ARTESYN HPR12K SERIES

12KW Rack for HPS3000



PRODUCT DESCRIPTION

Advanced Energy's Artesyn HPR12K Series is a 12KW Rack for HPS3000. One standard 19 in rack shelf can fit down 4 units of HPS3000.

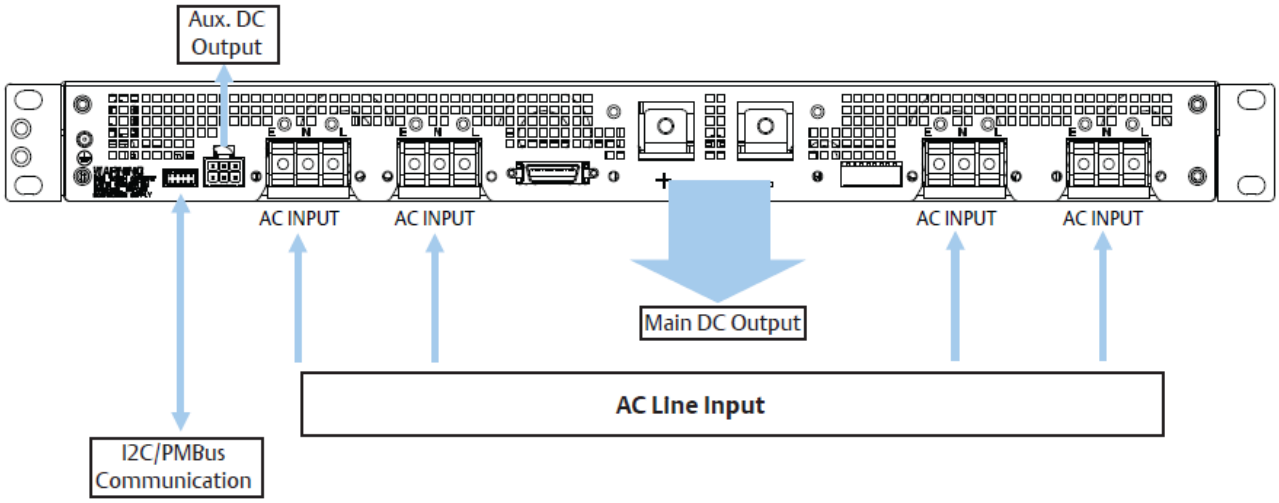
AT A GLANCE

©2022 Advanced Energy Industries, Inc.

Downloaded from Arrow.com.

GENERAL INSTALL

Connecting the input power cable, output load cable, and communication wire according to the below figure.



Downloaded from Arrow.com.

GENERAL SETTING

Unless otherwise specified, when the PSON# switch is de-asserted (48V o/p is disabled). It means the Manual ON/OFF DIP switch SW1 should default according to the below table. And It must be checked before shipping.

Table 1. DIP switch SW1 setting as a default

Power Supplies Status	PSU 1#		PSU 2#		PSU 3#		PSU 4#	
	CH1	CH2	CH3	CH 4	CH5	CH6	CH7	CH8
OFF	Up	Down	Up	Down	Up	Down	Up	Down

Note 1. The status Down means set to ON position. The status UP means set to OFF position.
Note 2. Programming Switch SW1 default settings: PSON switches: OFF PSKILL switches: ON

Downloaded from Arrow.com.

ON/OFF OPERATION (PSON#)

Manual ON/OFF Operation

The DIP switch SW1 is used to turn on or off the PSU manually. The PSU in SLOT1 is turned on when the CH1 of DIP switch SW1 turns on. For the other PSU see Table 2.

Note: DIP switch CH2 should be set to ON as a default. In case CH2 is set to off, the power supply in slot 1 will not turn on even if CH1 is set to ON position.

Table 2. PSON# Switch Characteristics

Power Supplies Status	PSU 1#		PSU 2#		PSU 3#		PSU 4#	
ON	Down	Down	Down	Down	Down	Down	Down	Down
OFF	UP	Down	UP	Down	UP	Down	UP	Down

Note. The status Down means set to ON position. The status UP means set to OFF position.

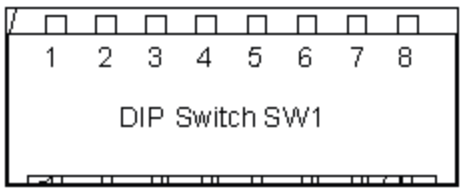


Figure 1. DIP Switch for ON/OFF Operation

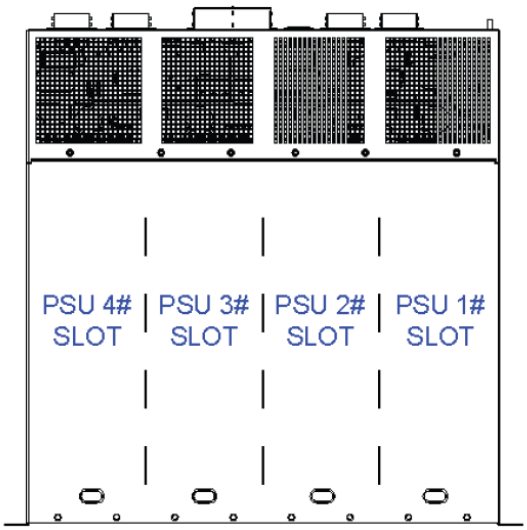


Figure 2. The SLOTs define of Rack

Downloaded from Arrow.com.

ON/OFF OPERATION (PSON#)

Remote ON/OFF

The per PSON# signal is required to remotely turn on/off the power supply. PSON# is an active low signal that turns on the +48VDC power rail. When this signal is not pulled low by the system, or left open, the +48VDC output turns off. The 5Vsb output remains on. This signal is pulled to a standby voltage by a pull-up resistor internal to the power supply. The power supply fan(s) shall operate at the lowest speed.

Table 3. PSON# Signal Characteristics

Signal Type	Accepts an open collector/drain input from the system. Pulled-up to the 3V3sb located inside the power supply.	
PSON# = Low	ON	
PSON# = Open	OFF	
Logic level low (power supply ON)	MIN	MAX
Logic level high (power supply OFF)	0V	0.4V
Source current, Vpson = low	2.4V	3.4V
		4mA
Power up delay: T pson_on_delay	5msec	400msec

Refer to IPS of HPS3000-9 PN: 41966008950

Downloaded from Arrow.com.

PMBus COMMUNICATION

The per power supplies can be communicated with the computer by our GUI interface hardware and software.



Downloaded from Arrow.com.

CONNECTOR DEFINE FOR I/O

Main Output Connection

Table 4. Main Output Connection Definition			
No.	Designation	Identification	Terminal Type
+48Vdc	+	MAIN OUTPUT	Ring Lug, M6 screw
+48Vdc	-	MAIN OUTPUT RETURN	Ring Lug, M6 screw
Mating Terminal screw: SUPPLY TECHNOLOGIES 6040289-0010-EC-A			

PMBus Communication Connection

Use output connector below table 6, Description named CN1.

Table 5. PMBus Output Connector	
Self Connector	Mating Connector
Landwin 2051P1000T	Housing: Landwin 2050S1000 or JST PHDR-10VS
(Astec P/N: 13866002800)	Pins: Landwin 2053T011P or JST SPHD-002T-P0.5 (28-24) JST SPHD-001T-P0.5 (26-22)

Table 6. Output Connection Definitions for PMBus			
Signal	Name Description	Pin Qty.	Pin Number (s)
SCL	Serial Clock Signal	1	4
SDA	Serial Data Signal	1	2
Ishare	Load Share Bus	1	7
5Vsb	5Vsb External Bus	1	1
Sys_GND	Secondary Return	1	3
Unused		1	5, 6, 8, 9, 10

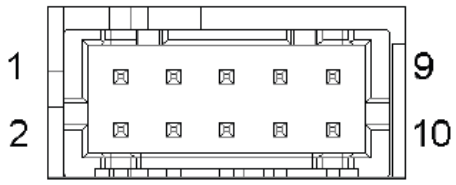


Figure 3. Connector CN1

Downloaded from Arrow.com.

CONNECTOR DEFINE FOR I/O

5V Stand-By Auxiliary Output CN2

Table 7. PMBus Output Connector	
Self Connector	Mating Connector
Tyco: 1-794528-1	Tyco: 794657-6
(Astec P/N: 13870012770)	

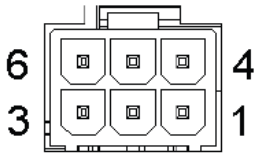


Figure 4. Connector CN2

Table 8. Output Connection Definitions for 5V Standby			
Signal	Name Description	Pin Qty.	Pin Number (s)
Stby_Rtn_Sense	Return sense for Stby gnd	1	1
5Vsb	5Vsb External Bus	2	2,3
Sys_GND	Standby GND	2	5,6
Unused		1	4

Signal Output Connector CN3

Table 9. Single Output Connector	
Self Connector	Mating Connector
Tyco: 2-5178238-4	AdamTech: S2B-A-PVD-026
(Astec P/N: 13870011610)	

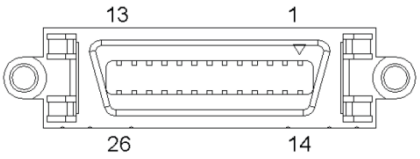


Figure 5. Connector CN3

Downloaded from Arrow.com.

CONNECTOR DEFINE FOR I/O

Table 10. Output Connection Definitions for 5V Standby

Signal	Name Description	Pin Qty	Pin Number (s)
SYS_GND	Standby GND	2	1,14
UNIT1_PRESENT#	Power supply present for Unit 1	1	2
UNIT2_PRESENT#	Power supply present for Unit 2	1	3
UNIT3_PRESENT#	Power supply present for Unit 3	1	4
UNIT4_PRESENT#	Power supply present for Unit 4	1	5
UNIT1_DCOK/PWOK#	Power OK output for Unit 1	1	6
UNIT2_DCOK/PWOK#	Power OK output for Unit 2	1	7
UNIT3_DCOK/PWOK#	Power OK output for Unit 3	1	8
UNIT4_DCOK/PWOK#	Power OK output for Unit 4	1	9
UNIT1_ACOK#	AC input present for Unit 1	1	10
UNIT2_ACOK#	AC input present for Unit 2	1	11
UNIT3_ACOK#	AC input present for Unit 3	1	12
UNIT4_ACOK#	AC input present for Unit 4	1	13
UNIT1_PSON#	Power enable input for Unit 1	1	15
UNIT2_PSON#	Power enable input for Unit 2	1	16
UNIT3_PSON#	Power enable input for Unit 3	1	17
UNIT4_PSON#	Power enable input for Unit 4	1	18
UNIT1_PSKILL	Minimize arching damage to the power pins	1	19
UNIT2_PSKILL	Minimize arching damage to the power pins	1	20
UNIT3_PSKILL	Minimize arching damage to the power pins	1	21
UNIT4_PSKILL	Minimize arching damage to the power pins	1	22
UNIT1_#ALERT	Warning signal	1	23
UNIT2_#ALERT	Warning signal	1	24
UNIT3_#ALERT	Warning signal	1	25
UNIT4_#ALERT	Warning signal	1	26

Downloaded from Arrow.com.

CONNECTOR DEFINE FOR I/O

Input Connection Definition

For Functional Test (NHR – initial testing), the following connection applies.

Table 11. Output Connection Definitions for 5V Standby			
NO.	Designation	Identification	Terminal Type
L	VINP	Input Voltage Positive	Ring Lug, #12 screw
N	VINN	Input Voltage Negative	Ring Lug, #12 screw
E	MGND	Module Ground (chassis)	Mounting Hardware

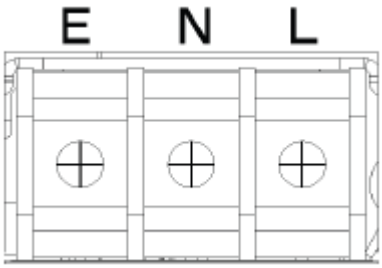


Figure 6. Input Connector

Table 12. Single Output Connector	
Self Connector	Mating Connector
Bussman: A207403R46	Molex: 19073-0222 or Equivalent
(Astec P/N: 15000300070)	

Downloaded from Arrow.com.

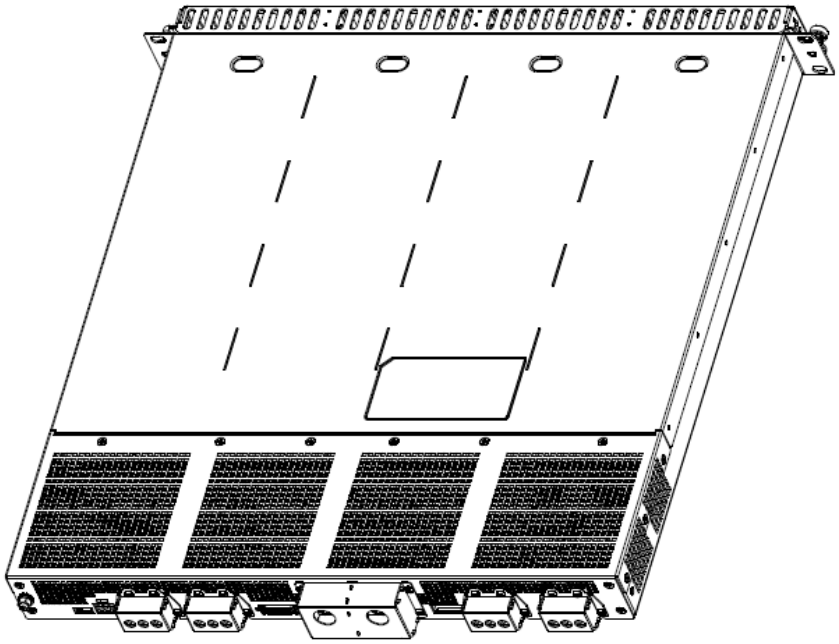
MODEL NUMBERS

Standard	PSU
HPR12K-00	HPS3000-9
HPR12K-00-001	HPS3000-9-001

Downloaded from Arrow.com.

MECHANICAL SPECIFICATIONS

Mechanical Outlines – HPR12K-00

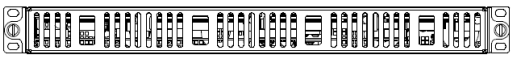


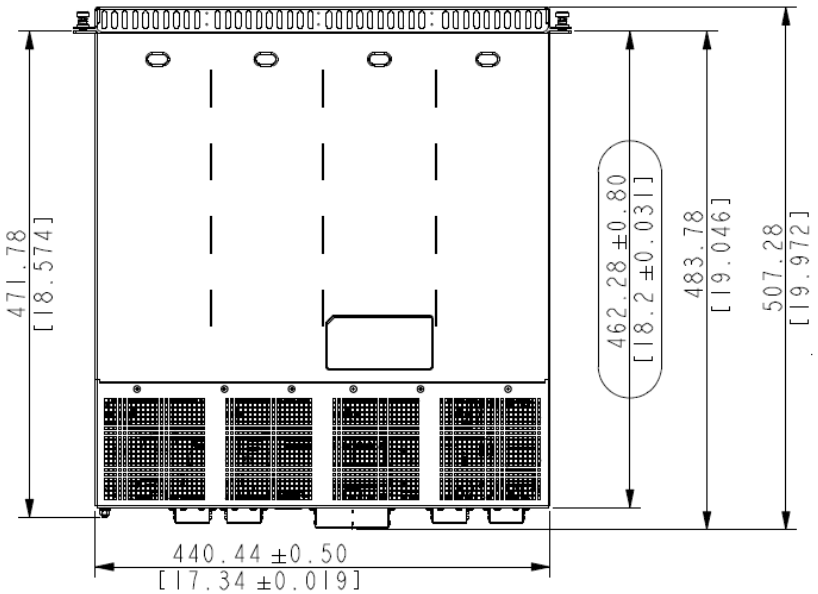
3D VIEW

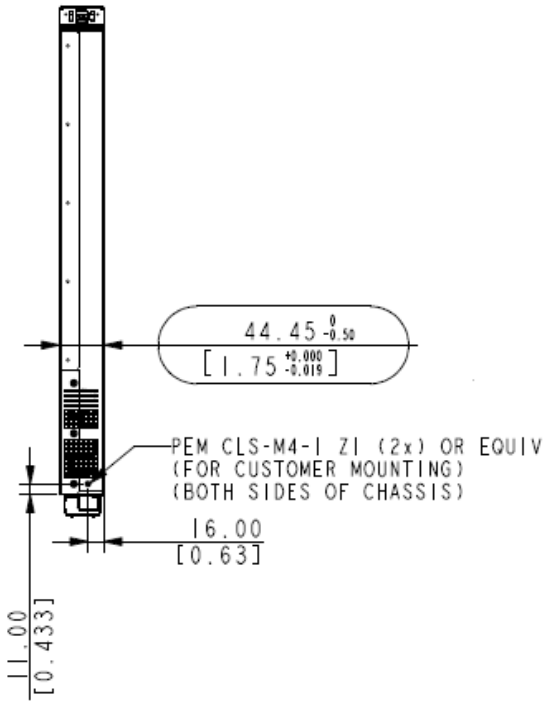
Downloaded from Arrow.com.

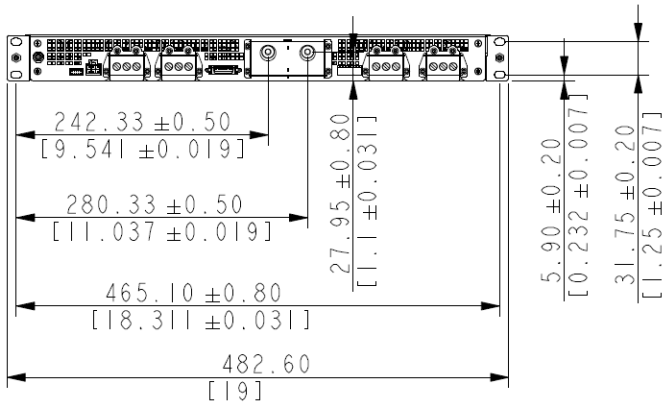
MECHANICAL SPECIFICATIONS

Mechanical Outlines – HPR12K-00





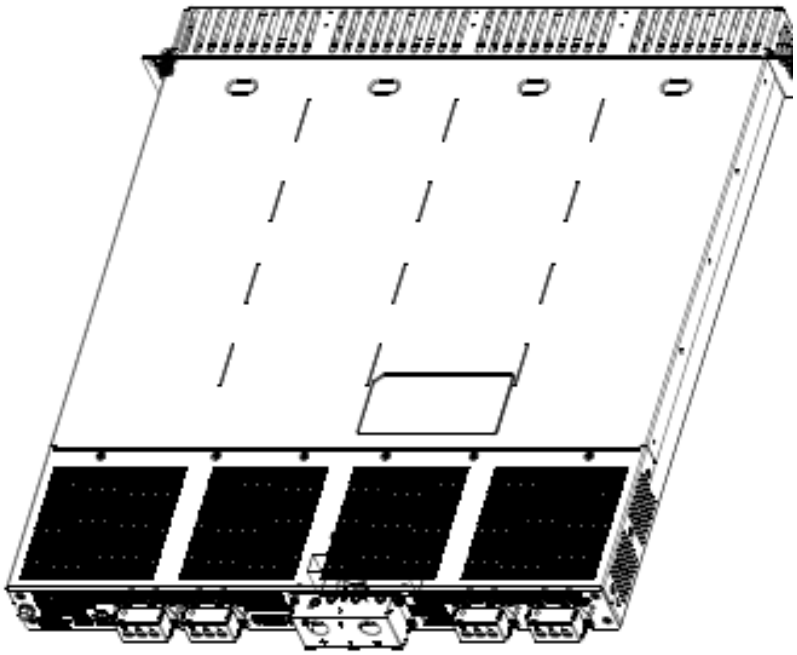




Downloaded from Arrow.com.

MECHANICAL SPECIFICATIONS

Mechanical Outlines – HPR12K-00-001

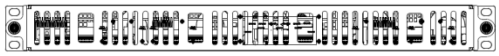


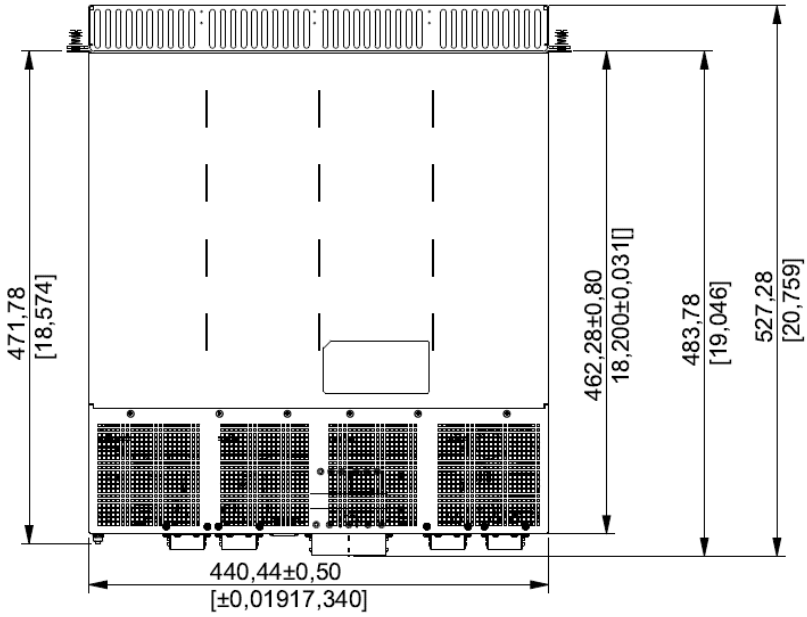
3D VIEW

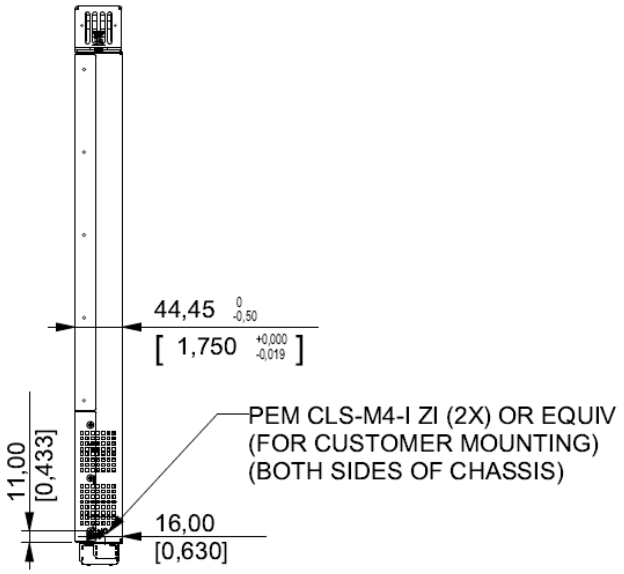
Downloaded from Arrow.com.

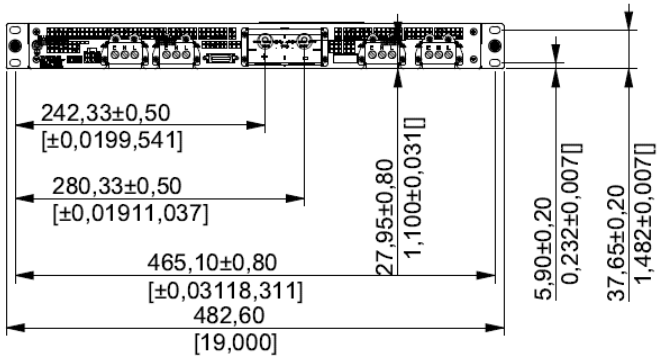
MECHANICAL SPECIFICATIONS

Mechanical Outlines – HPR12K-00-001









Downloaded from Arrow.com.

RECORD OF REVISION AND CHANGES

Issue	Date	Description	Originators
1.0	09.21.2022	First Issue	Zoey Yasheng

Downloaded from Arrow.com.

ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

PRECISION | POWER | PERFORMANCE

For international contact information,
visit advancedenergy.com.

powersales@aei.com (Sales Support)
productsupport.ep@aei.com (Technical Support)
+1 888 412 7832

Specifications are subject to change without notice. Not responsible for errors or omissions. ©2022 Advanced Energy Industries, Inc. All rights reserved. Advanced Energy®, and AE® are U.S. trademarks of Advanced Energy Industries, Inc.

HPR12K - Rev. 09.29.22_#1.1

Downloaded from Arrow.com.