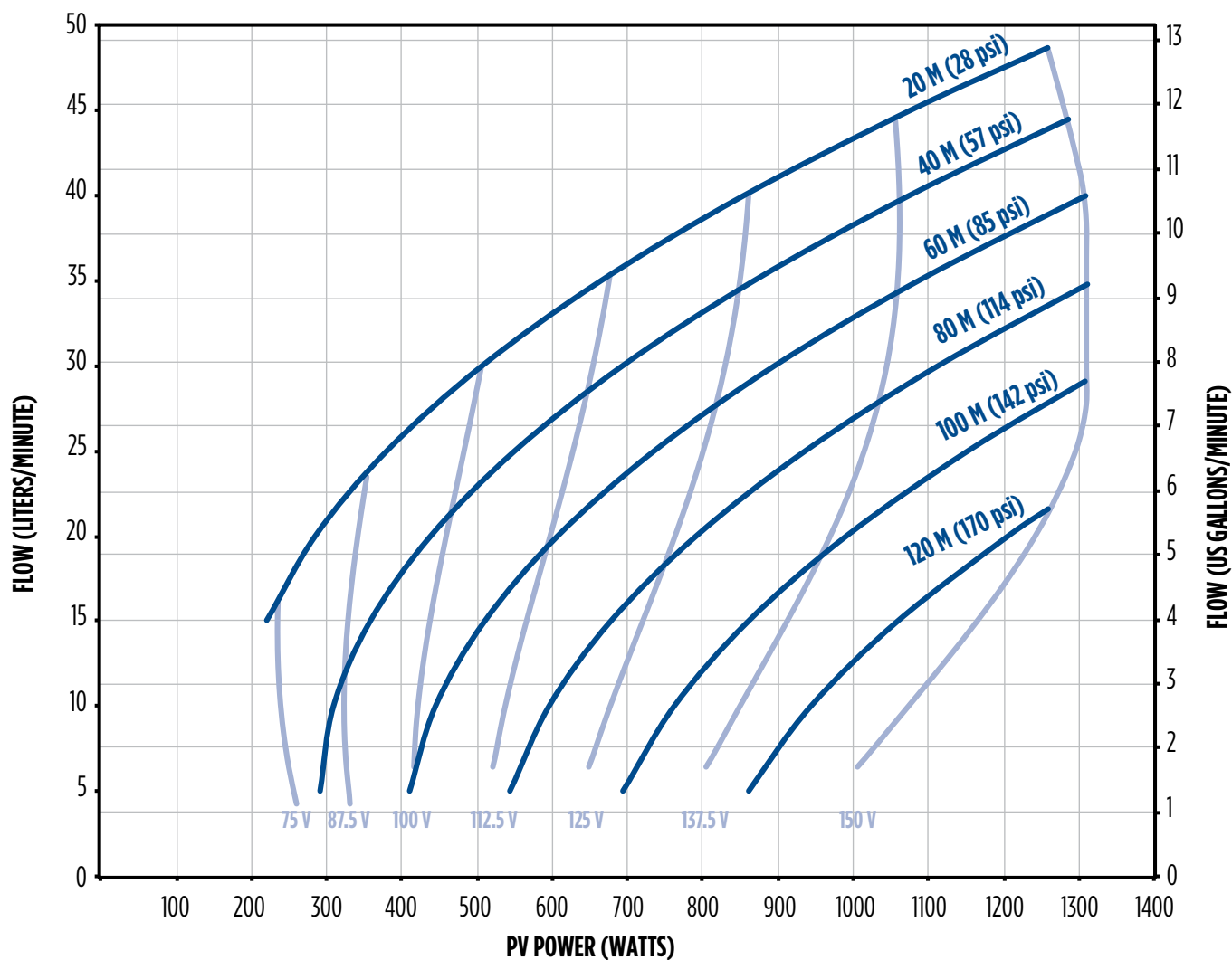
TDH (M)	PV Power (Watts)											
	200	300	400	500	600	700	800	900	1000	1100	1200	1300
	Flow (LPM)											
20		15	19	19	22	22	26	26	30	30	34	
40		7	11	15	19	22	22	26	26	30	30	
60			7	11	15	19	19	22	22	26	26	
80				4	11	11	15	19	19	22	22	26
100						7	11	15	15	19	19	22
120							7	7	11	15	15	19
140									7	11	11	

NOTE: Refer to drive specifications table in this catalog for PV source power and voltage-recommended operating ranges

PHOTON SOLARPAK - 1.5 PERFORMANCE

18FDSP-1.1kW

Photon Solar 1.1 kW Controller, 18 Lpm 1.1 kW Pump End, 1.1 kW Motor



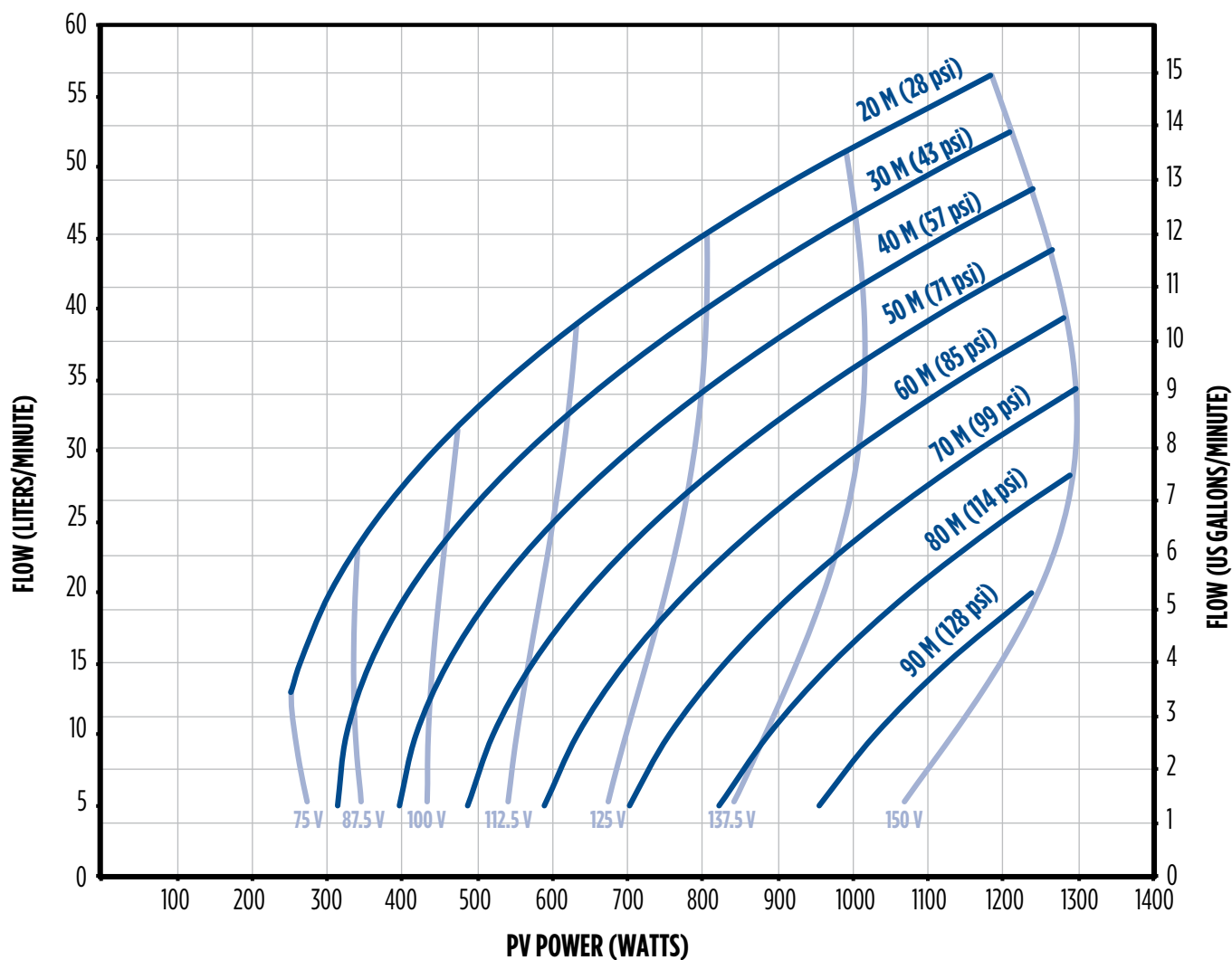
TDH (M)	PV Power (Watts)											
	200	300	400	500	600	700	800	900	1000	1100	1200	1300
	Flow (LPM)											
20		18	26	30	34	34	38	41	41	45	45	
40		7	18	22	26	30	34	34	38	41	41	
60				15	18	22	26	30	34	34	38	38
80					11	15	18	22	26	30	30	34
100						3	11	15	18	22	7	30
120								7	11	15	18	

NOTE: Refer to drive specifications table in this catalog for PV source power and voltage-recommended operating ranges

PHOTON SOLARPAK - 0.75 PERFORMANCE

25FDSP-0.55kW

Photon Solar 0.55kW Controller, 25 lpm 0.55 kW Pump End, 0.55 kW Motor



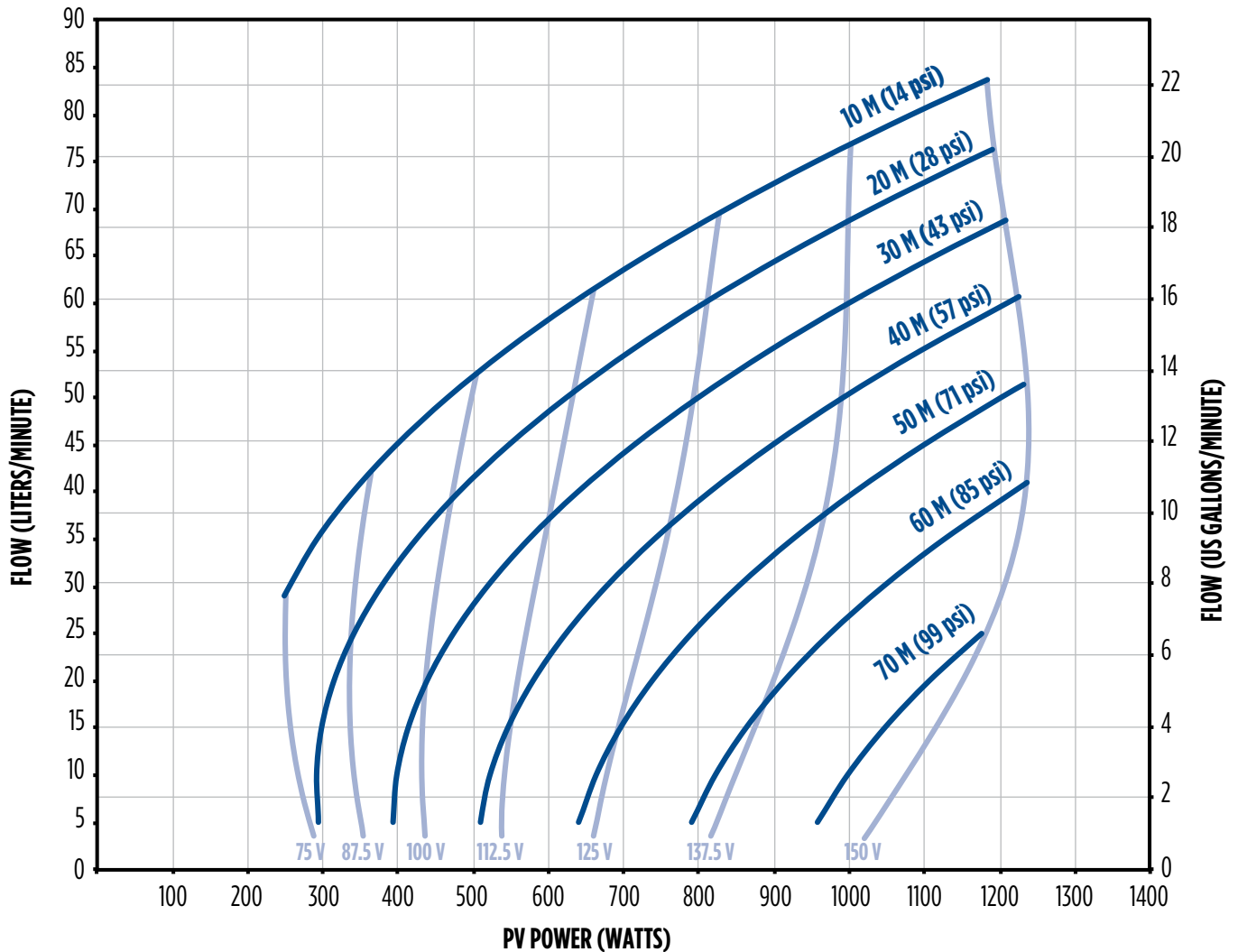
TDH (M)	PV Power (Watts)											
	200	300	400	500	600	700	800	900	1000	1100	1200	1300
	Flow (LPM)											
20		18	26	34	37	41	45	49	49	52		
30			18	26	30	34	37	41	45	49	52	
40			7	18	22	30	34	37	41	45	45	
50				7	15	22	26	30	34	37	41	
60					7	11	18	26	30	34	37	
70							11	18	22	26	30	34
80								11	15	18	22	
90									7	11	18	

NOTE: Refer to drive specifications table in this catalog for PV source power and voltage-recommended operating ranges

PHOTON SOLARPAK - 0.75 PERFORMANCE

30FDSP-0.55kW

Photon Solar 0.55 kW Controller, 30 lpm 0.55 kW Pump End, 0.55 kW Motor



TDH (M)	PV Power (Watts)											
	200	300	400	500	600	700	800	900	1000	1100	1200	1300
	Flow (LPM)											
10		34	45	52	56	64	68	71	75	79		
20		15	30	41	49	52	60	64	68	71		
30			11	26	37	45	49	56	60	64	68	
40					22	30	37	45	49	52	60	
50						15	26	34	37	45	13	
60							7	18	26	34	37	
70									11	18		

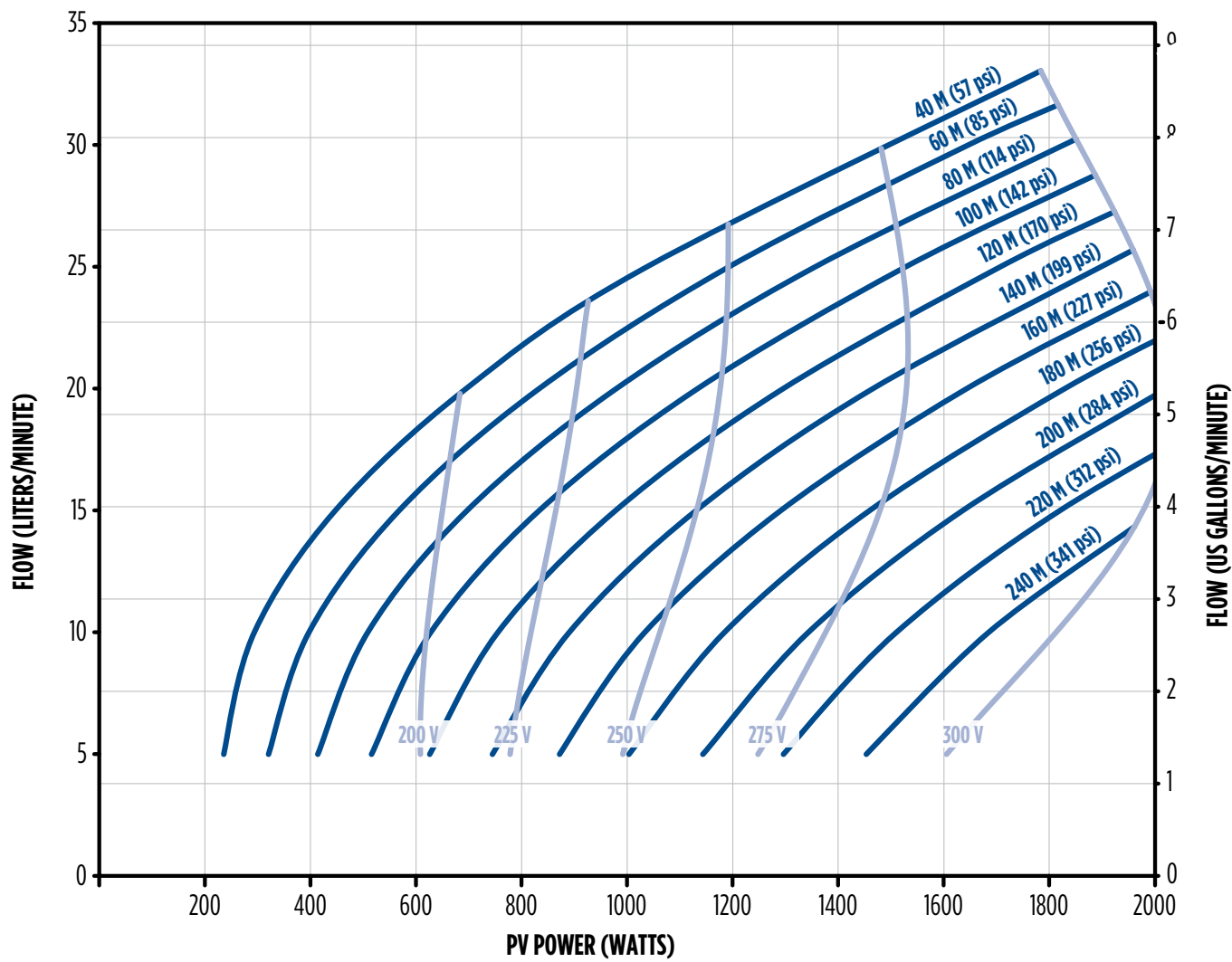
NOTE: Refer to drive specifications table in this catalog for PV source power and voltage-recommended operating ranges



PHOTON SOLARPAK - 1.5 PERFORMANCE

30FDSP-1.1 kW

Photon Solar 1.1 kW Controller, 30 lpm 1.1 kW Pump End, 1.1 kW Motor



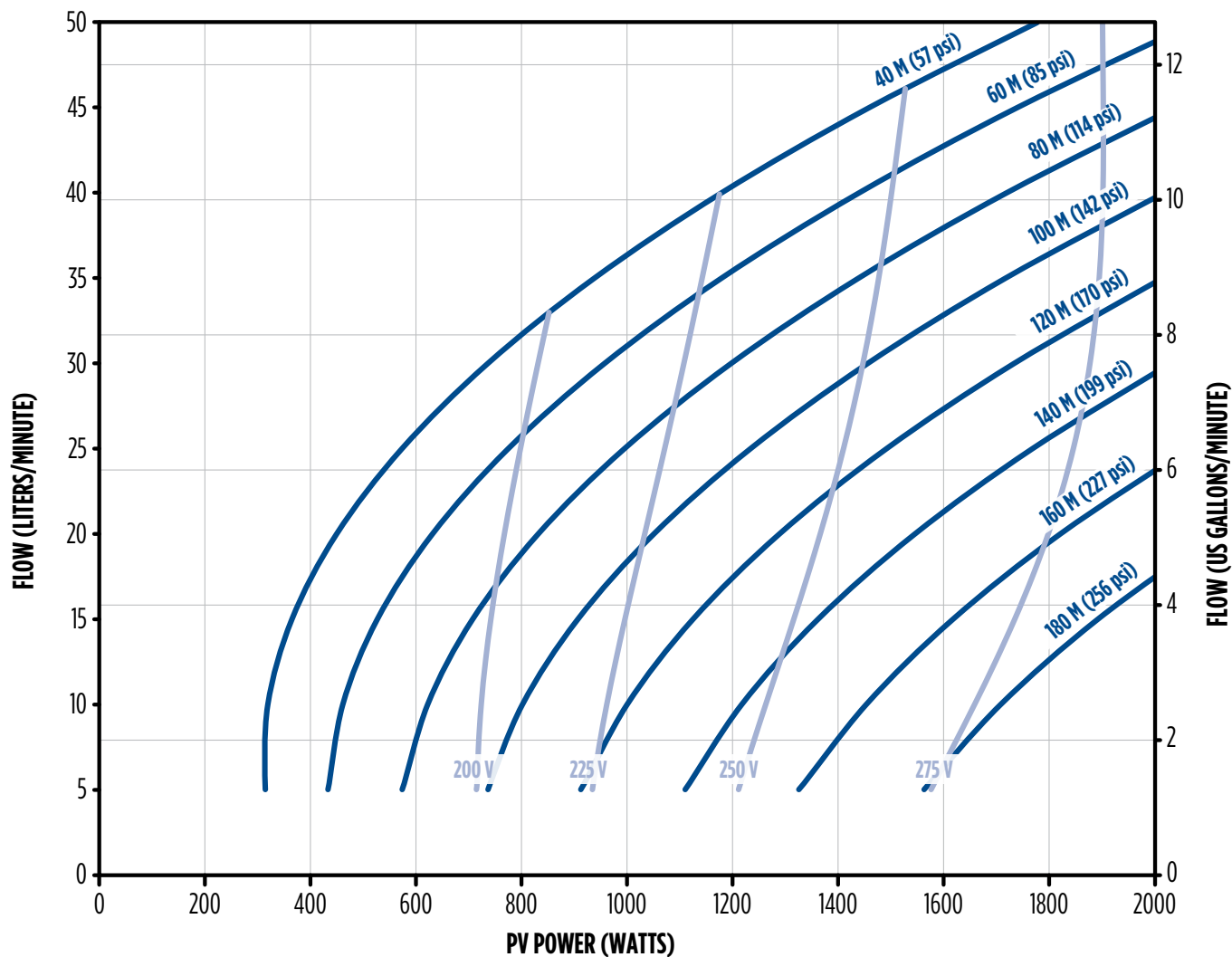
TDH (M)	PV Power (Watts)									
	200	400	600	800	1000	1200	1400	1600	1800	2000
	Flow (LPM)									
40		15	19	22	22	26	30	30	34	
60		11	15	19	22	26	26	30	30	
80			11	19	19	22	26	26	30	
100			7	15	19	22	22	26	26	
120				11	15	19	22	22	26	
140				7	11	15	19	22	22	
160					7	15	15	19	22	22
180					3	11	15	15	19	22
200						7	11	15	19	19
220							7	11	15	19
240								7	11	

NOTE: Refer to drive specifications table in this catalog for PV source power and voltage-recommended operating ranges

PHOTON SOLARPAK - 1.5 PERFORMANCE

45FDSP-0.55kW

Photon Solar 1.1 kW Controller, 45 lpm 1.1kW Pump End, 1.1 kW Motor



TDH (M)	PV Power (Watts)									
	200	400	600	800	1000	1200	1400	1600	1800	2000
	Flow (LPM)									
40		18	26	30	37	41	45	45	49	
60			18	26	30	34	37	41	45	13
80			7	18	26	30	34	37	41	45
100				11	18	22	30	34	37	41
120					11	18	22	26	30	34
140						7	15	22	26	30
160							7	15	18	22
180								7	11	18

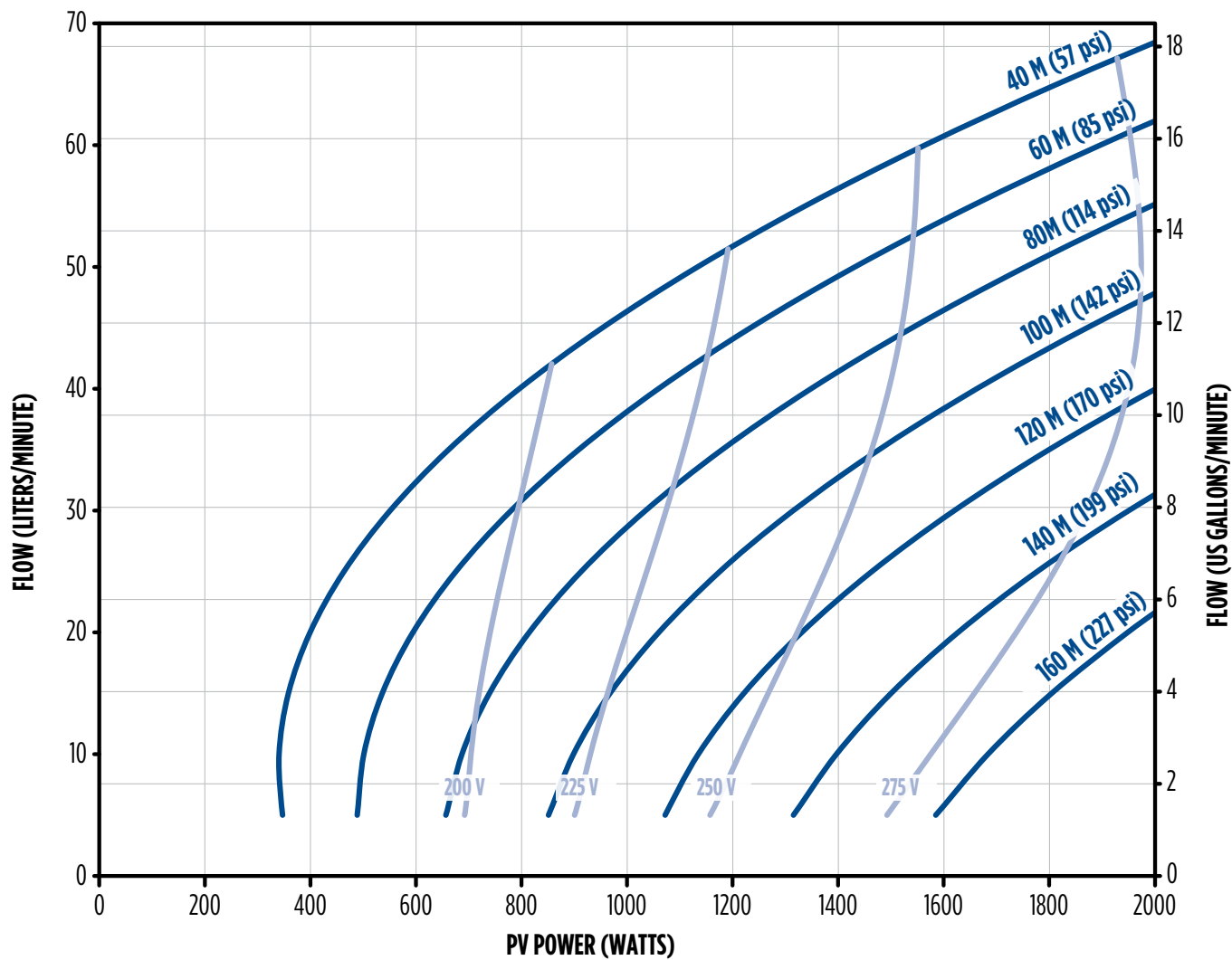
NOTE: Refer to drive specifications table in this catalog for PV source power and voltage-recommended operating ranges



PHOTON SOLARPAK - 1.5 PERFORMANCE

45FDSP-1.1kW

Photon Solar 1.1 kW Controller, 45 lpm 1.1 kW Pump End, 1.1 kW Motor



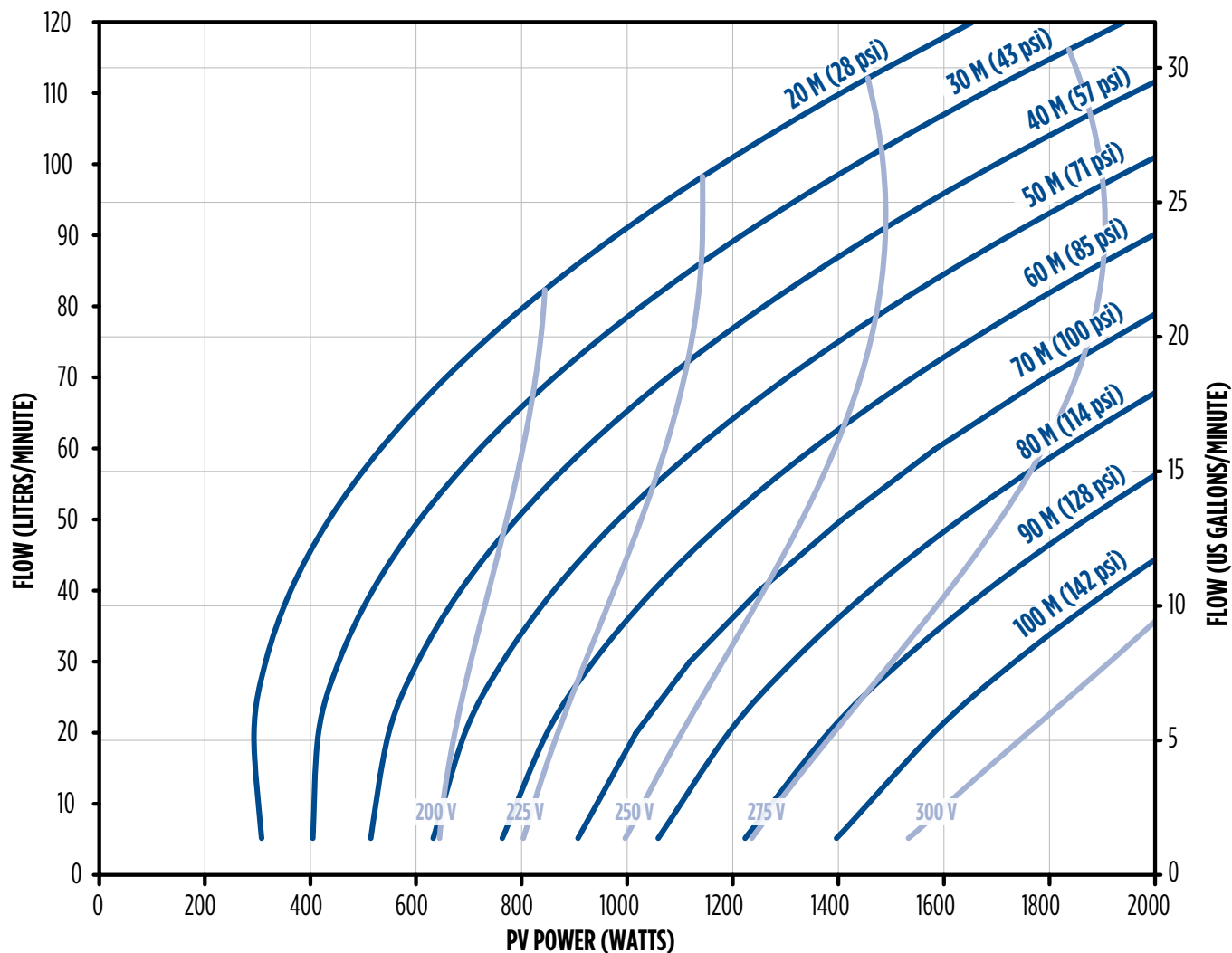
TDH (M)	PV Power (Watts)									
	200	400	600	800	1000	1200	1400	1600	1800	2000
	Flow (LPM)									
40		19	30	41	45	52	56	60	64	68
60			22	30	49	45	49	52	56	60
80				5	30	37	41	45	49	56
100					15	26	34	37	41	49
120						15	22	30	34	41
140							11	18	34	30
160								7	15	22

NOTE: Refer to drive specifications table in this catalog for PV source power and voltage-recommended operating ranges

PHOTON SOLARPAK - 1.5 PERFORMANCE

70FDSP-1.1kW

Photon Solar 1.1 kW Controller, 70 lpm 1.1 kW Pump End, 1.1 kW Motor



TDH (M)	PV Power (Watts)									
	200	400	600	800	1000	1200	1400	1600	1800	2000
	Flow (LPM)									
20		45	64	79	90	102	109	117		
30			49	64	79	128	98	105	113	
40			30	49	64	75	87	94	102	113
50				34	52	64	75	83	94	102
60				11	37	49	64	71	83	90
70					18	37	49	16	71	79
80						22	37	49	56	68
90							22	34	45	56
100							4	22	34	45

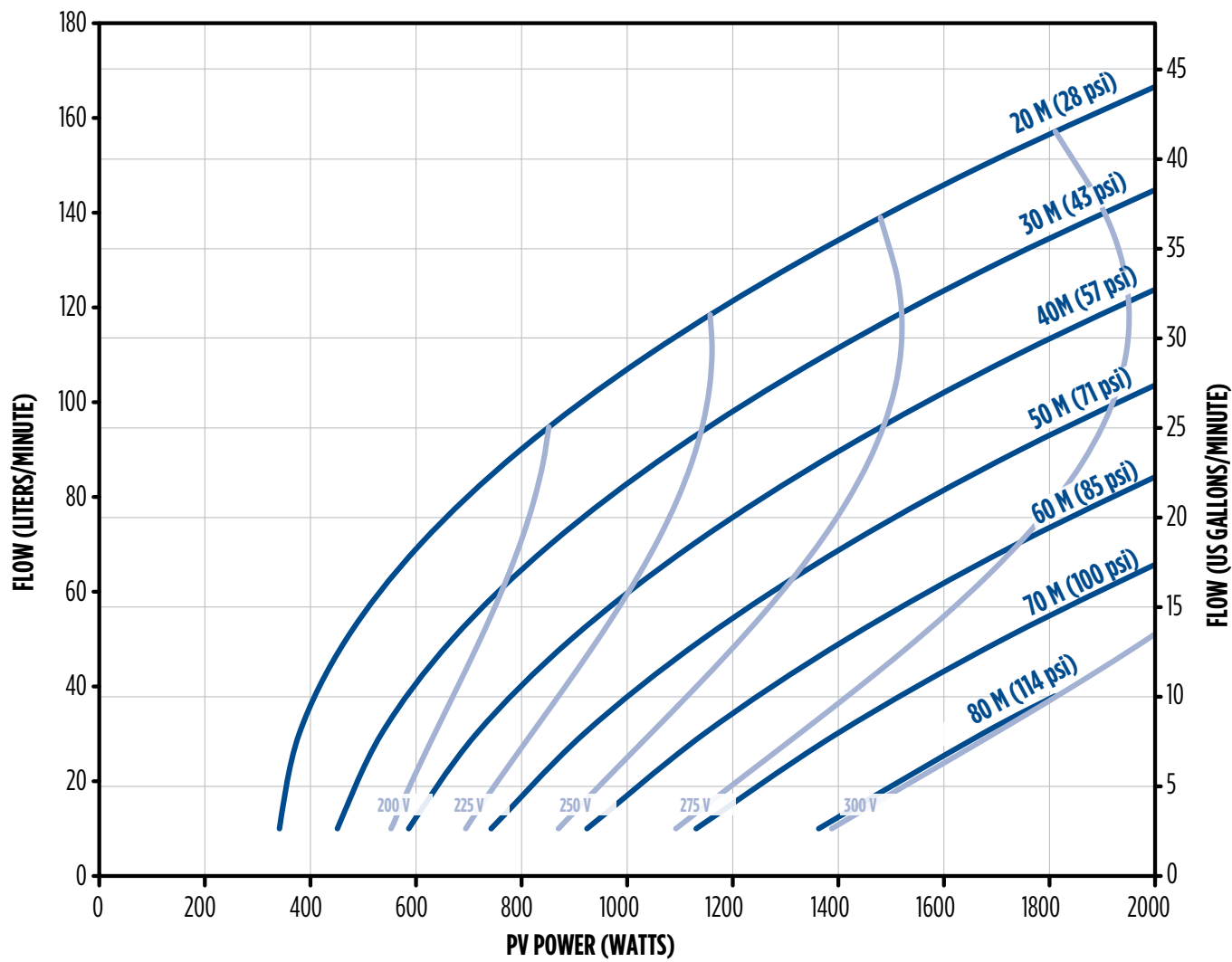
NOTE: Refer to drive specifications table in this catalog for PV source power and voltage-recommended operating ranges



PHOTON SOLARPAK - 1.5 PERFORMANCE

100FDSP-1.1kW

Photon Solar 1.1 kW Controller, 100 lpm 1.1 kW Pump End, 1.1 kW Motor



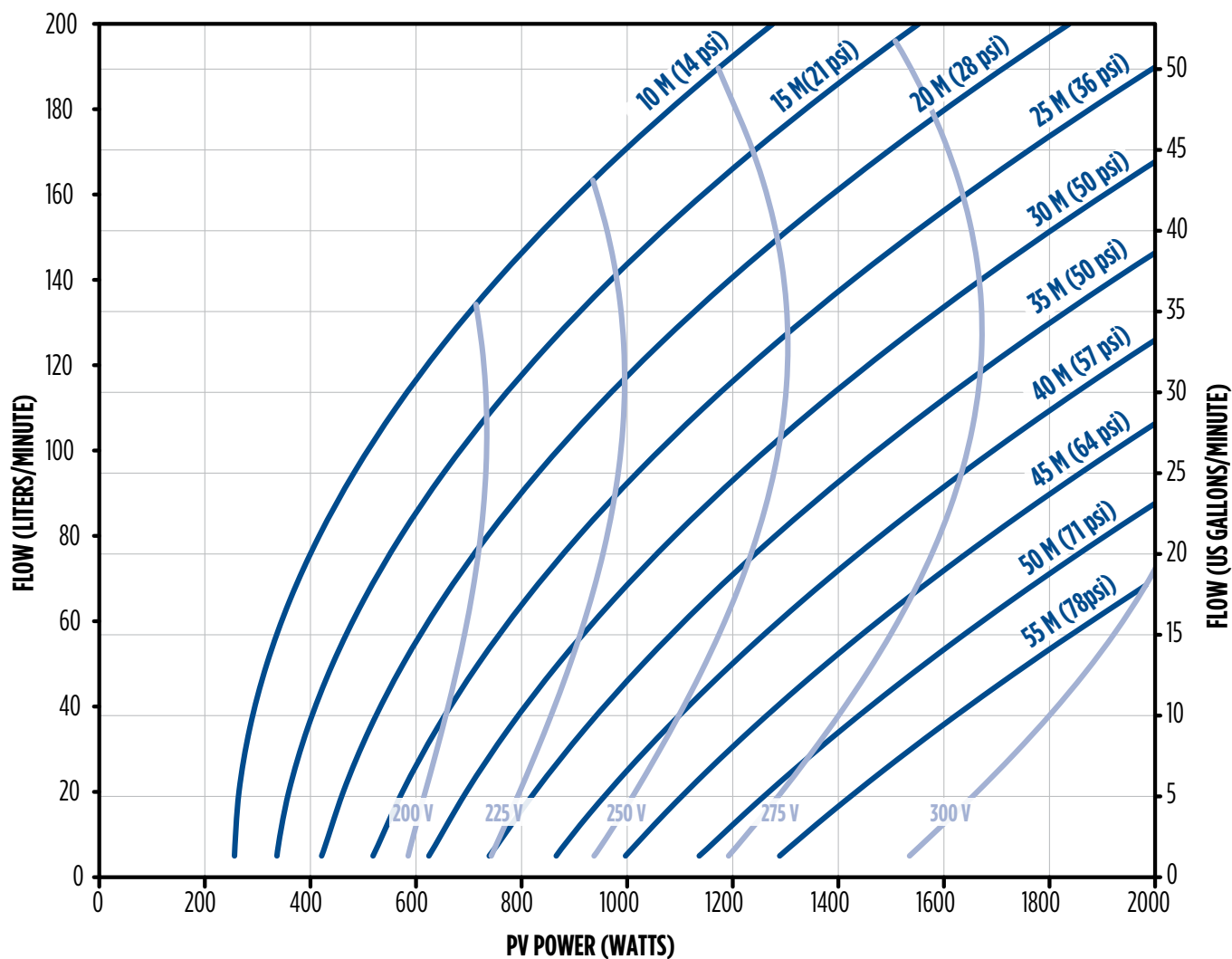
TDH (M)	PV Power (Watts)									
	200	400	600	800	1000	1200	1400	1600	1800	2000
	Flow (LPM)									
20		37	68	90	105	121	136	147	155	166
30			41	64	83	98	113	124	136	143
40			11	41	60	75	90	102	113	124
50				15	37	56	68	79	94	102
60					15	34	49	60	75	83
70						15	30	41	56	64
80							11	26	37	

NOTE: Refer to drive specifications table in this catalog for PV source power and voltage-recommended operating ranges

PHOTON SOLARPAK - 1.5 PERFORMANCE

150FDSP-1.1kW

Photon Solar 1.1 kW Controller, 150 lpm 1.1 kW Pump End, 1.1 kW Motor



TDH (M)	PV Power (Watts)									
	200	400	600	800	1000	1200	1400	1600	1800	2000
	Flow (LPM)									
10		75	117	147	170	193				
15		37	87	31	117	166	185			
20			56	90	117	140	162	181	196	
25			27	64	94	117	136	155	174	189
30				41	68	94	113	132	151	166
35				15	45	71	94	113	128	147
40					26	49	71	90	109	124
45						30	52	71	90	105
50						11	34	52	71	87
55							68	37	52	

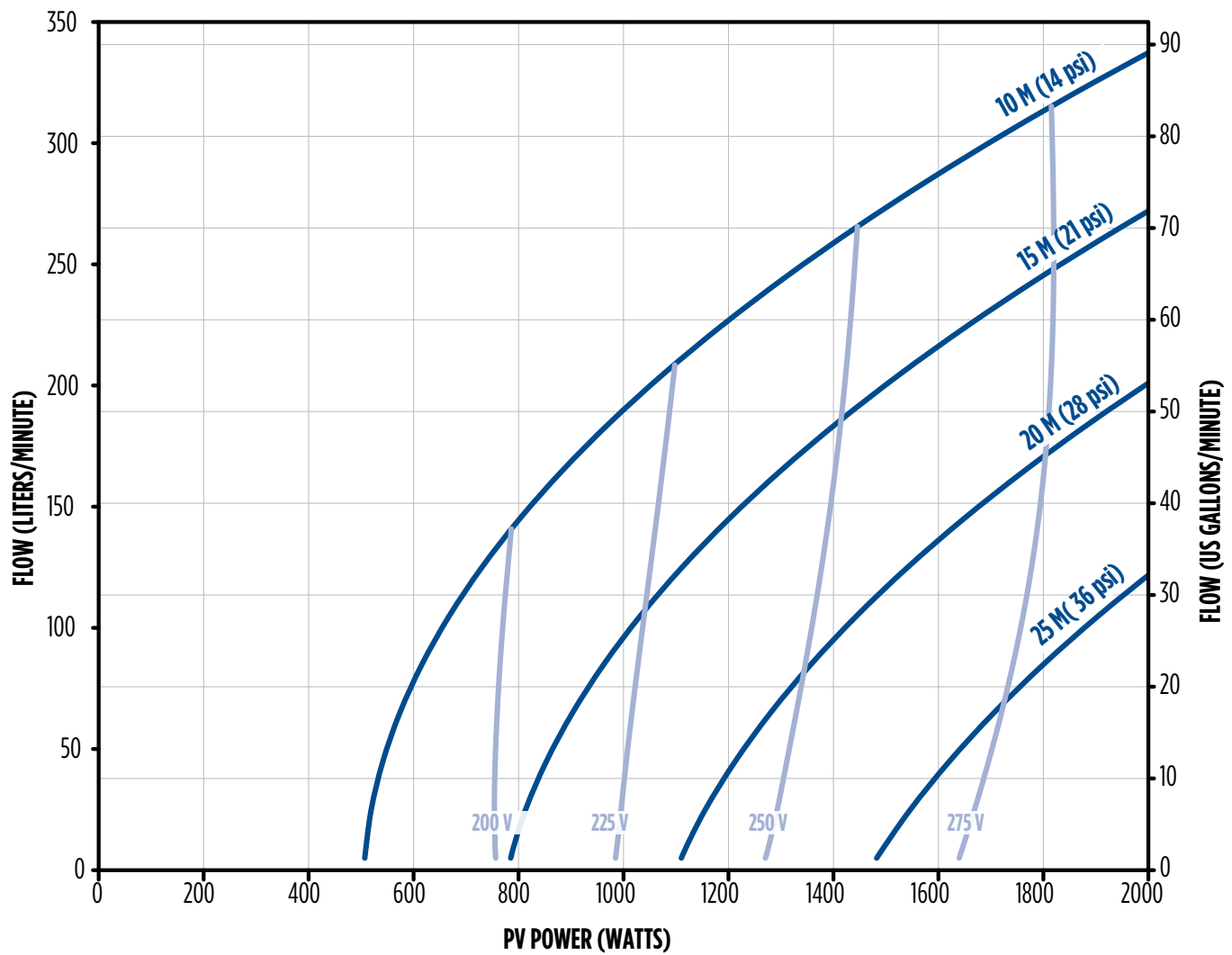
NOTE: Refer to drive specifications table in this catalog for PV source power and voltage-recommended operating ranges



PHOTON SOLARPAK - 1.5 PERFORMANCE

270FDSP-1.1kW

Photon Solar 1.1 kW Controller, 270 lpm 1.1 kW Pump End, 1.1 kW Motor



TDH (M)	PV Power (Watts)									
	200	400	600	800	1000	1200	1400	1600	1800	2000
	Flow (LPM)									
10			80	144	190	227	261	287	314	344
15				19	98	144	185	215	246	272
20						45	94	136	170	200
25								41	83	121

NOTE: Refer to drive specifications table in this catalog for PV source power and voltage-recommended operating ranges

PHOTON SOLARPAK - DIMENSIONS

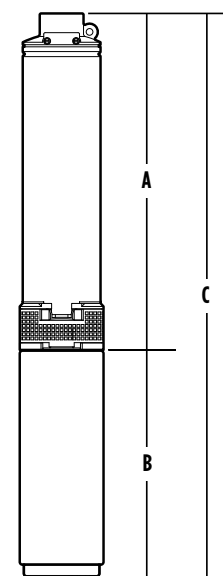
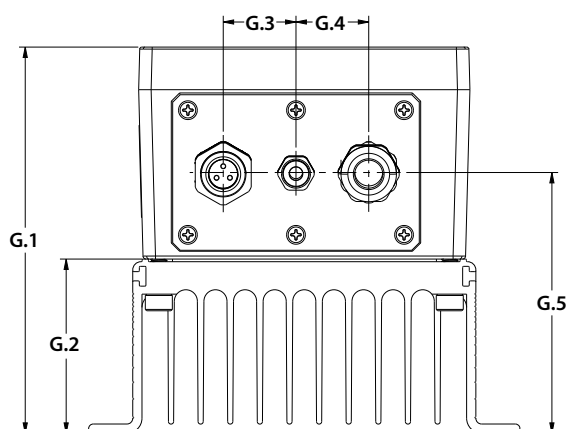
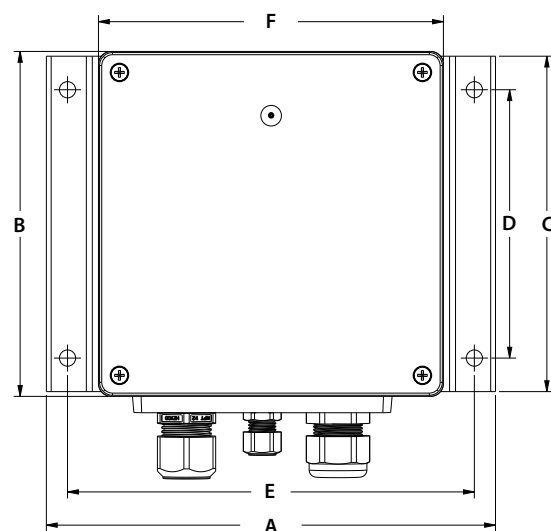
SOLAR PMA DIMENSIONS

LPM	kW	HP	USGPM	Stages	A		B		C		Discharge (in)	PE Weight		PMA Weight	
					inches	mm	inches	mm	inches	mm		lbs	kg	lbs	kg
18	0.55	0.75	5	18	22.6	574	10.6	270	33.2	844	1 1/4	12	5	33	15
25	0.55	0.75	7	13	18.4	467	10.6	270	29.0	737	1 1/4	11	5	32	15
30	0.55	0.75	10	8	14.7	373	10.6	270	25.3	643	1 1/4	8	4	29	13
45	0.55	0.75	15	6	13.0	329	10.6	270	23.6	599	1 1/4	7	3	28	13
18	1.1	1.5	5	30	34.1	866	11.7	298	45.8	1164	1 1/4	19	9	48	22
30	1.1	1.5	10	18	25.3	642	11.7	298	37.0	940	1 1/4	16	7	45	20
45	1.1	1.5	15	15	20.5	521	11.7	298	32.2	819	1 1/4	15	7	44	20
70	1.1	1.5	25	10	19.2	488	11.7	298	30.9	786	1 1/4	10	5	39	18
100	1.1	1.5	35	10	20	508	11.7	298	31.7	806	2	11	5	40	18
150	1.1	1.5	45	7	23.3	593	11.7	298	35.1	891	2	16	7	45	20
270	1.1	1.5	90	5	22.6	575	11.7	298	34.4	873	2	15	7	44	20

NOTE: Maximum diameter across cable guard is 3.90" (99.1 mm) on all models

SOLAR CONTROLLER DIMENSIONS

Dimensions	A	B	C	D	E	F	G1	G2	G3	G4	G5
Inches	8.17	6.28	6.10	4.88	7.40	6.28	7.32	3.30	1.38	1.38	4.94
Millimeters	207.52	159.50	155.00	124.00	188.00	159.50	185.93	83.82	35.00	35.00	125.48



PHOTON SOLARPAK - DRIVE SPECIFICATIONS

SOLAR CONTROLLER

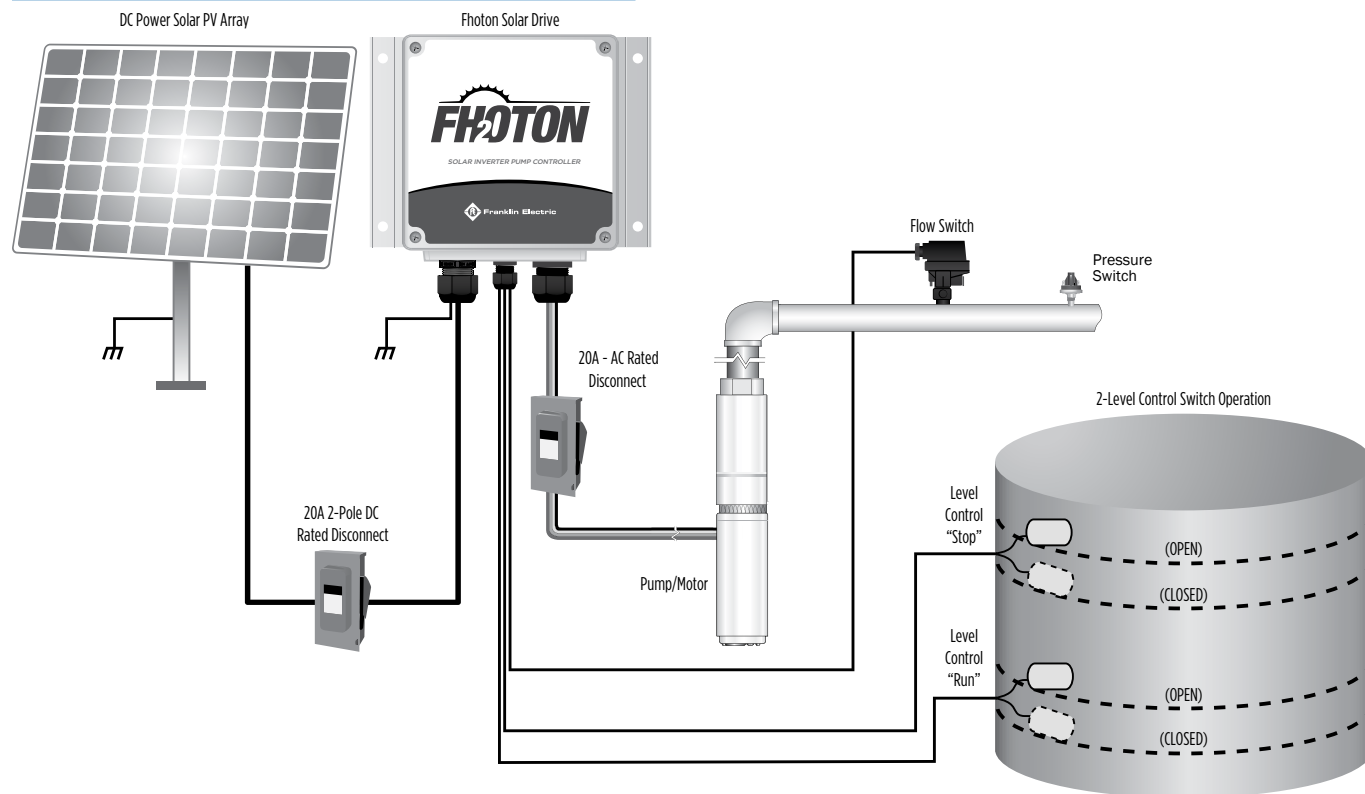
			0.75 hp (0.55 kW) Model		1.5 hp (1.1 kW) Model	
Controller Model No.			581013000864-SP075HP		581014200864-SP150HP	
			Output			
Max. Output Voltage			100V AC, 3-phase		200V AC, 3-phase	
Max. Amps (RMS)			8.6 A, each phase		6.8 A, each phase	
Output Frequency			30-60 Hz			
Efficiency at Max Power			98%			
			PV Source			
Input Voltage at MPP			45 - 240 V DC		**115 – 330 V DC	
Max. Amps Input			6.8 A DC, continuous		5.8 A DC, continuous	
Power at MPP			Up to 1200 watts		Up to 2000 watts	
			For Use With			
Franklin Electric Motor			234902----		234504----	
Solar Pumps (NPT)	USGPM	Stages	Model No.		Stages	Model No.
	5	18	90020503		30	90020507
	7	13	90020703		30	-
	10	8	90021003		18	90021010
	15	6	90021503		15	90021510
	25	-	-		10	90022510
	35	-	-		10	90023510
	45	-	-		7	90024510
	90	-	-		5	90029010
Solar Pumps (BSPP)	LPM	Stages	Model No.		Stages	Model No.
	18	18	90020504		30	90020508
	25	13	90020704		30	-
	30	8	90021004		18	90021011
	45	6	90021504		15	90021511
	70	-	-		10	90022511
	100	-	-		10	90023511
	150	-	-		7	90024511
	270	-	-		5	90029011
Controller Size - L x W x D						
in (mm)		6.28 x 6.28 x 4.02 (159.5 x 159.5 x 102.1)				
Controller Weight						
lbs (kg)		10 (4.5)				
Operating Conditions						
Temperature Range		-13 °F to 122 °F / -25 °C to 50 °C				
Relative Humidity Range		0 to 100% Condensing				
Enclosure Rating		NEMA 4X				

* 45 and 115 V DC for the 0.55kW and 1.1 kW models respectively should not be interpreted as an adequate rated PV array output voltage for any installation. See the PV Solar Array Specifications and System Sizing program for indication of adequate array voltage to provide useful pumping capability.

** Absolute maximum open circuit voltage input to the controller - 300 VOC for 581013000864-SP075HP and 420 VOC for 581014200864-SP150HP

PHOTON SOLARPAK - QUICK INSTALL GUIDE

SOLARPAK INSTALLATION



NOTE: Level control or Pressure Switch control, unable to use both control methods simultaneously.

NOTES



PHOTON SOLARPAK SELECTOR

Franklin's user-friendly Photon SolarPAK Selector helps you determine the optimal system for your solar project. Simply input your location, duty requirements, and solar panel characteristics (if known) and the system will automatically recommend the Photon model and array configuration best for your application.

Corporate
SolarPAK

Selection Criteria

Search Results

Search

Options

BASIC OPERATING CONDITIONS

Total Dynamic Head

200

ft

Flow

10

USgpm

Thread Type

Auto by location

LOCATION

Degrees Latitude

28.21

Degrees Longitude

-80.60

City/State

Satellite Beach FL

Country

USA

Lookup

SOLAR PANEL CHARACTERISTICS

Performance Data Type

STC

Watts (Wmpp)

265

W

Volts (Vmpp)

31

V

Volts (Voc)

38

V

Use Solar Tracker Array☐

Peak Month For Sizing

Annual Average

WIRE

Length

250

ft

Material Type

AWG Copper

Insulation Temperature

75°C

Search

Solar Irradiation

Month	Average Monthly Solar Irradiation (Hours)
Jan	3.1
Feb	3.6
Mar	4.1
Apr	4.6
May	4.8
Jun	5.2
Jul	5.3
Aug	5.0
Sep	4.9
Oct	4.1
Nov	2.7
Dec	2.5

* Above screen shot is illustrative only and is subject to continuous improvement

The Franklin Electric Photon SolarPAK Selector and other information on our series of solar products can be found at: www.franklin-electric.com.au

ASIA

Franklin Electric SEA Pte. Ltd.
17 Changi Business Park Central 1
06-05, Honeywell Building
Singapore 486 073

Phone: +65.6789.6865
Fax: +65.6789.0155

AUSTRALIA / NEW ZEALAND

Franklin Electric Australia Pty. Ltd.
106 - 110 Micro Circuit
Dandenong South, Victoria 3175
Australia

Phone: +61.3.9799.5000
Fax: +61.3.9799.5050
Hotline: 1.300.372.655

BRAZIL

Franklin Electric Indústria de
Motobombas S.A.
Rua Hans Dieter Schmidt, 1501
Zona Industrial Norte -
CEP 89219-504
Joinville - SC - Brazil

Phone: +55 47 3204-5000

CHILE

Franklin Electric Chile Ltda.
Las Garzas, 930 - Galpón E
Quilicura - Santiago - Chile

Phone: +56 2-896 93 40

CHINA

Franklin Electric Shanghai Co. Ltd.
Unit 1002-03, Shanghai
Central Plaza
No. 227, Huang Pi Bei Road
Shanghai 200003, China

Phone: +86.21.6327.0909
Fax: +86.21.6327.0910

EUROPE/MID-EAST/N. AFRICA

Franklin Electric Europa GmbH
Rudolf-Diesel-Straße 20
D-54516 Wittlich, Germany

Phone: +49.6571.105.0
Fax: +49.6571.105.510

INDIA

Franklin Electric India Pvt. Ltd.
DBS-206, 1st Floor
World Trade Tower
Barakhamba Avenue
New Delhi 110 001, India

Phone: +91.11.4308.4697
Fax: +91.11.2341.4740

JAPAN

Franklin Electric International, Inc.
Aoba Bldg. 4F
1-14-7, Sugamo
Toshima-Ku, Tokyo 170-0002,
Japan

Phone: +81.3.5319.1251
Fax: +81.3.5319.1252

KOREA

Franklin Electric B.V. Korea
Room 502 (BangBaeDong,
BangBae The O Superium#1)
3-4 SeoCho-Daero
SeoCho-Gu, Seoul 137-974
Republic of Korea

Phone: +82.2.3473.3353
Fax: +82.2.3473.3352

LATIN AMERICA

Motores Franklin S.A. de C.V.
Avenida Churubusco #1600
(Bodega #16)
Col. Francisco I. Madero
Monterrey, N.L.
Mexico C.P. 64560

Phone: +52.81.8000.1000
Fax: +52.818.864.8445

SOUTH AFRICA

Franklin Electric South
Africa Pty. Ltd.
P.O. Box 8136, Edengie, 1613
13 Engwena Road, Sebenza,
Edenvale, 1610
South Africa

Phone: +27.11.723.6500
Fax: +27.11.609.2417

UNITED STATES

Franklin Electric Co., Inc.
9255 Coverdale Road
Fort Wayne, Indiana 46809
USA

Phone: +1.260.824.2900
Fax: +1.260.824.2909



Franklin Electric