

**Regulator Flow Curves**  
**For**  
**Bulk Gas Systems, Cylinder Gas Cabinets and Gas Distribution Systems**  
**Report # 30008300 Rev 2**  
**May 23, 2003**

**Scope:** This document is a reference guide to help customers determine an appropriate AP Tech pressure regulator model based on system flow requirements. It is an array of regulator flow curves for the most popular AP Tech pressure regulators used in bulk gas systems, cylinder gas cabinets and gas distribution systems. For information and specifications related to the specific model regulator, please refer to the catalog data sheet.

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## General Recommendations

Regulator Series	Maximum Source Pressure (psig)	Maximum Outlet Pressure (psig)	Flow Coefficient, Cv	Recommended Maximum Flow (slm nitrogen)
<a href="#">AP1010</a>	3,500	200	0.09	100
<a href="#">AP1010 HF</a>	3,500	200	0.15	200
<a href="#">AP1210</a>	1,700	100	0.9	800
<a href="#">AP1210 HF</a>	1,700	100	1.2	1,000
<a href="#">AP1210 FC</a>	300	100	0.65	1,500
<a href="#">AP1410T</a>	2,300	100	0.45	400
<a href="#">AP1510</a>	3,500	100	0.09	100
<a href="#">AP1910 HF</a>	3,500	100	0.17	400
<a href="#">AP9000</a>	1,700	100	3.0	2,000
<a href="#">AP9030</a>	1,700	300	3.0	2,000
<a href="#">AP9100</a>	800	100	4.0	5,000

The maximum recommended flow might not be achievable depending on the inlet pressure. Please refer to specific flow curve conditions.

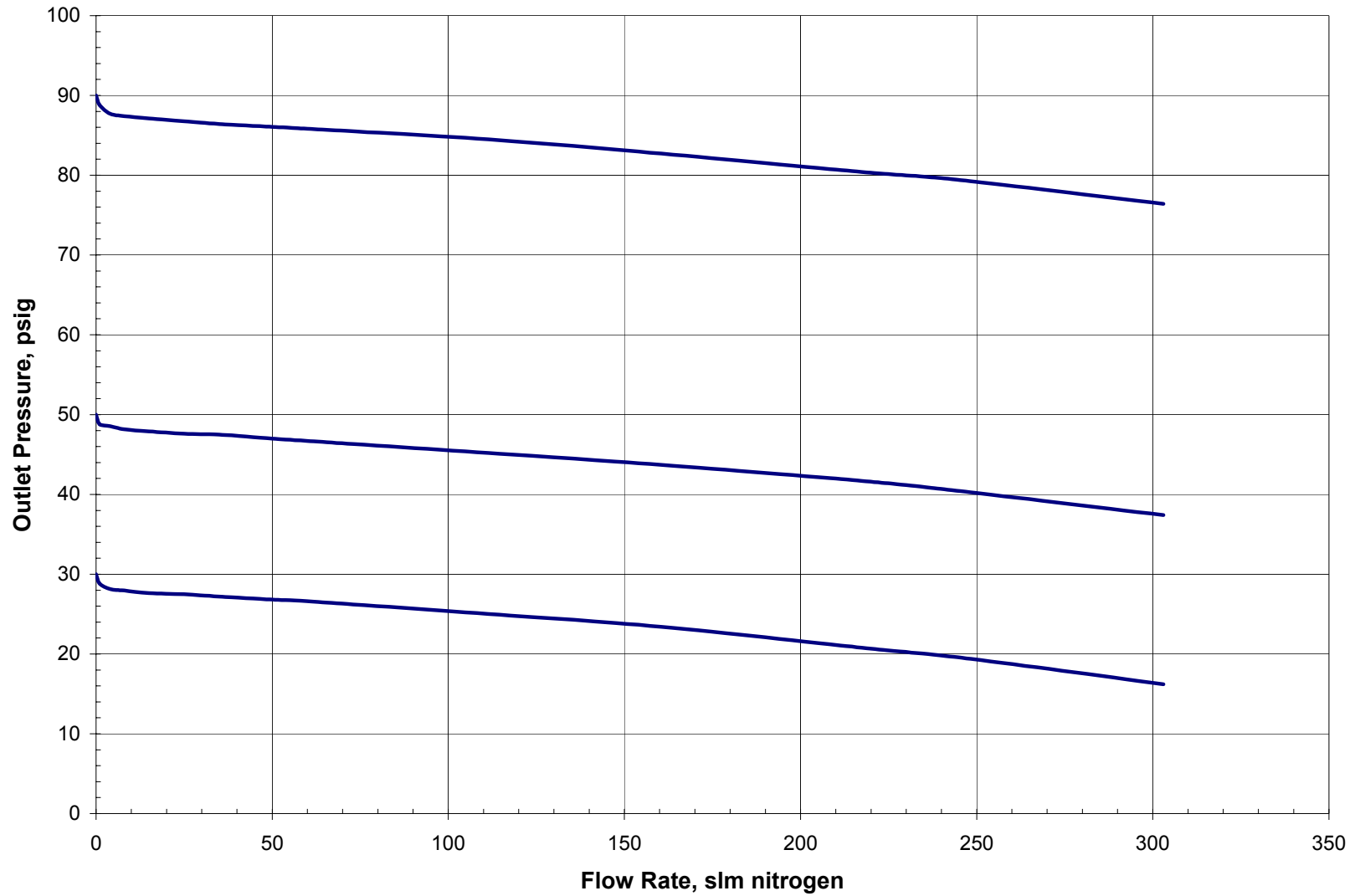
For applications where the inlet pressure is above 600 psig, use the 600 psig inlet pressure flow curve as the change in flow performance due to higher inlet pressure will not significantly change the shape of the flow curve.

Most regulator series are available with higher outlet pressure ranges although the source pressure may be lowered for certain models. Refer to the data sheet for the specific regulator or consult the factory to determine availability and specifications.

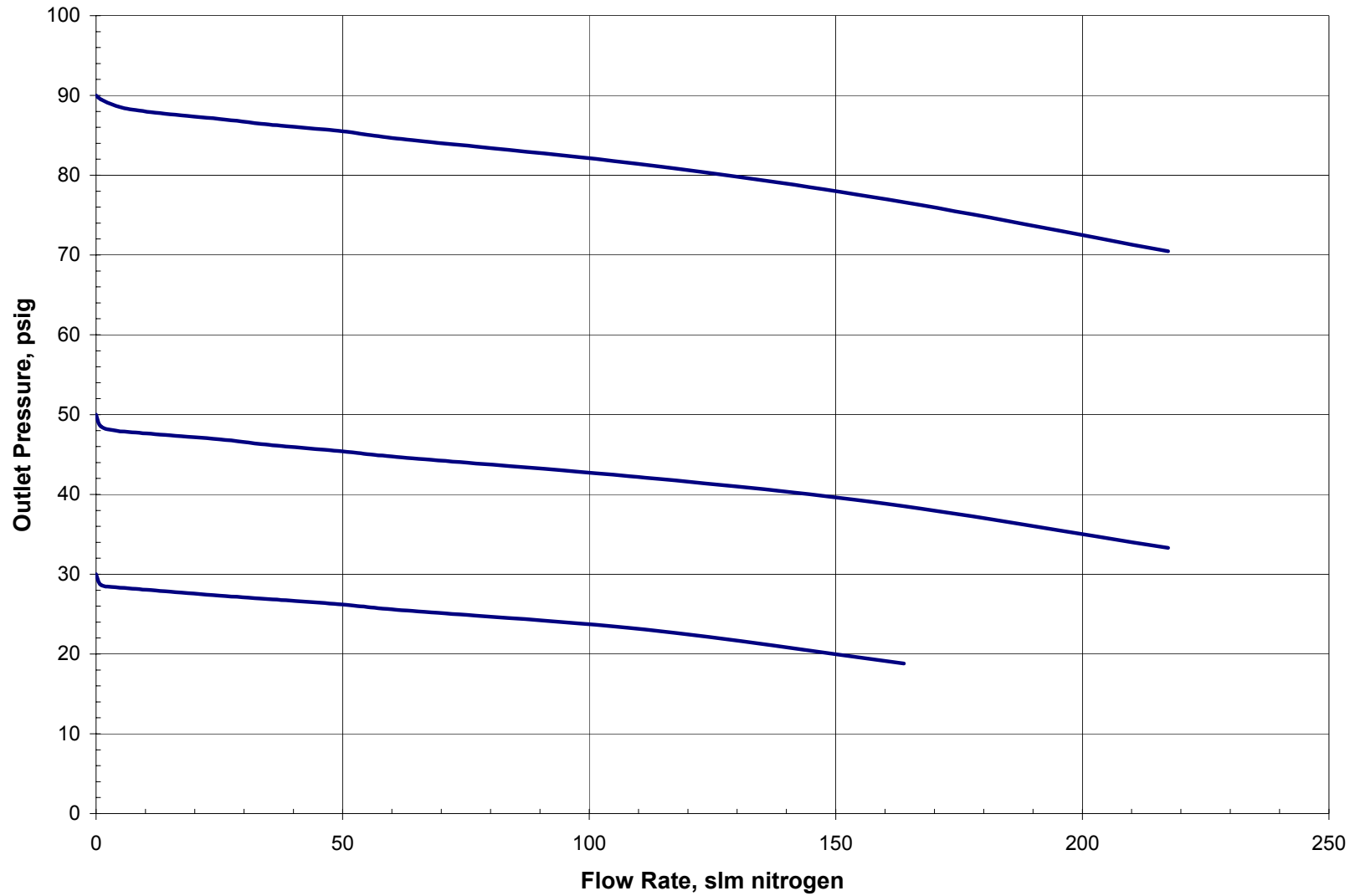
## AP1010 Flow Curve Index

Series	Inlet Pressure (psig)	Outlet Pressures (psig)	Connection Size	Flow Curve Number
AP1010	600	90, 50, 30	1/4 inch	<a href="#">AP1010-001</a>
	300	90, 50, 30	1/4 inch	<a href="#">AP1010-002</a>
	150	90, 50, 30	1/4 inch	<a href="#">AP1010-003</a>
	100	75, 50, 30	1/4 inch	<a href="#">AP1010-004</a>
	50	30	1/4 inch	<a href="#">AP1010-005</a>

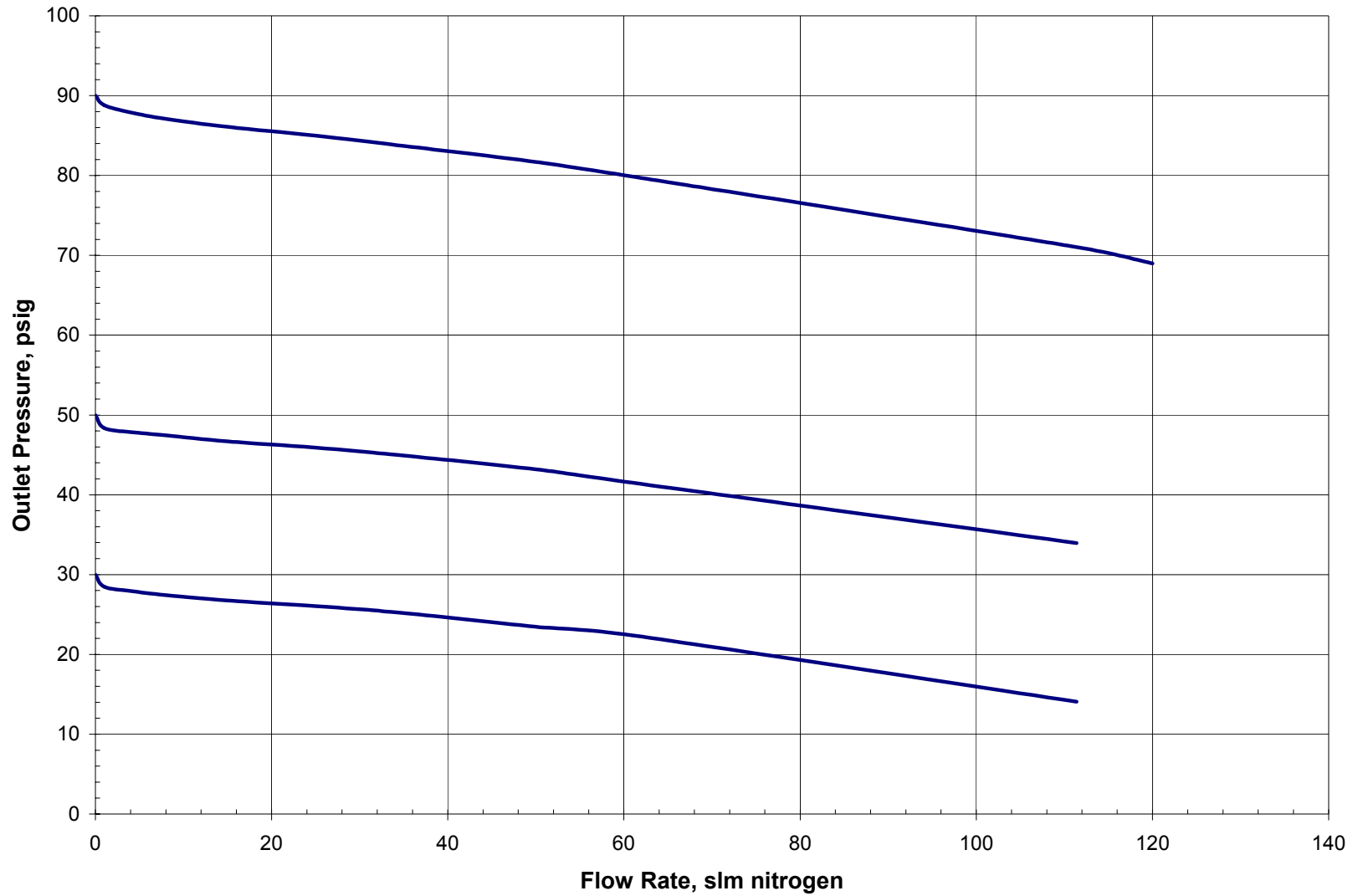
**AP1010S 2PW FV4 FV4**  
Flow Curve at 600 psig Inlet Pressure



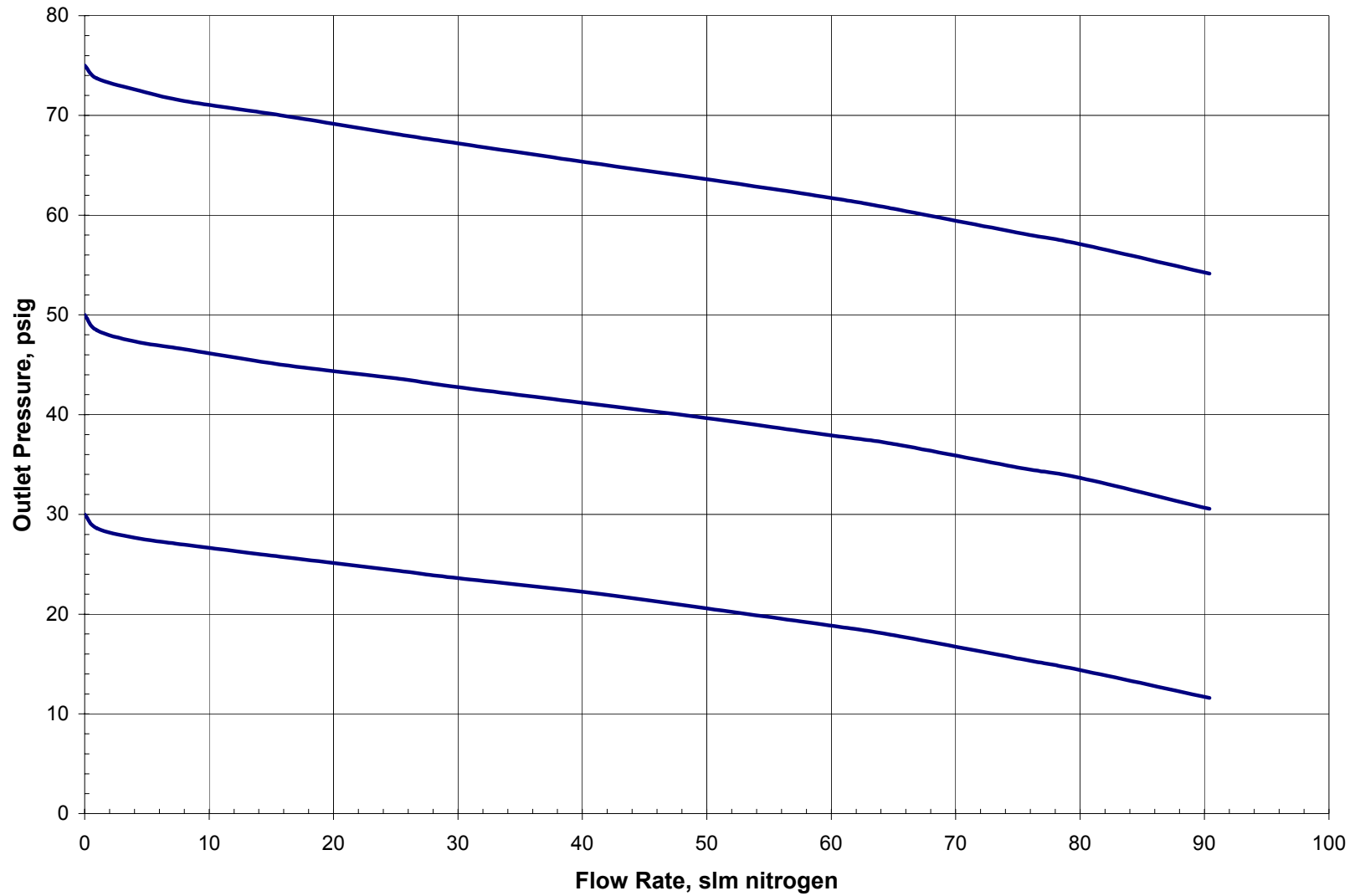
**AP1010S 2PW FV4 FV4**  
Flow Curve at 300 psig Inlet Pressure



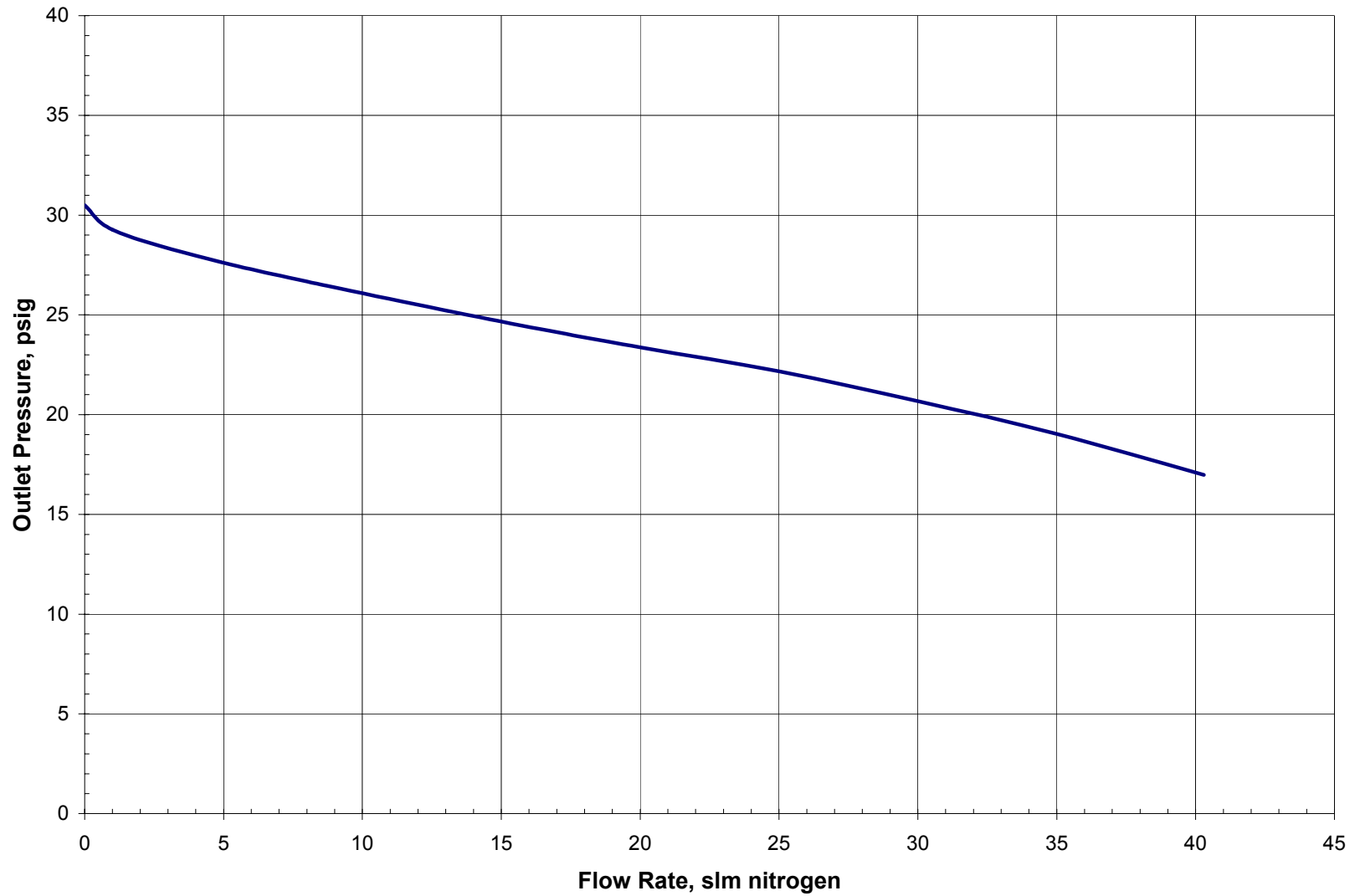
**AP1010S 2PW FV4 FV4**  
Flow Curve at 150 psig Inlet Pressure



**AP1010S 2PW FV4 FV4**  
Flow Curve at 100 psig Inlet Pressure



**AP1010S 2PW FV4 FV4**  
Flow Curve at 50 psig Inlet Pressure

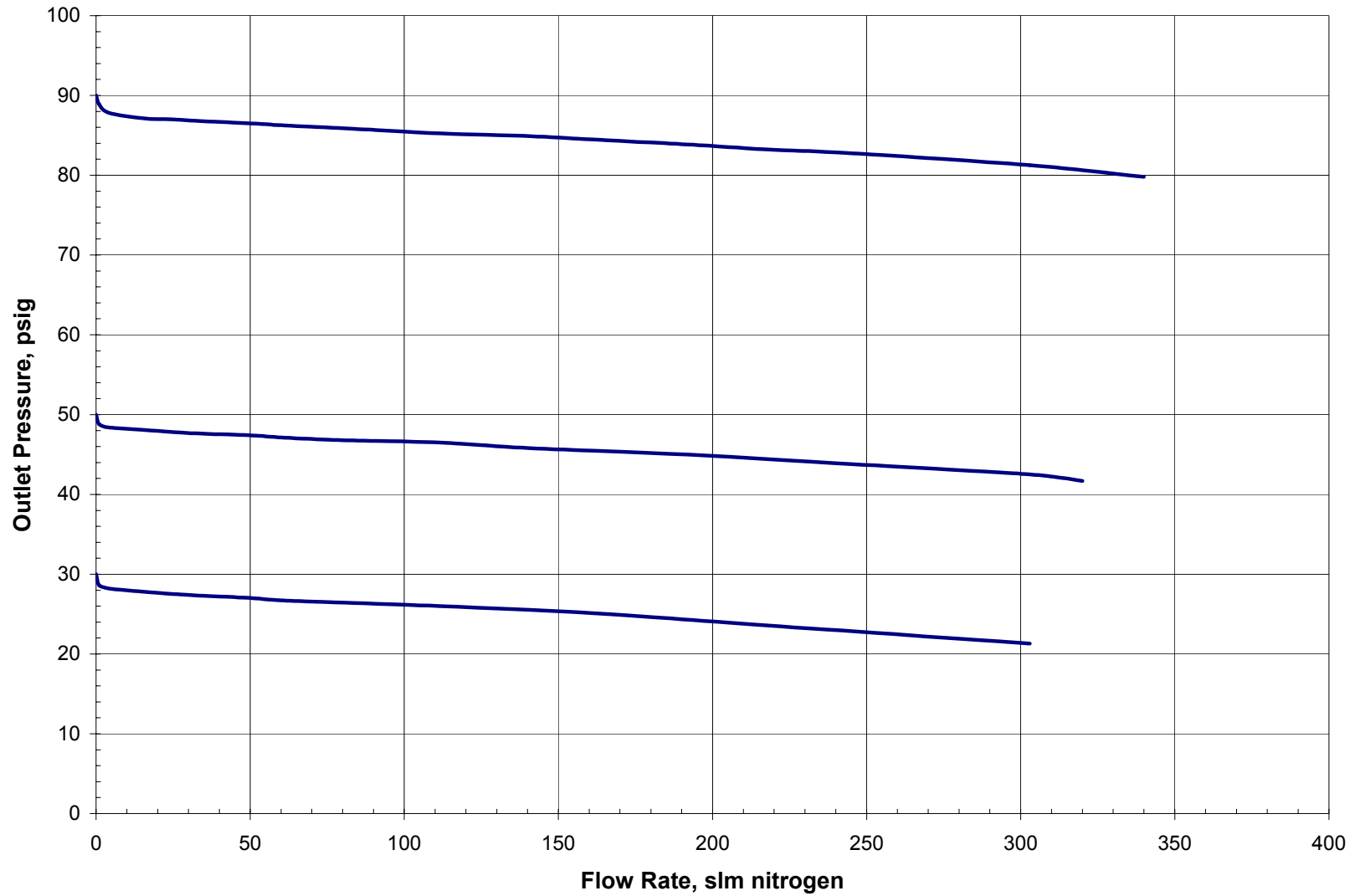




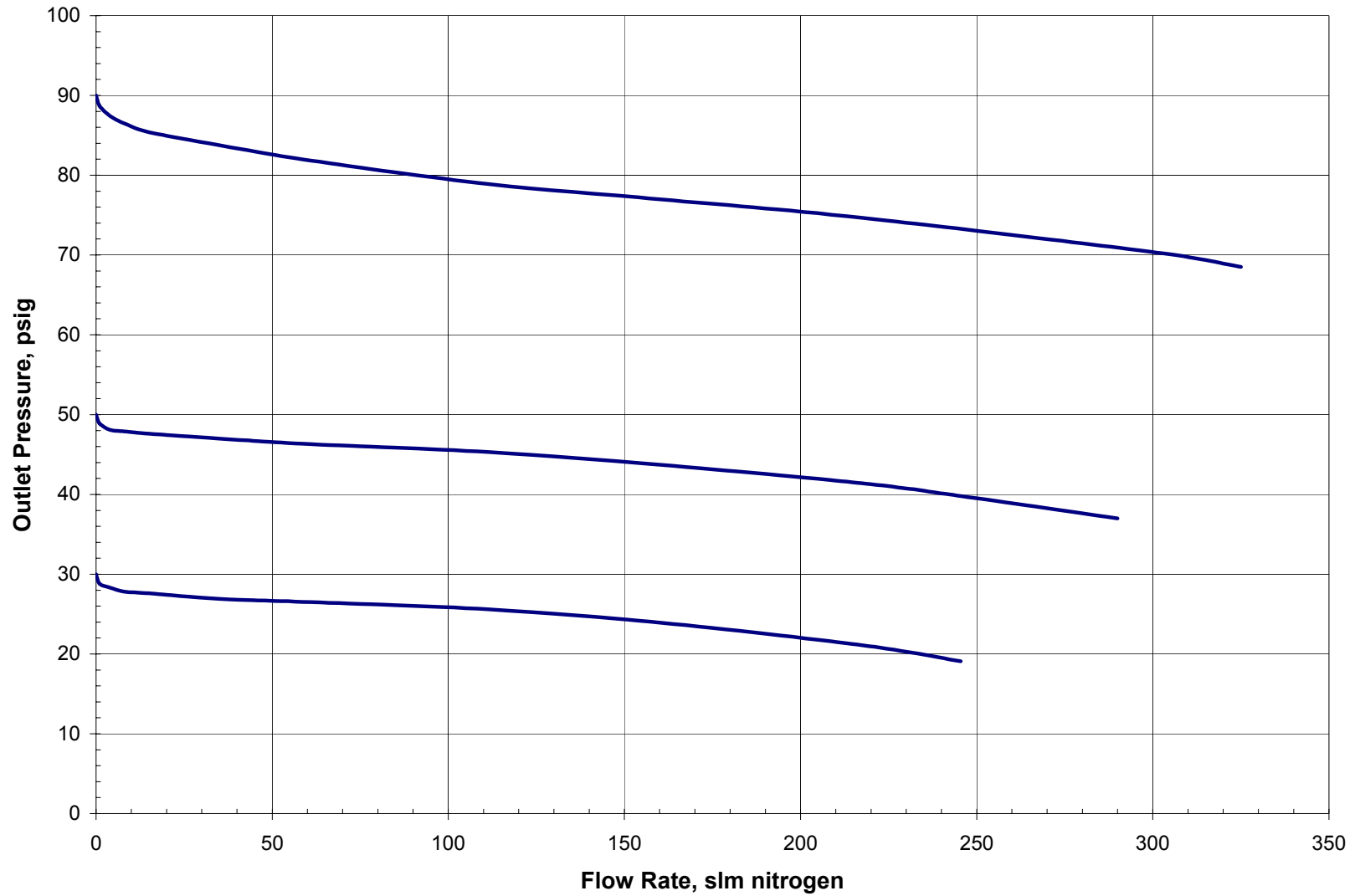
## AP1010 HF Flow Curve Index

Series	Inlet Pressure (psig)	Outlet Pressures (psig)	Connection Size	Flow Curve Number
AP1010 HF	600	90, 50, 30	1/4 inch	<a href="#">AP1010HF-001</a>
	300	90, 50, 30	1/4 inch	<a href="#">AP1010HF-002</a>
	150	90, 50, 30	1/4 inch	<a href="#">AP1010HF-003</a>
	100	75, 50, 30	1/4 inch	<a href="#">AP1010HF-004</a>
	50	30	1/4 inch	<a href="#">AP1010HF-005</a>

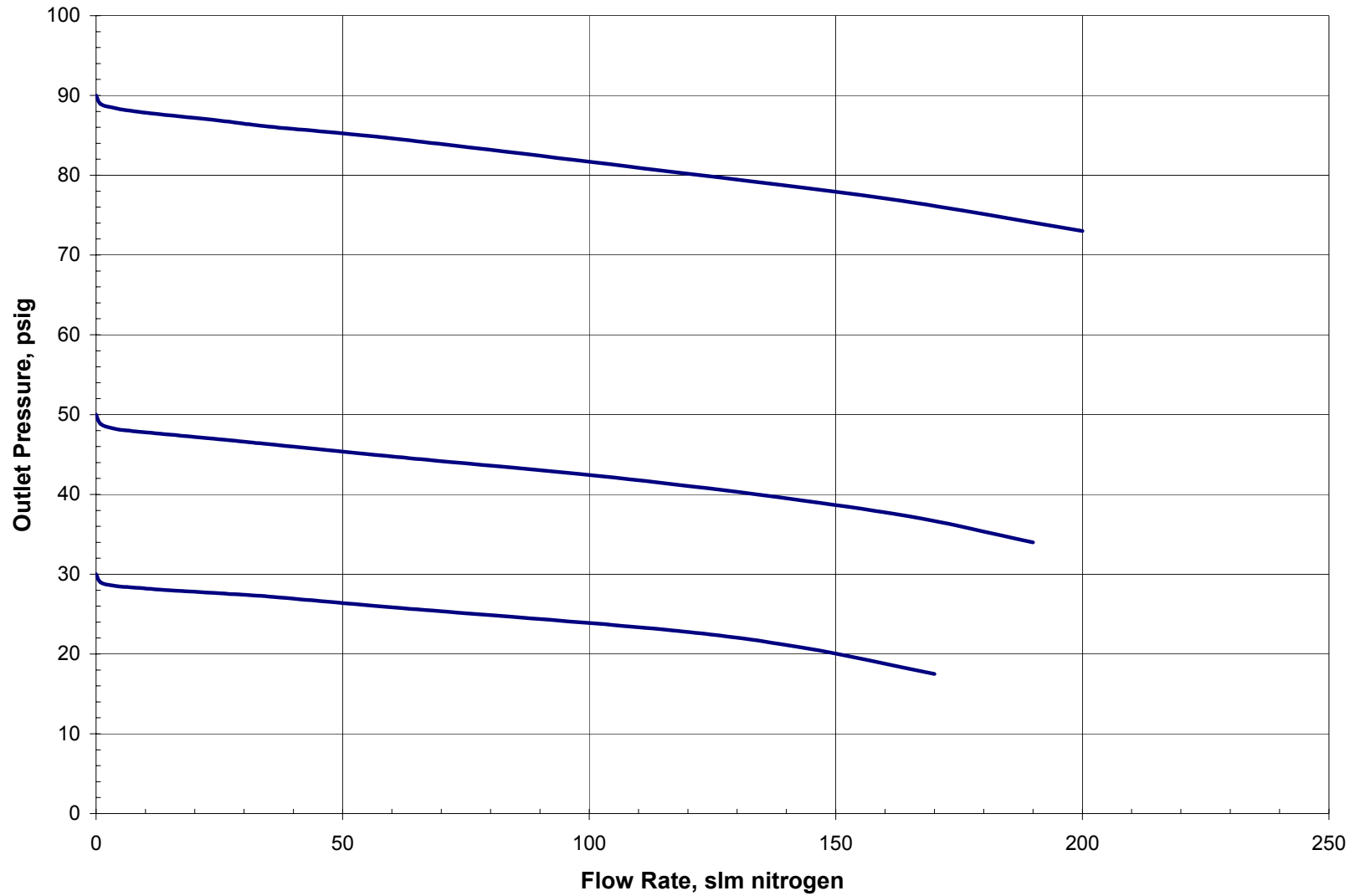
**AP1010S 2PW FV4 FV4 HF**  
Flow Curve at 600 psig Inlet Pressure



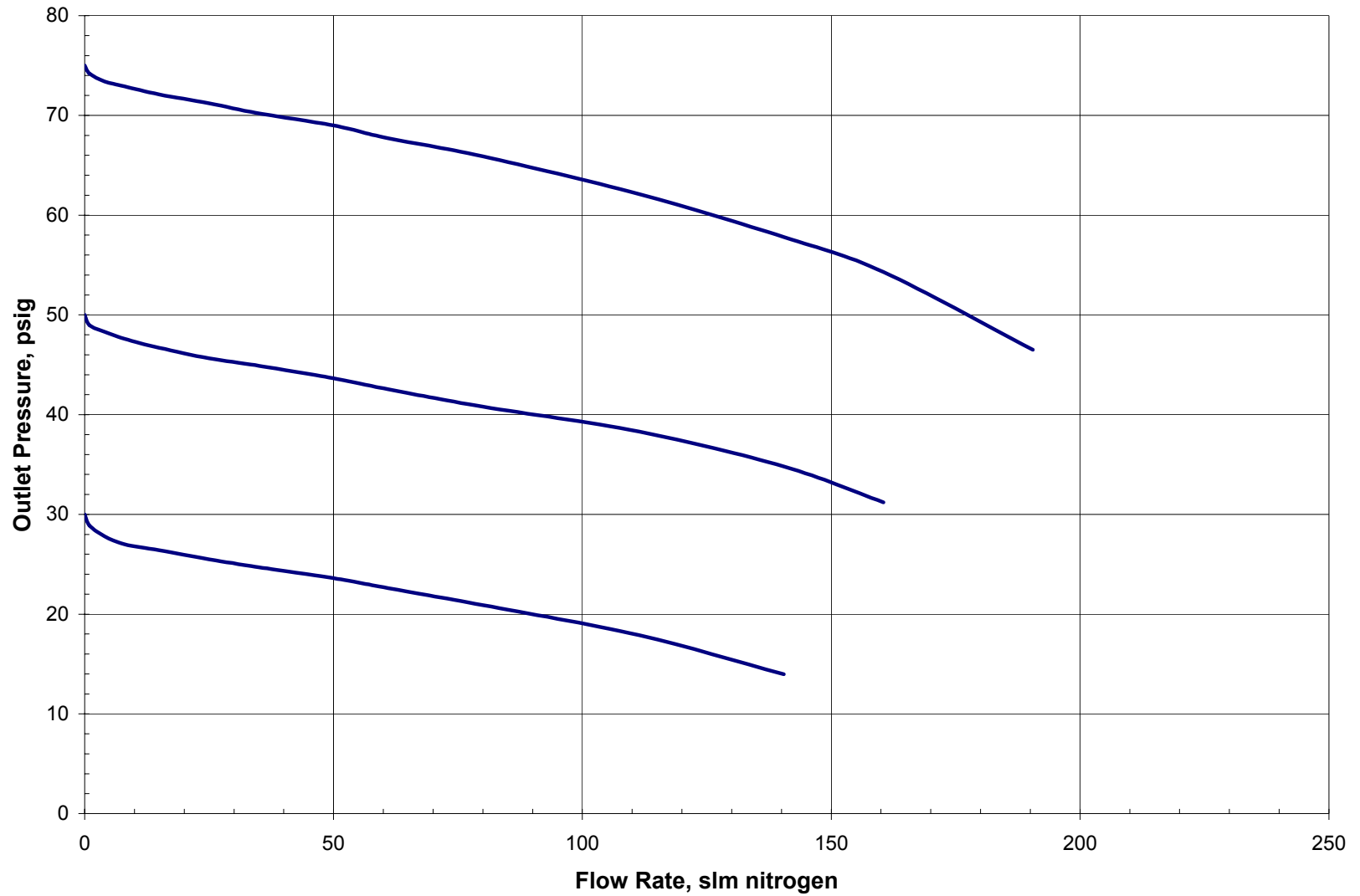
**AP1010S 2PW FV4 FV4 HF**  
Flow Curve at 300 psig Inlet Pressure



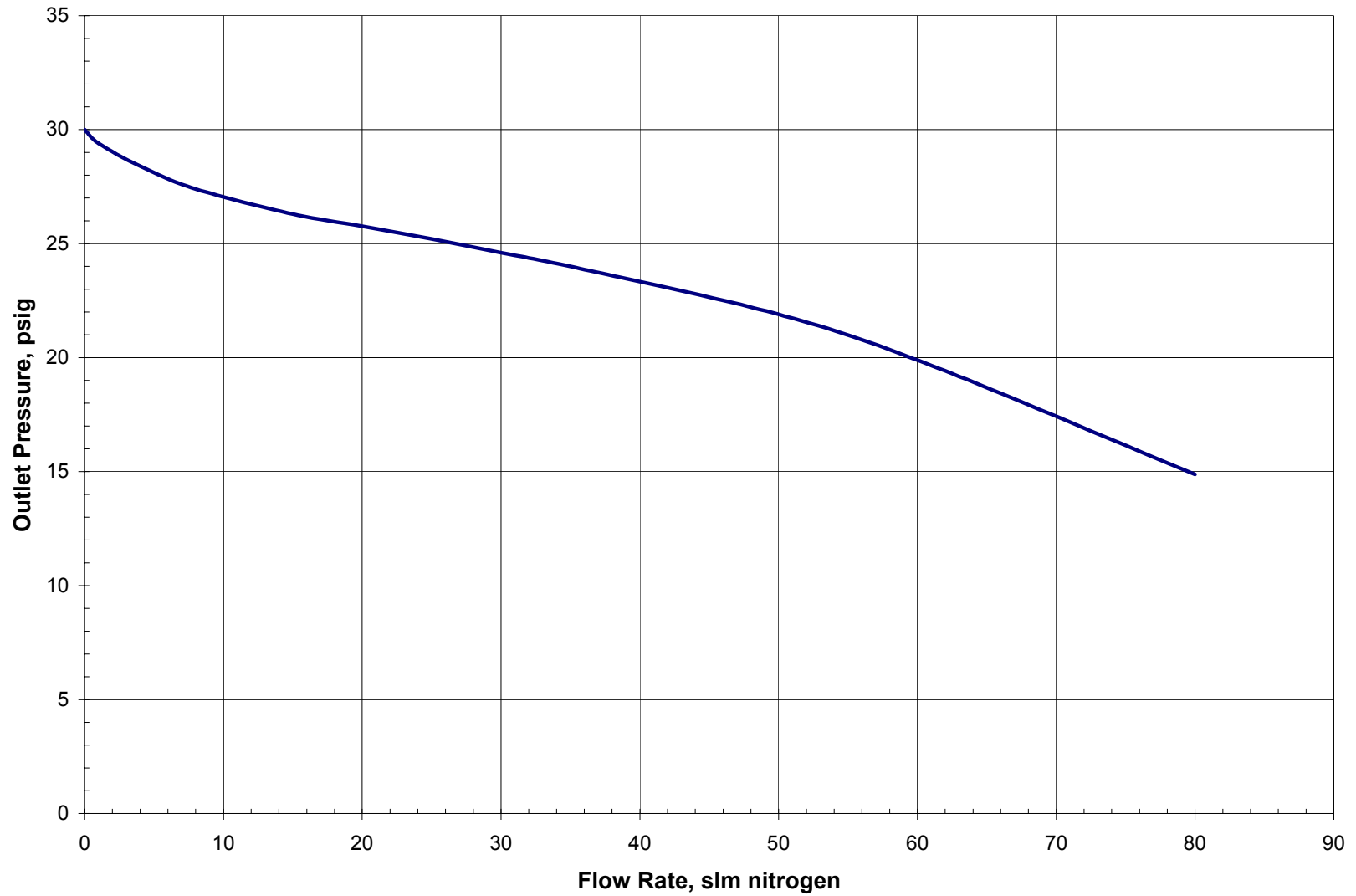
**AP1010S 2PW FV4 FV4 HF**  
Flow Curve at 150 psig Inlet Pressure



**AP1010S 2PW FV4 FV4 HF**  
Flow Curve at 100 psig Inlet Pressure



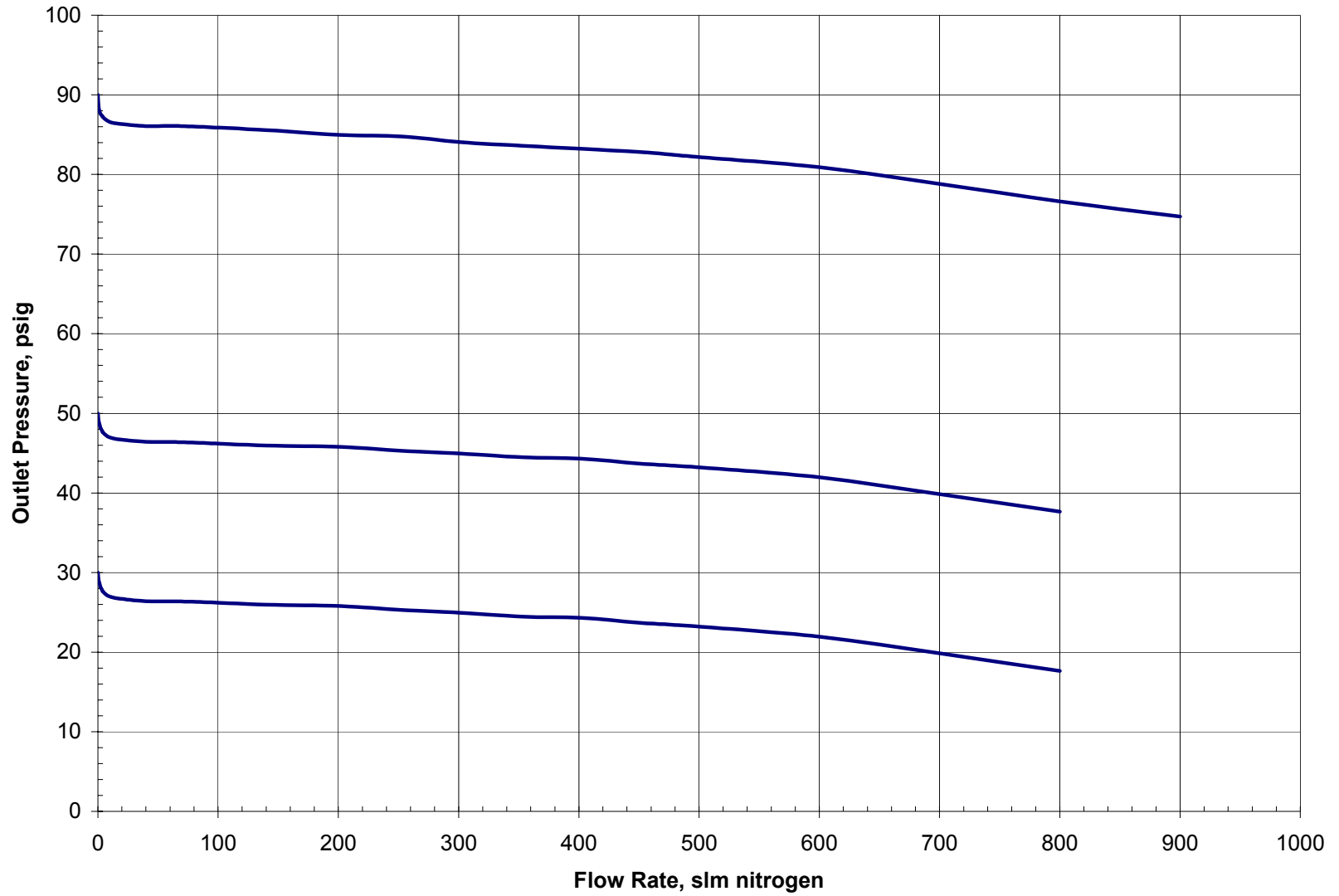
**AP1010S 2PW FV4 FV4 HF**  
Flow Curve at 50 psig Inlet Pressure



## AP1210 Flow Curve Index

Series	Inlet Pressure (psig)	Outlet Pressures (psig)	Connection Size	Flow Curve Number
AP1210	600	90, 50, 30	1/2 inch	<a href="#">AP1210-001</a>
			3/4 inch	<a href="#">AP1210-002</a>
	300	90, 50, 30	1/2 inch	<a href="#">AP1210-003</a>
			3/4 inch	<a href="#">AP1210-004</a>
	150	90, 50, 30	1/2 inch	<a href="#">AP1210-005</a>
			3/4 inch	<a href="#">AP1210-006</a>
	100	75, 50, 30	1/2 inch	<a href="#">AP1210-007</a>
			3/4 inch	<a href="#">AP1210-008</a>
	50	30	1/2 inch	<a href="#">AP1210-009</a>
			3/4 inch	<a href="#">AP1210-010</a>

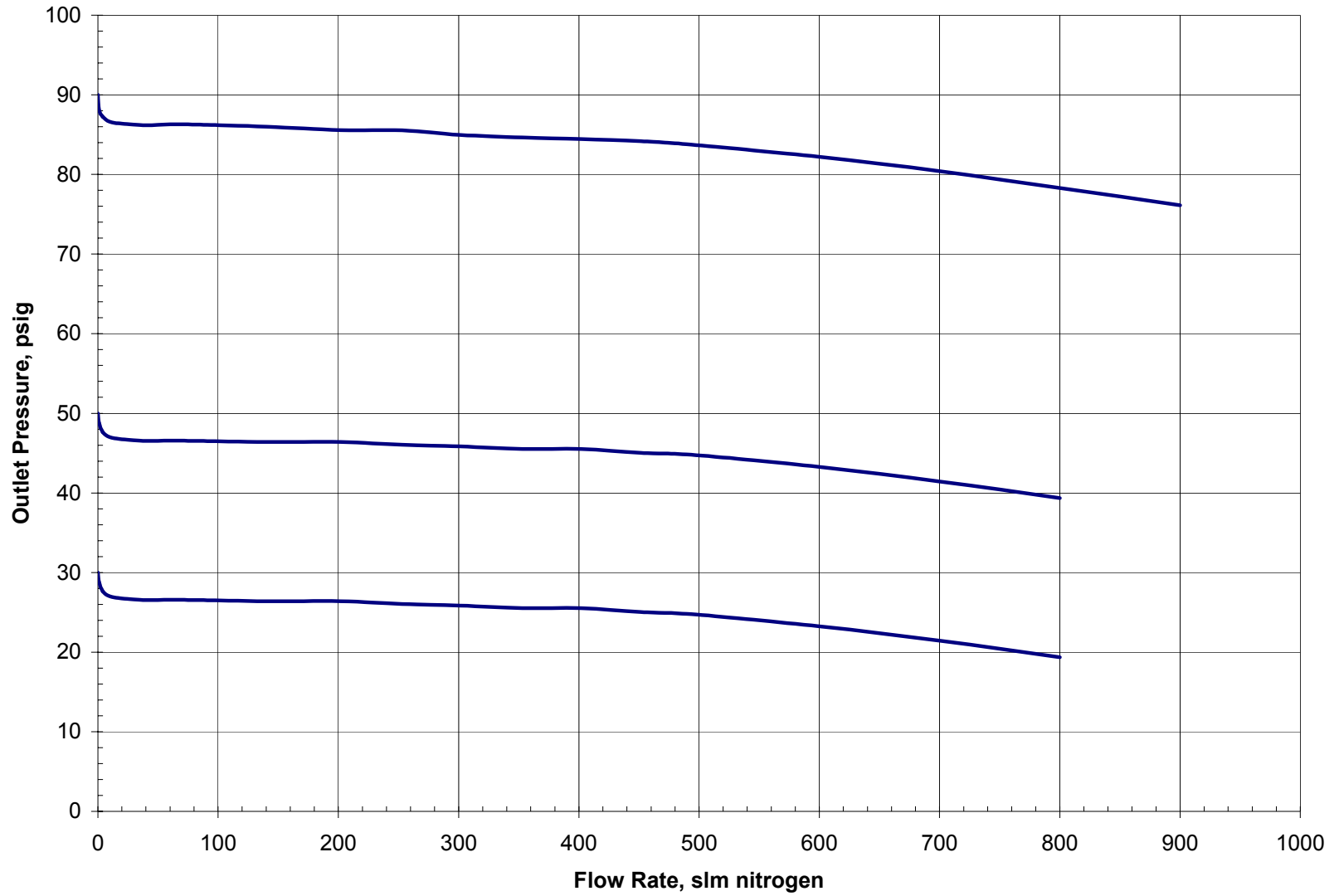
**AP1210S 2PW FV8 FV8**  
Flow Curve at 600 psig Inlet Pressure



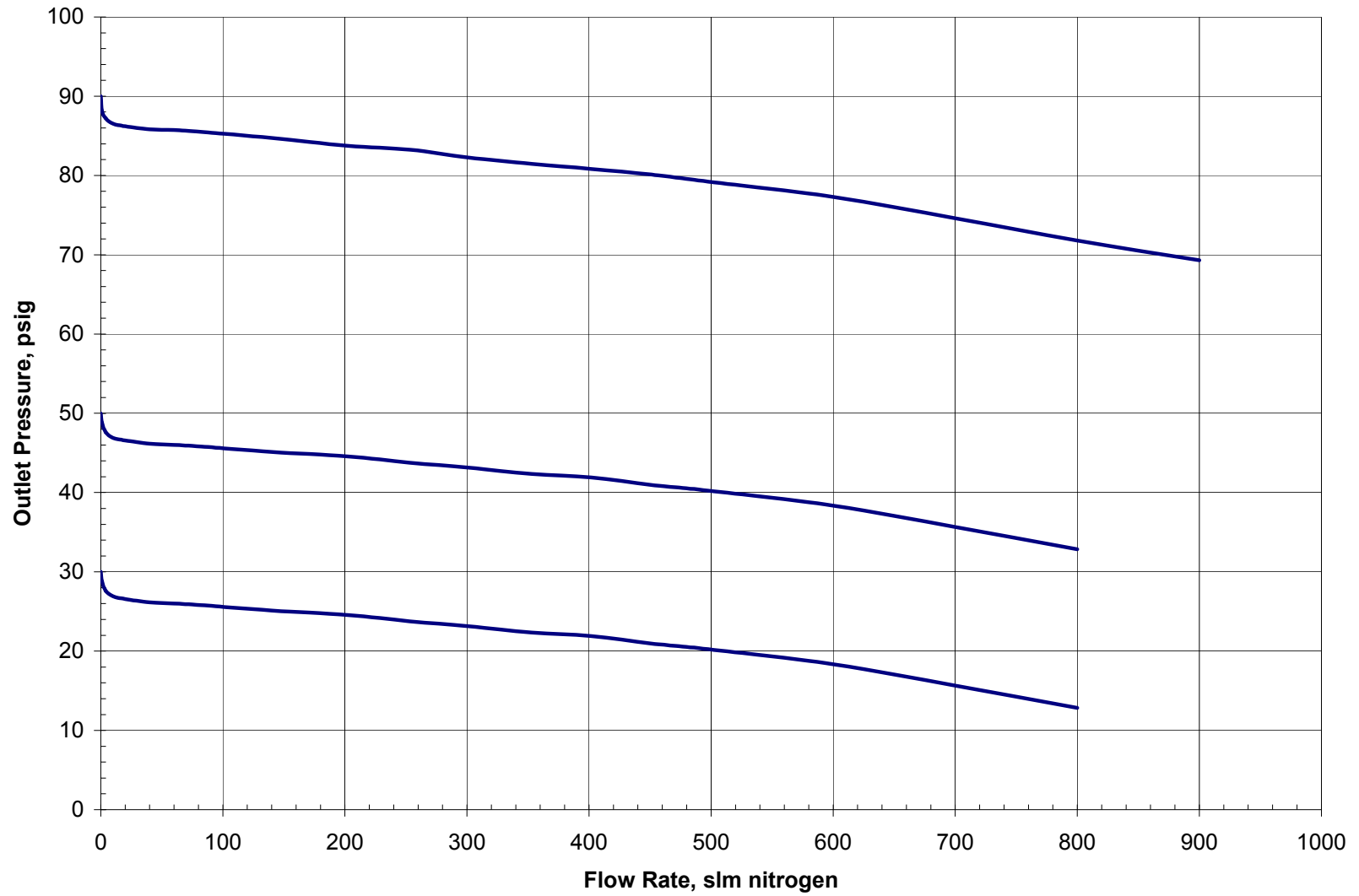


### AP1210S 2PW FV12 FV12

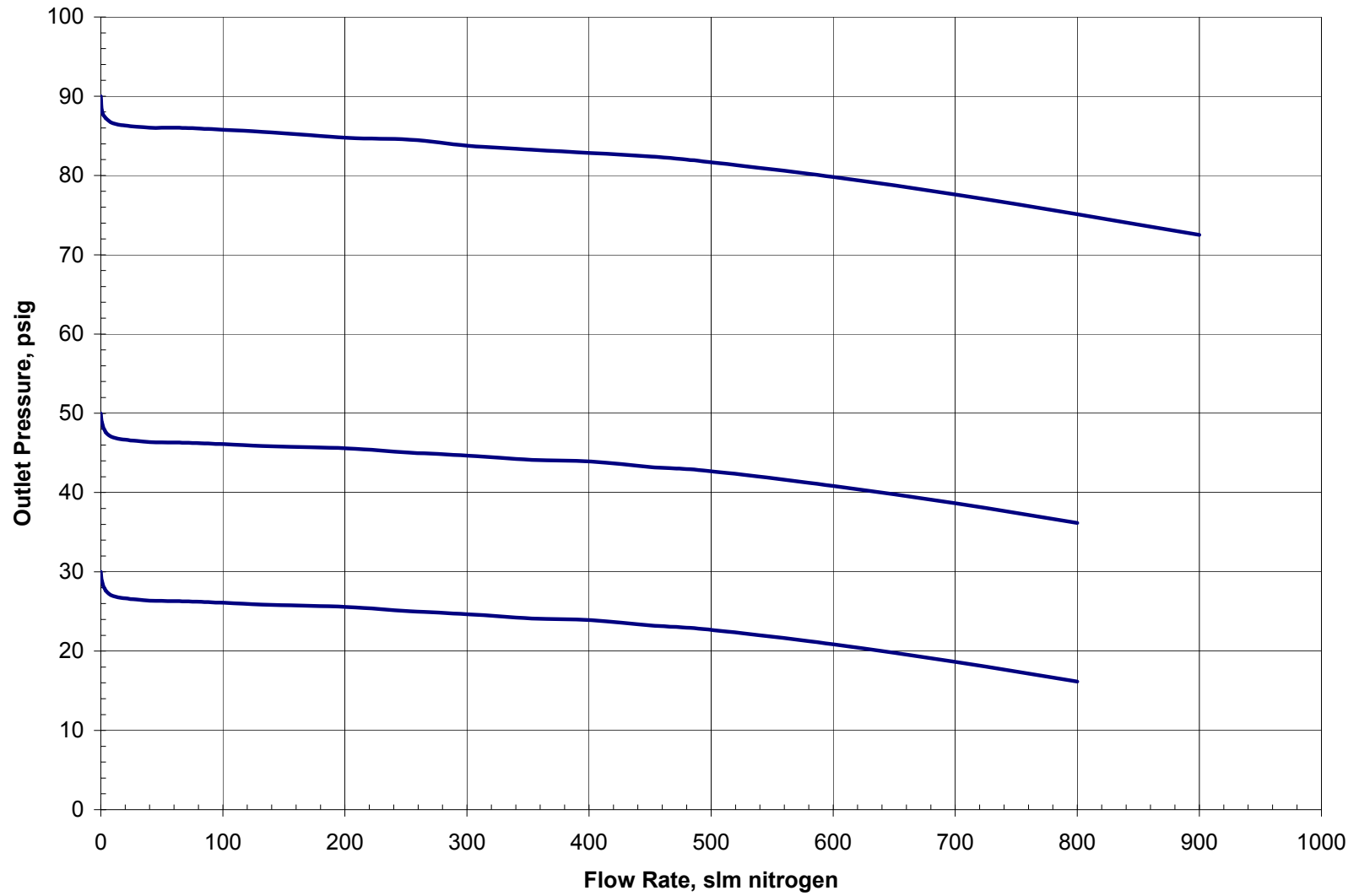
Flow Curve at 600 psig Inlet Pressure



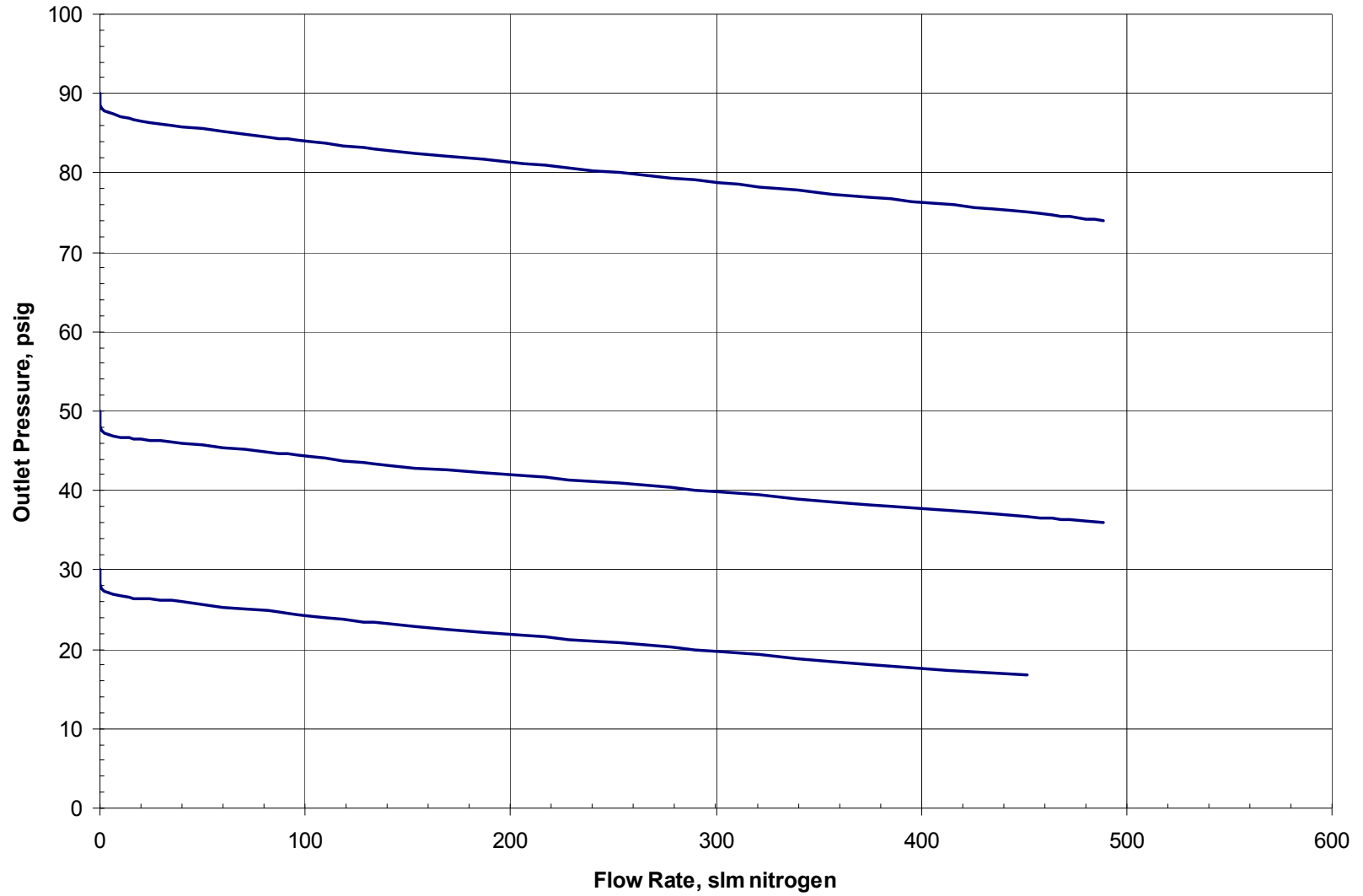
**AP1210S 2PW FV8 FV8**  
Flow Curve at 300 psig Inlet Pressure



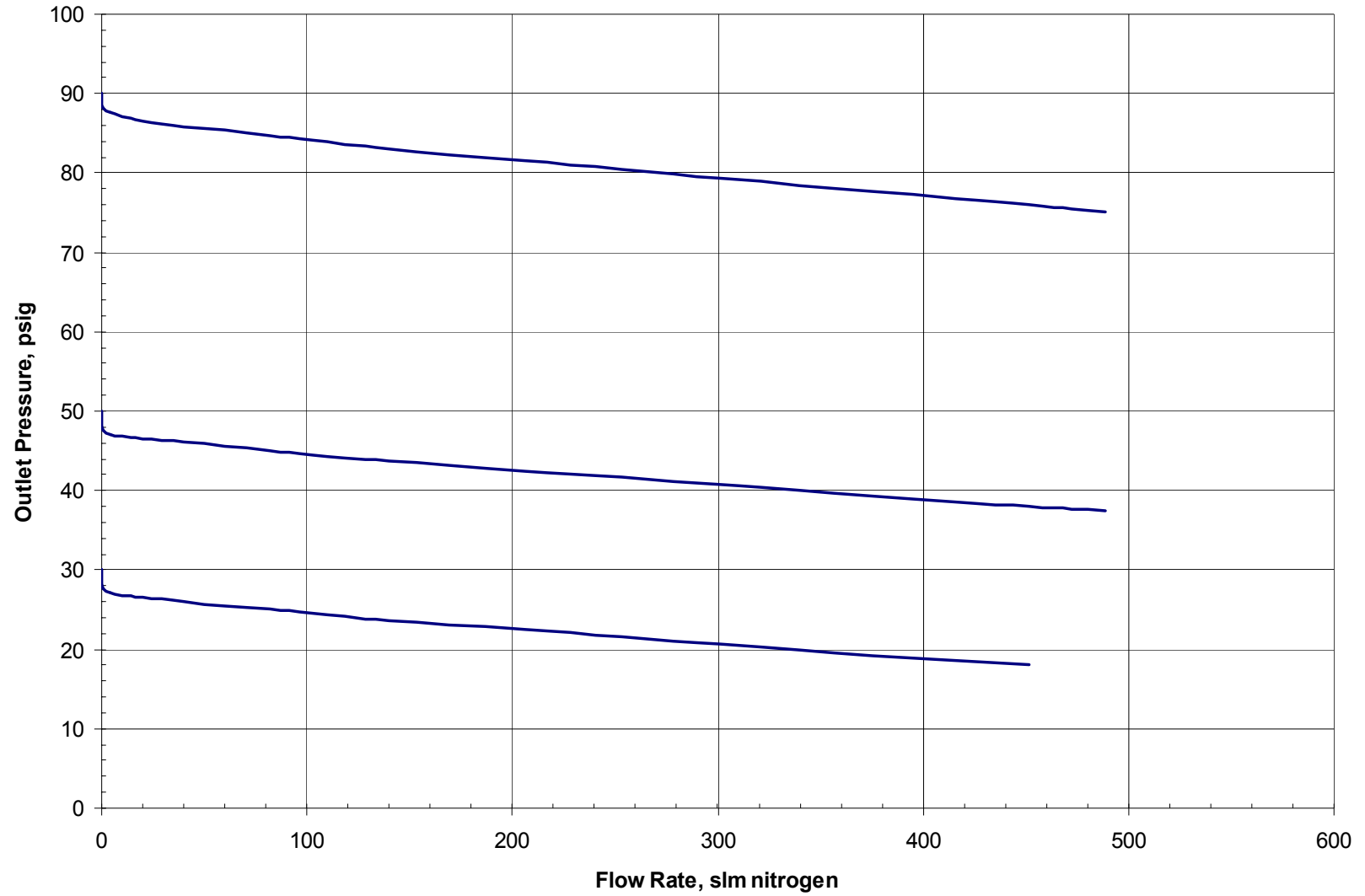
**AP1210S 2PW FV12 FV12**  
Flow Curve at 300 psig Inlet Pressure



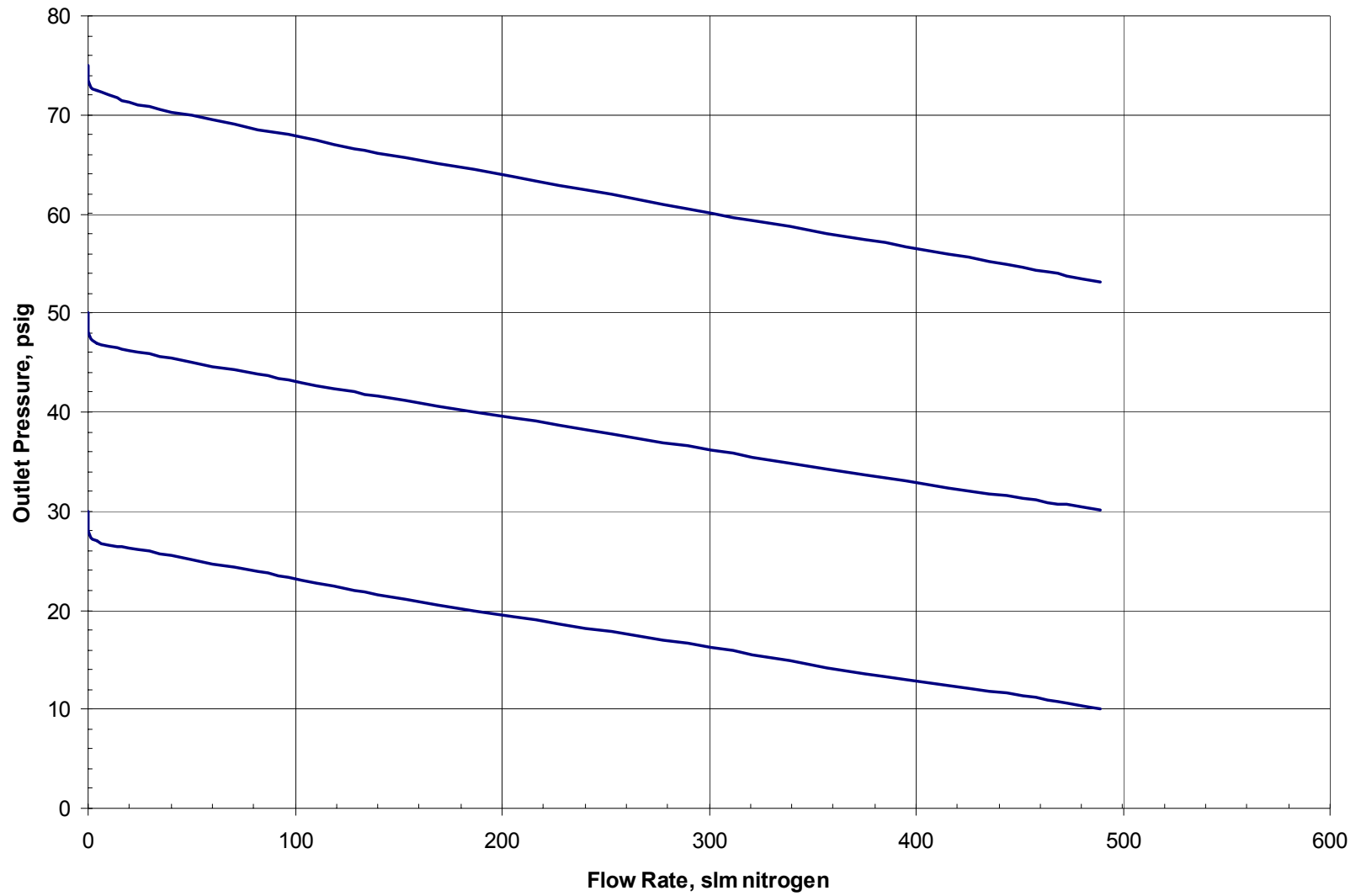
**AP1210S 2PW FV8 FV8**  
Flow Curve at 150 psig Inlet Pressure



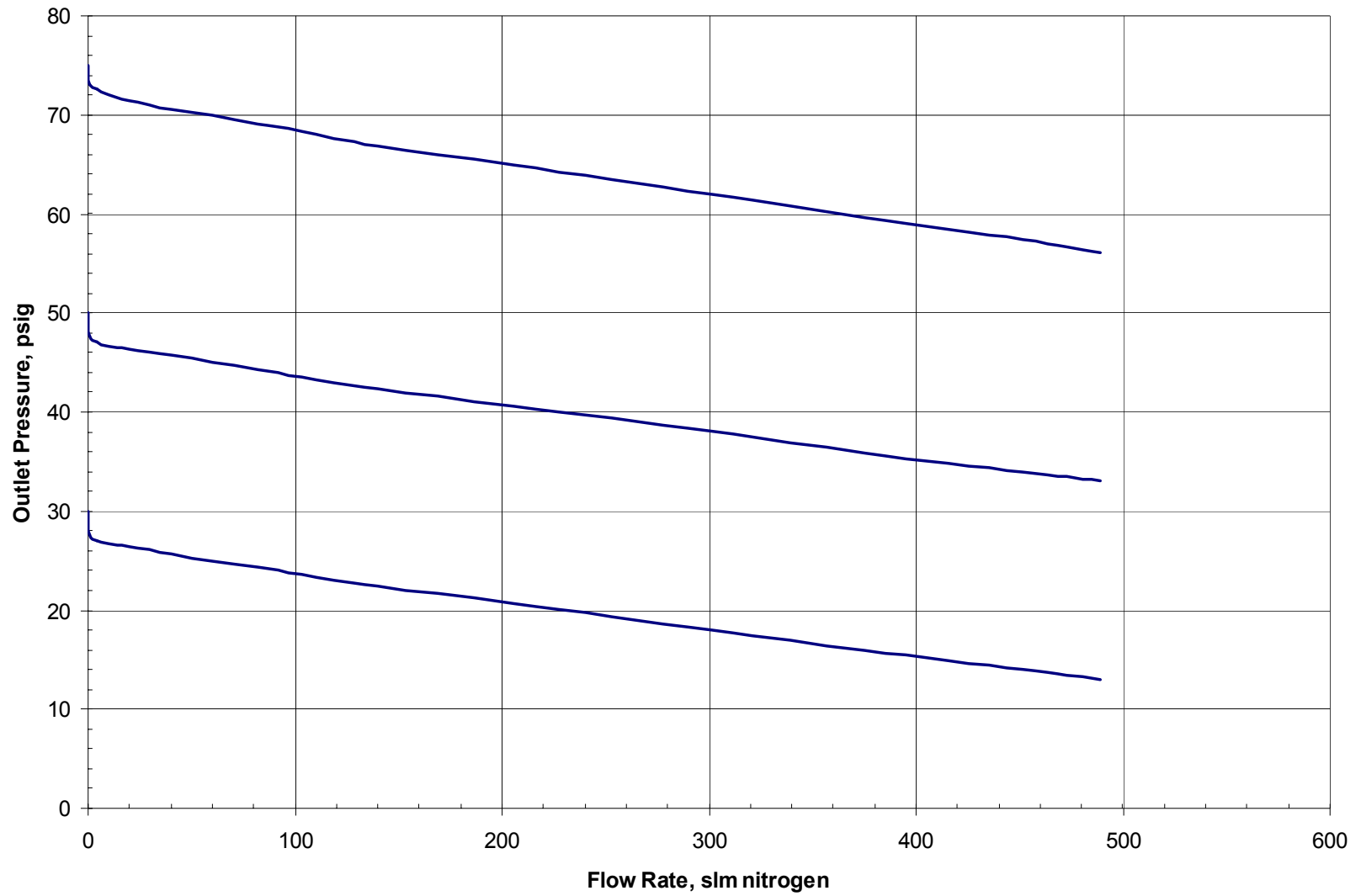
**AP1210S 2PW FV12 FV12**  
Flow Curve at 150 psig Inlet Pressure



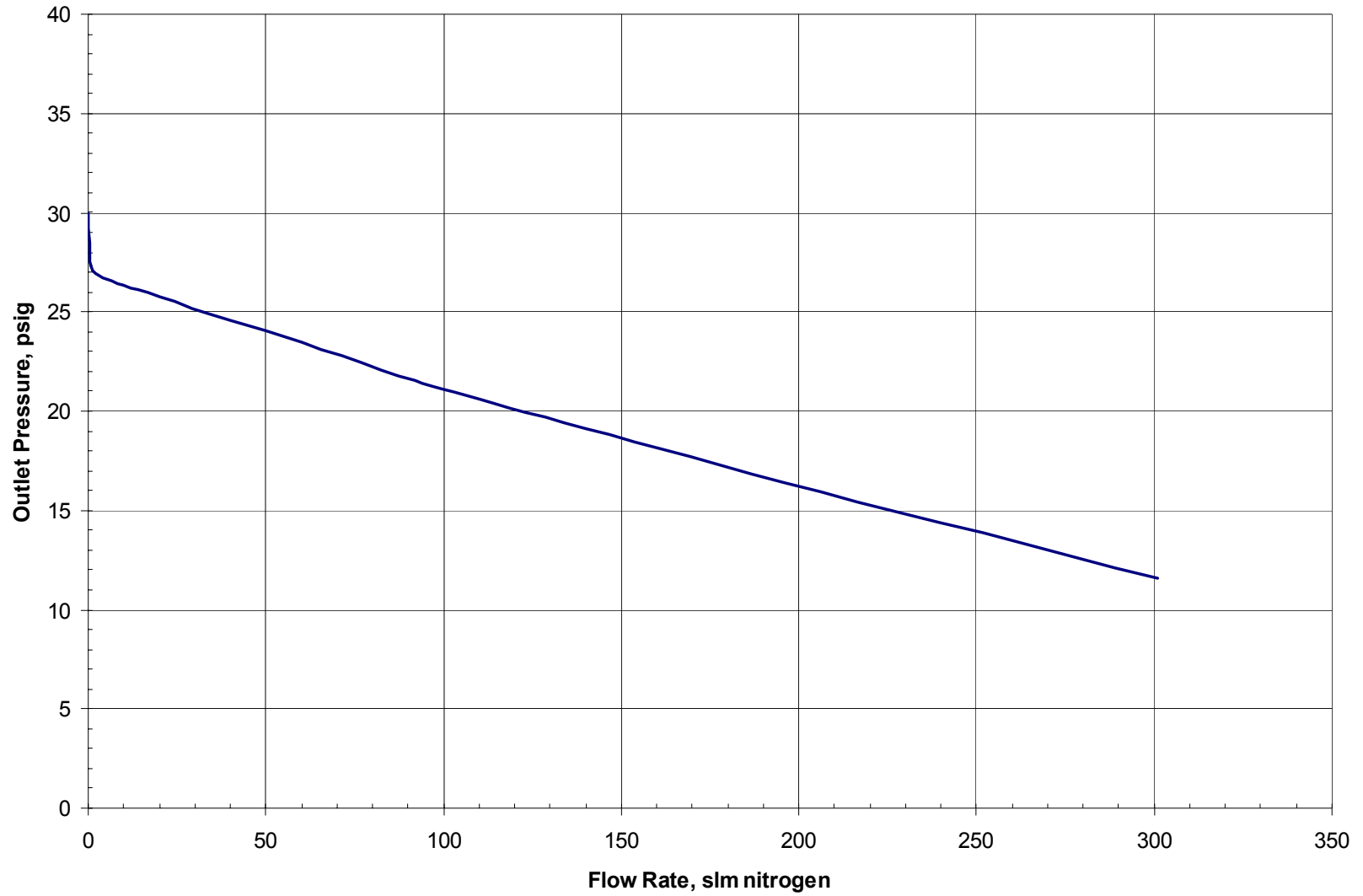
**AP1210S 2PW FV8 FV8**  
Flow Curve at 100 psig Inlet Pressure



**AP1210S 2PW FV12 FV12**  
Flow Curve at 100 psig Inlet Pressure

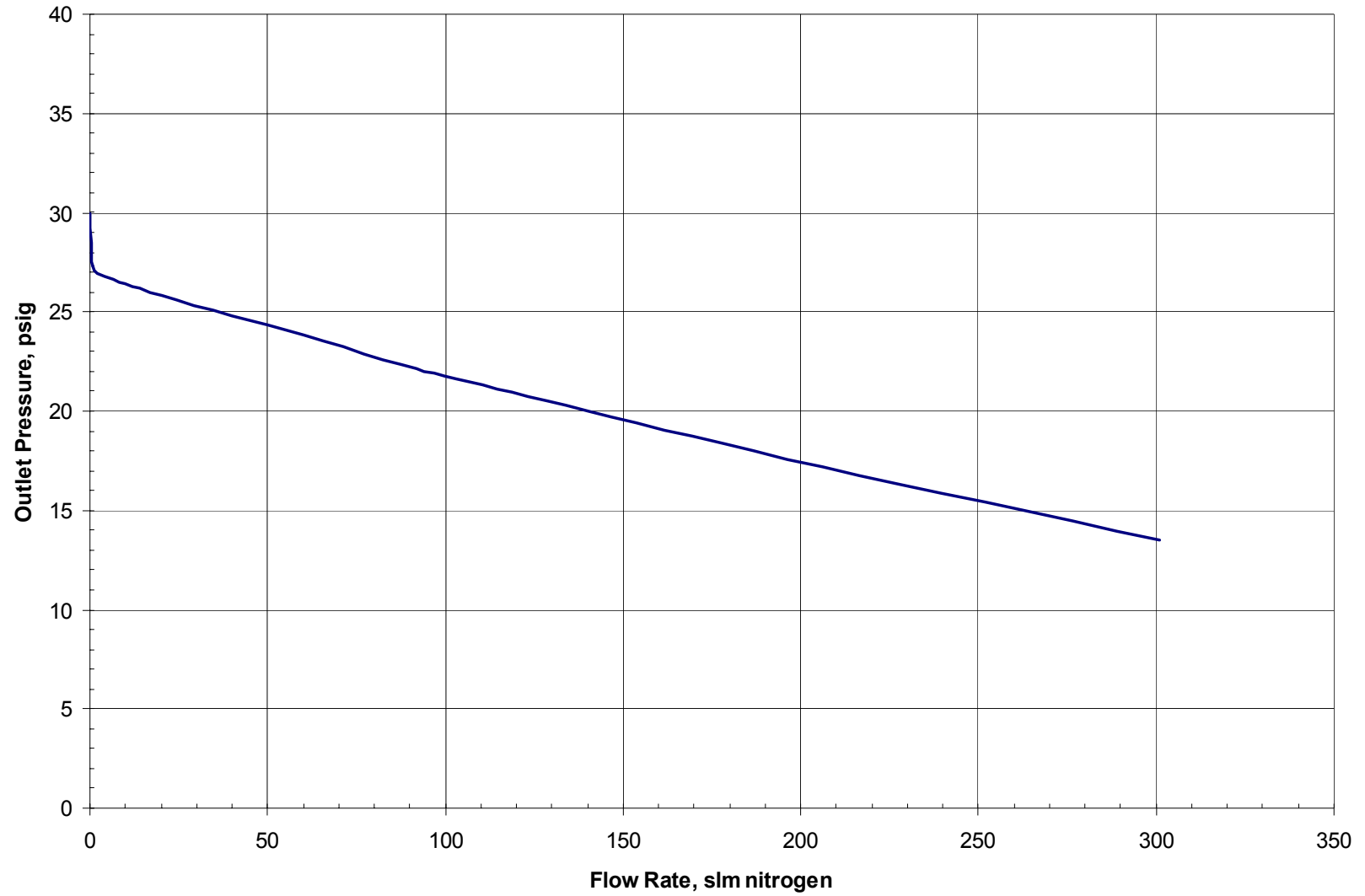


**AP1210S 2PW FV8 FV8**  
Flow Curve at 50 psig Inlet Pressure





**AP1210S 2PW FV12 FV12**  
Flow Curve at 50 psig Inlet Pressure

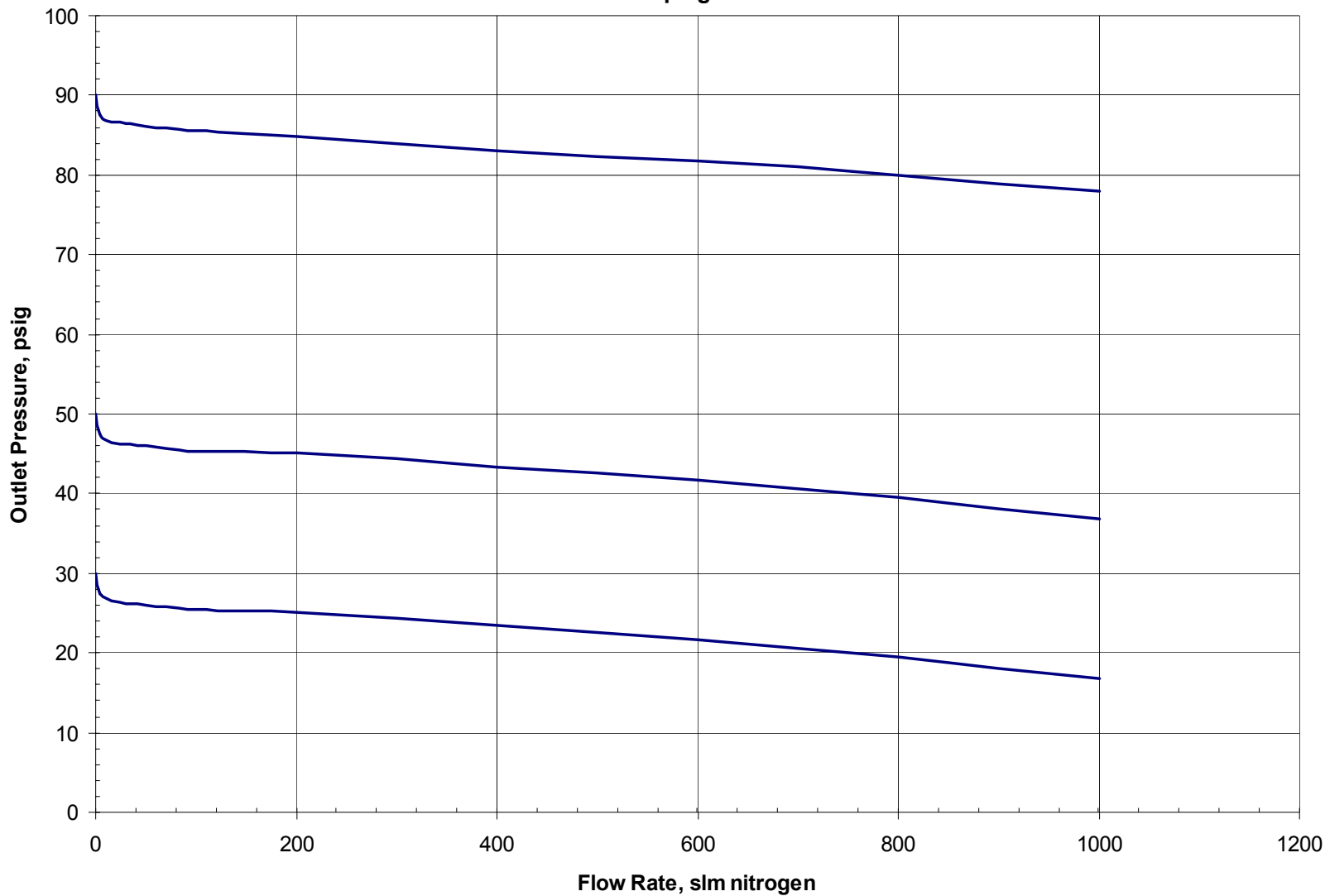


### AP1210 HF Flow Curve Index

Series	Inlet Pressure (psig)	Outlet Pressures (psig)	Connection Size	Flow Curve Number
AP1210 HF	600	90, 50, 30	1/2 inch	<a href="#">AP1210HF-001</a>
			3/4 inch	<a href="#">AP1210HF-002</a>
	300	90, 50, 30	1/2 inch	<a href="#">AP1210HF-003</a>
			3/4 inch	<a href="#">AP1210HF-004</a>
	150	90, 50, 30	1/2 inch	<a href="#">AP1210HF-005</a>
			3/4 inch	<a href="#">AP1210HF-006</a>
	100	75, 50, 30	1/2 inch	<a href="#">AP1210HF-007</a>
			3/4 inch	<a href="#">AP1210HF-008</a>
	50	30	1/2 inch	<a href="#">AP1210HF-009</a>
			3/4 inch	<a href="#">AP1210HF-010</a>

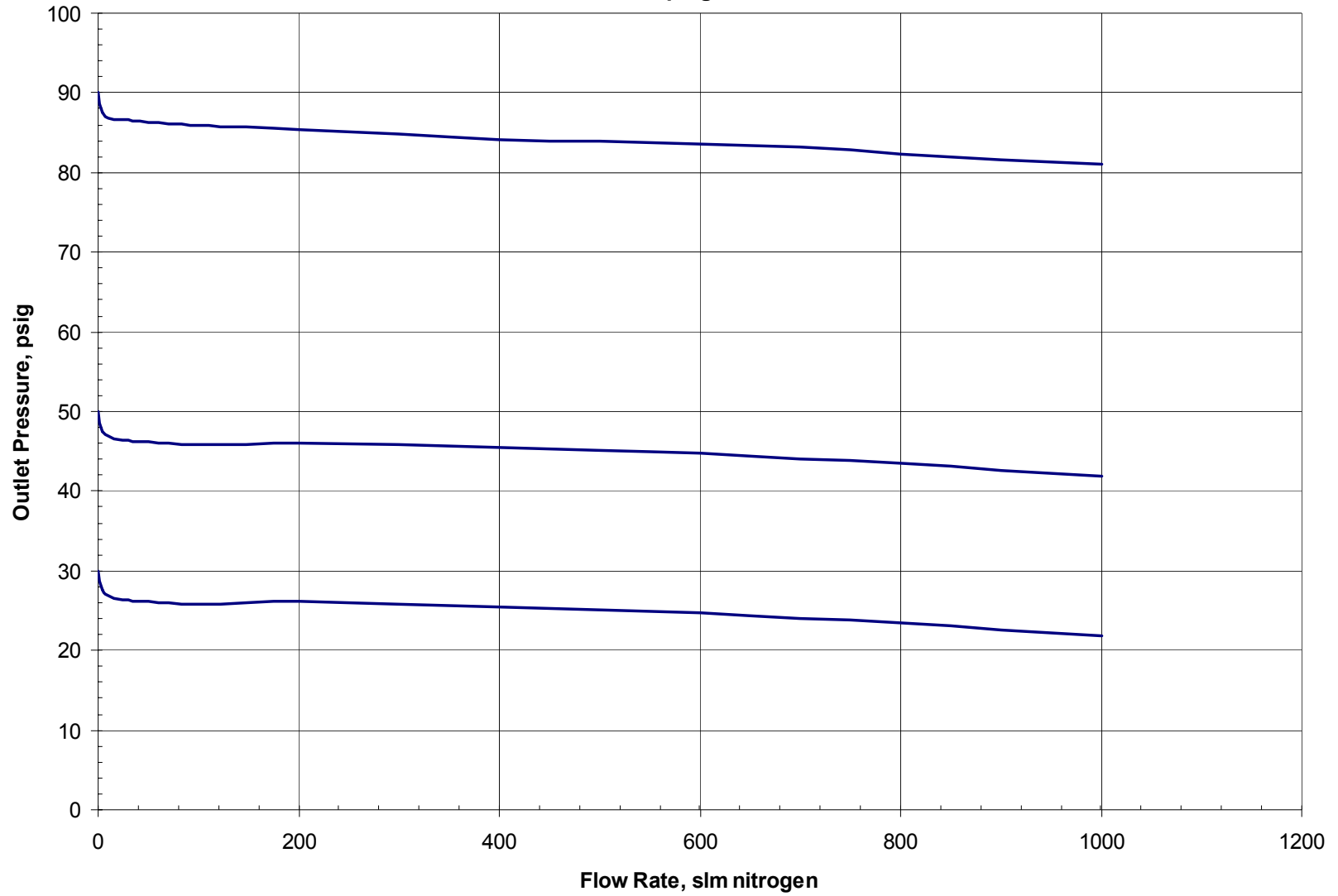
### AP1210S 2PW FV8 FV8 HF

Flow Curve at 600 psig Inlet Pressure



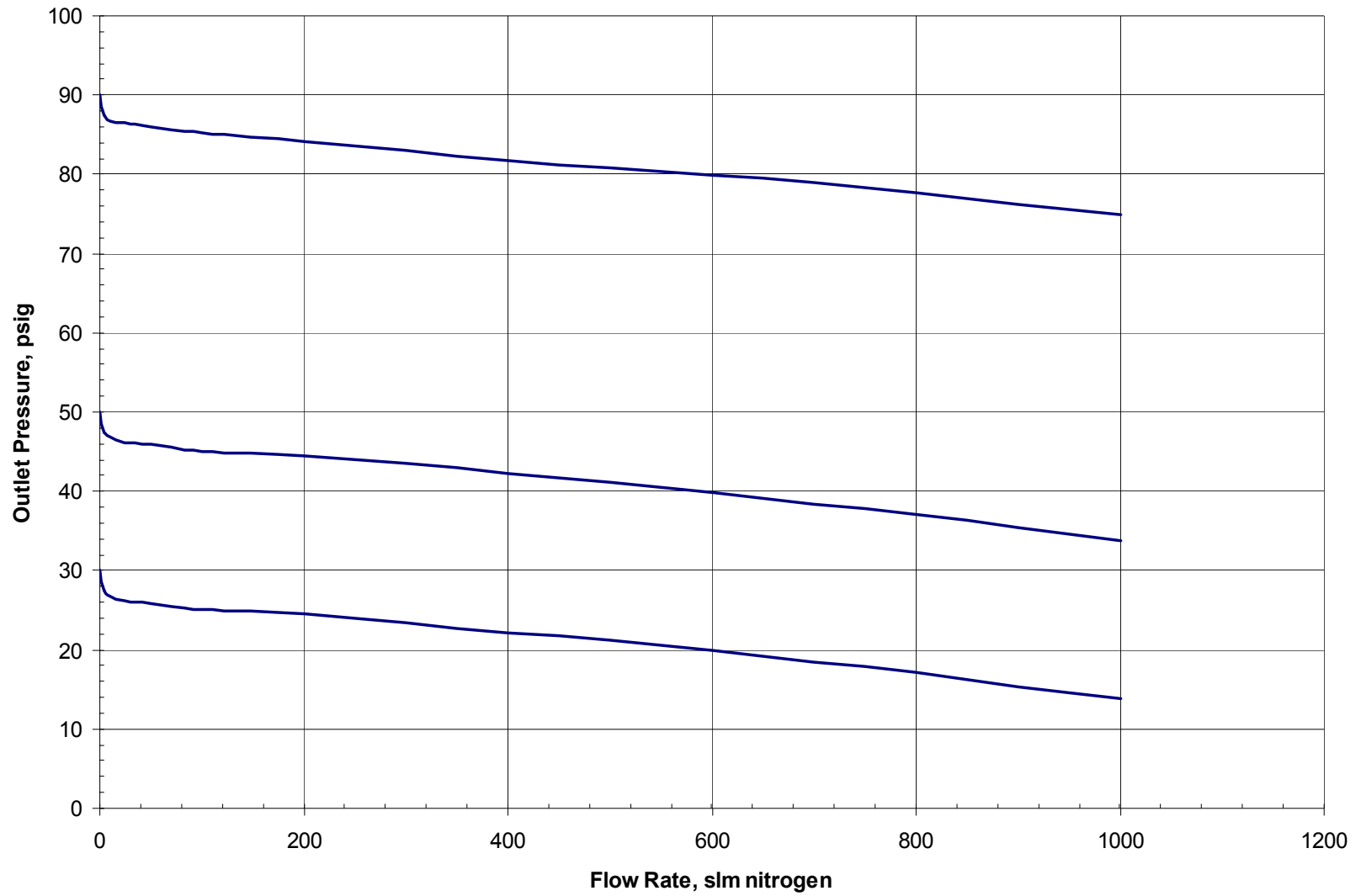
### AP1210S 2PW FV12 FV12 HF

Flow Curve at 600 psig Inlet Pressure

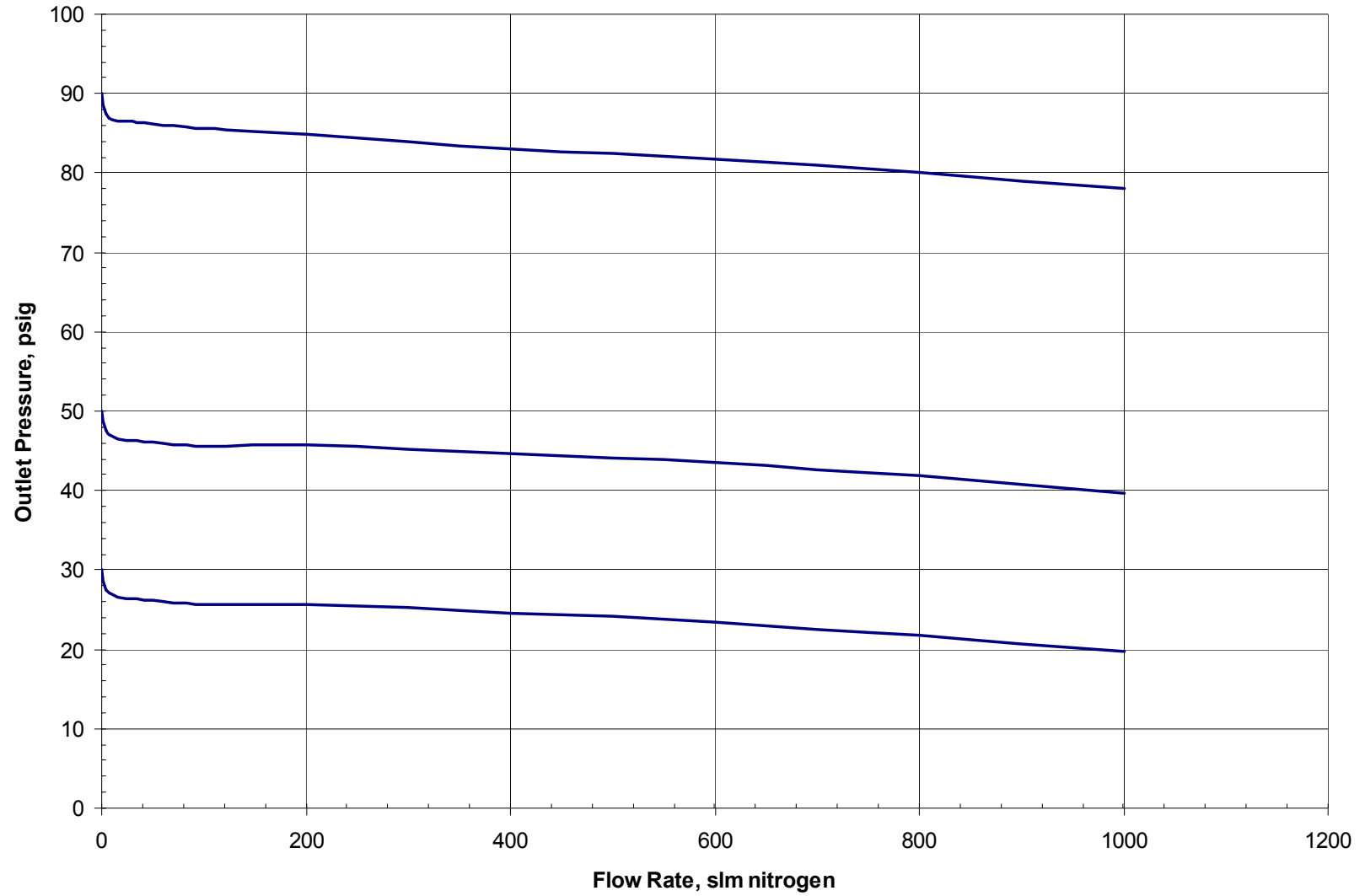


### AP1210S 2PW FV8 FV8 HF

Flow Curve at 300 psig Inlet Pressure

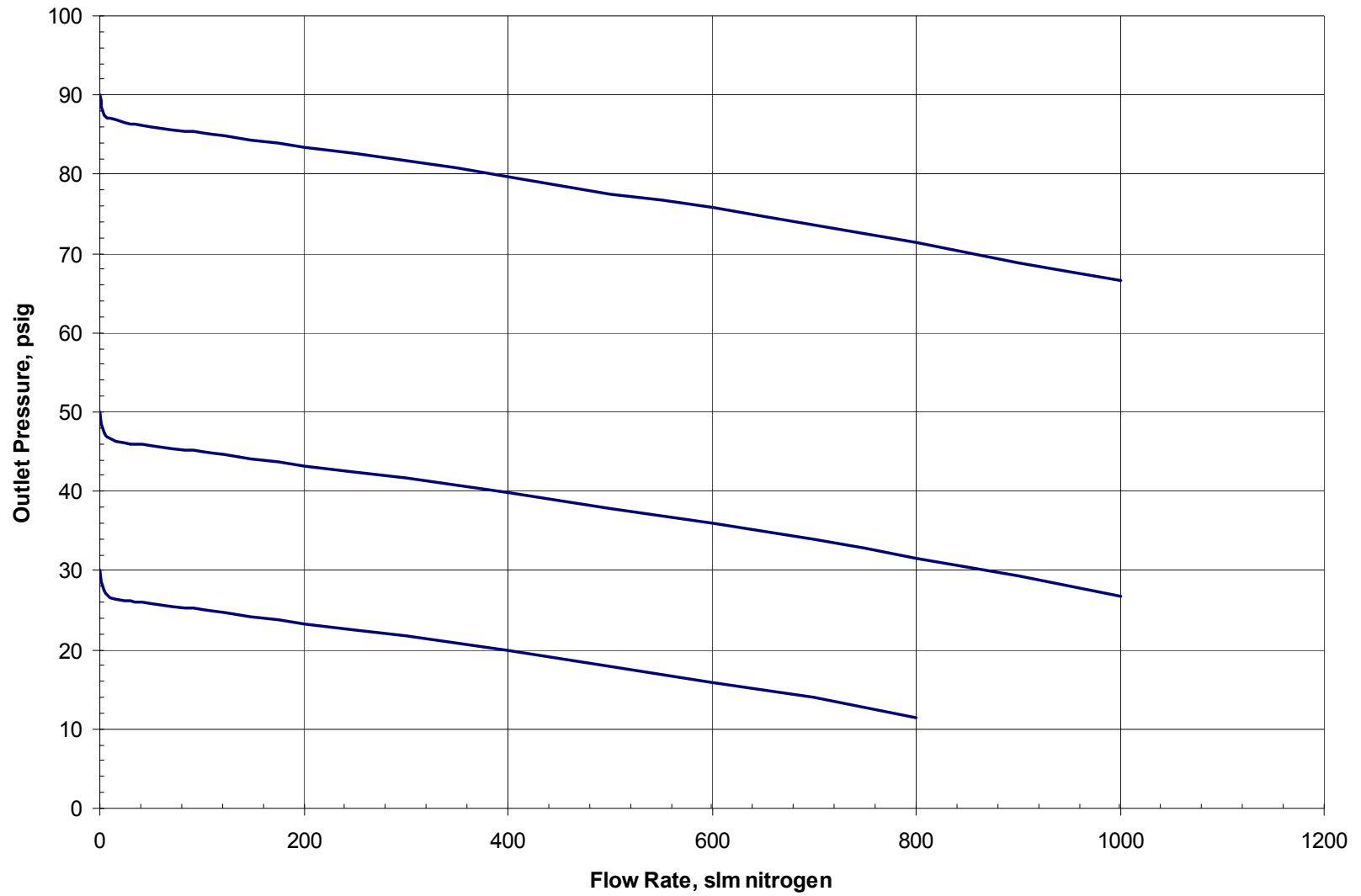


**AP1210S 2PW FV12 FV12 HF**  
Flow Curve at 300 psig Inlet Pressure

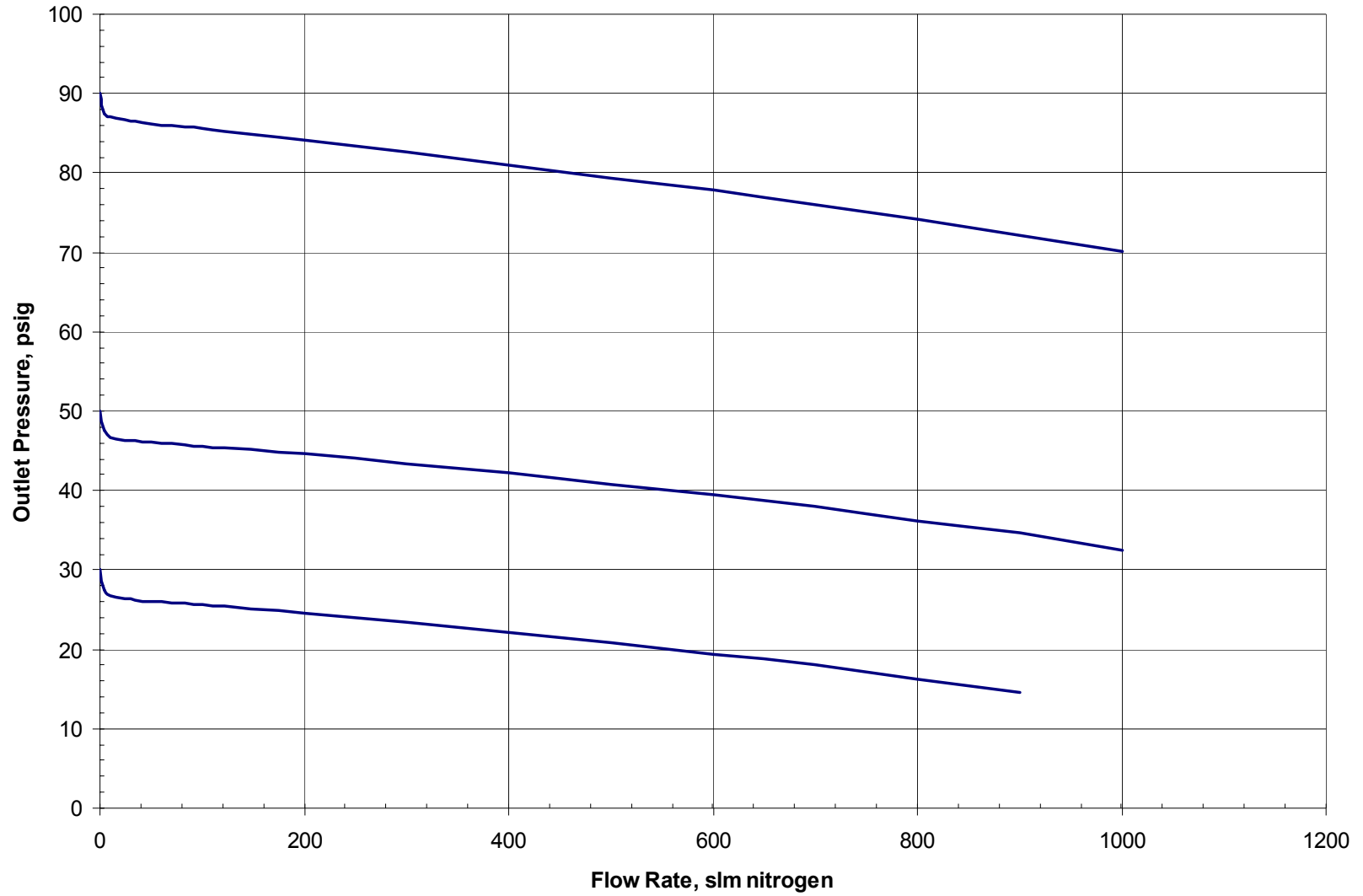


### AP1210S 2PW FV8 FV8 HF

Flow Curve at 150 psig Inlet Pressure



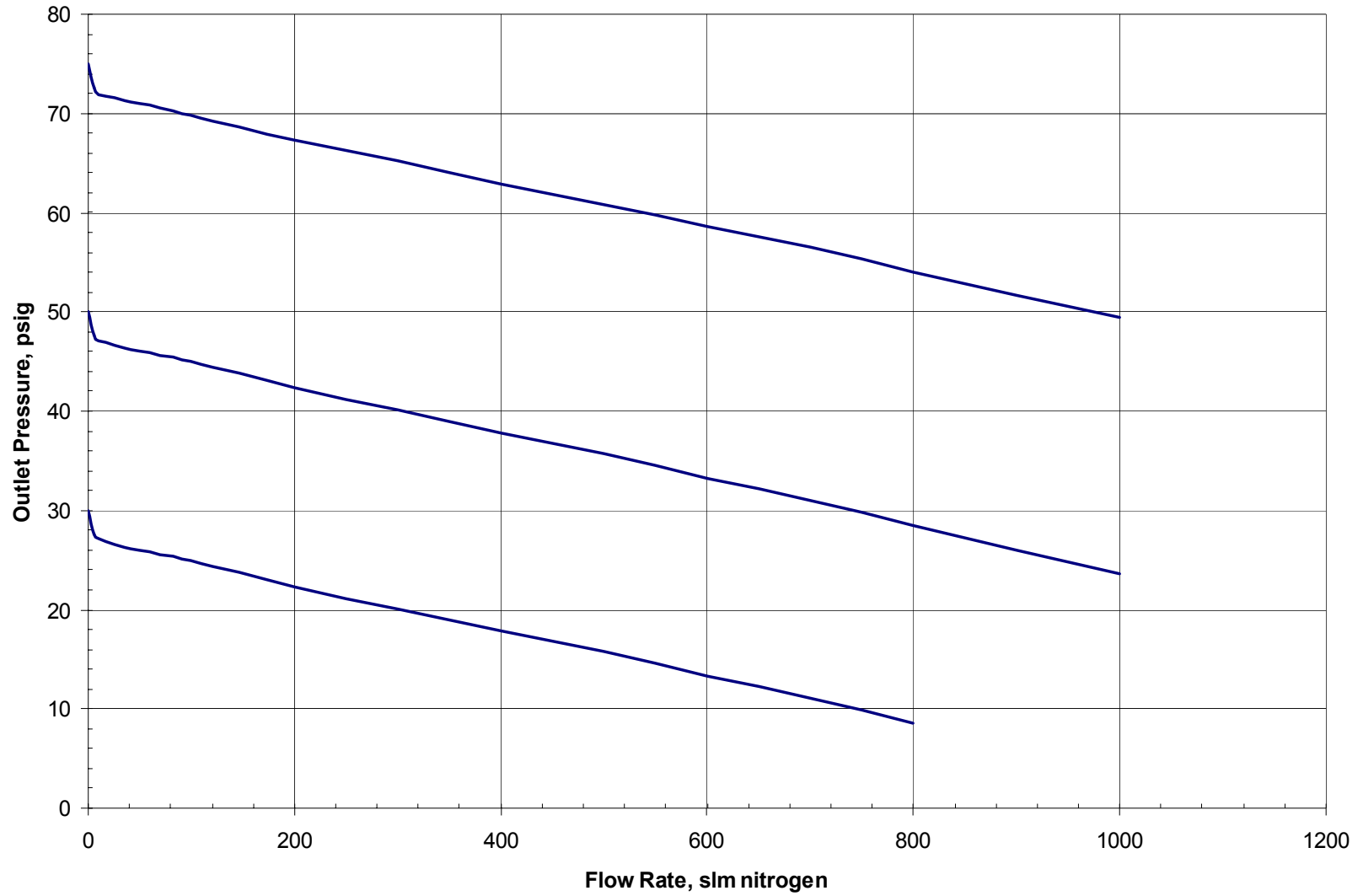
**AP1210S 2PW FV12 FV12 HF**  
Flow Curve at 150 psig Inlet Pressure





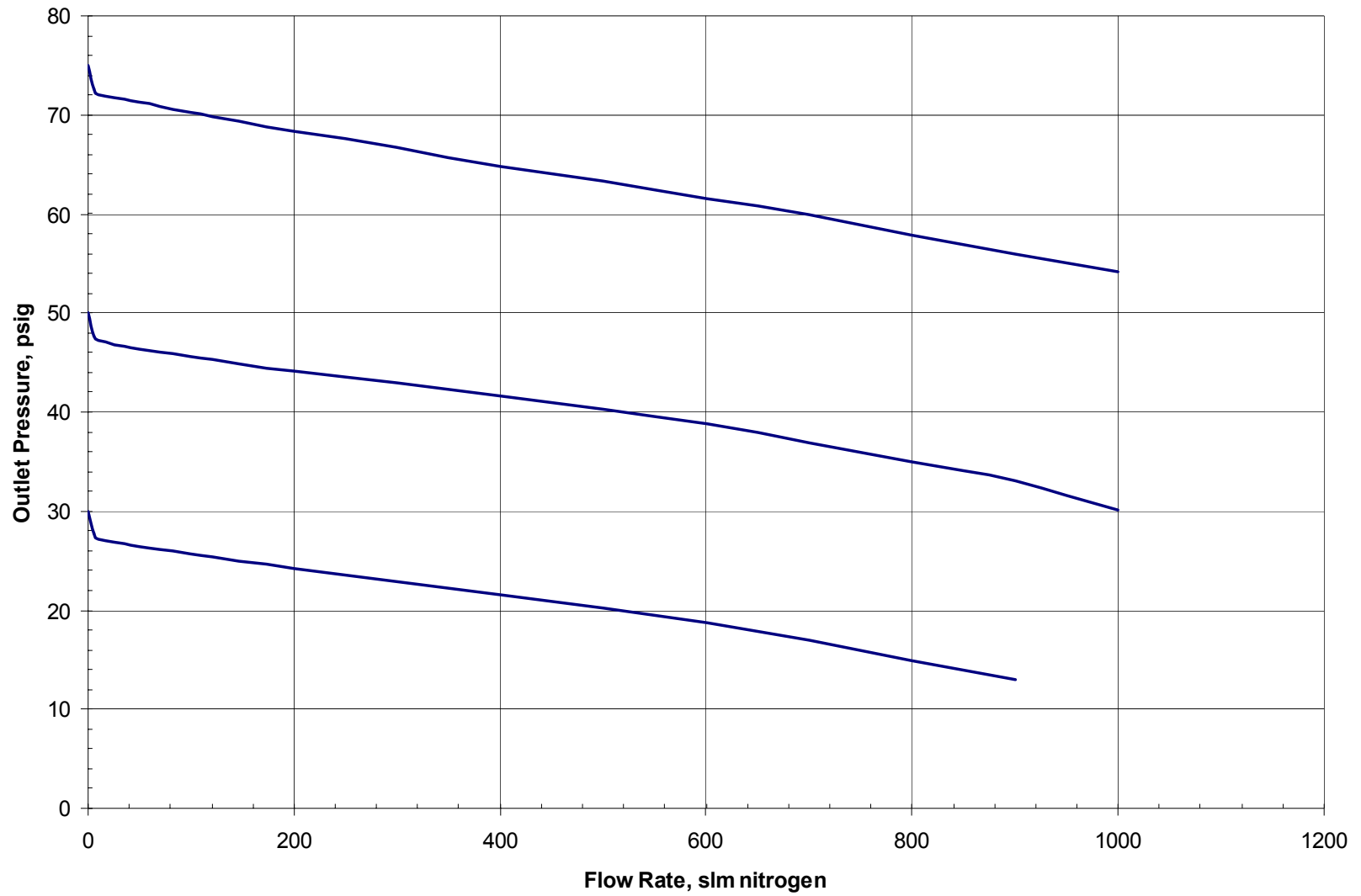
### AP1210S 2PW FV8 FV8 HF

Flow Curve at 100 psig Inlet Pressure



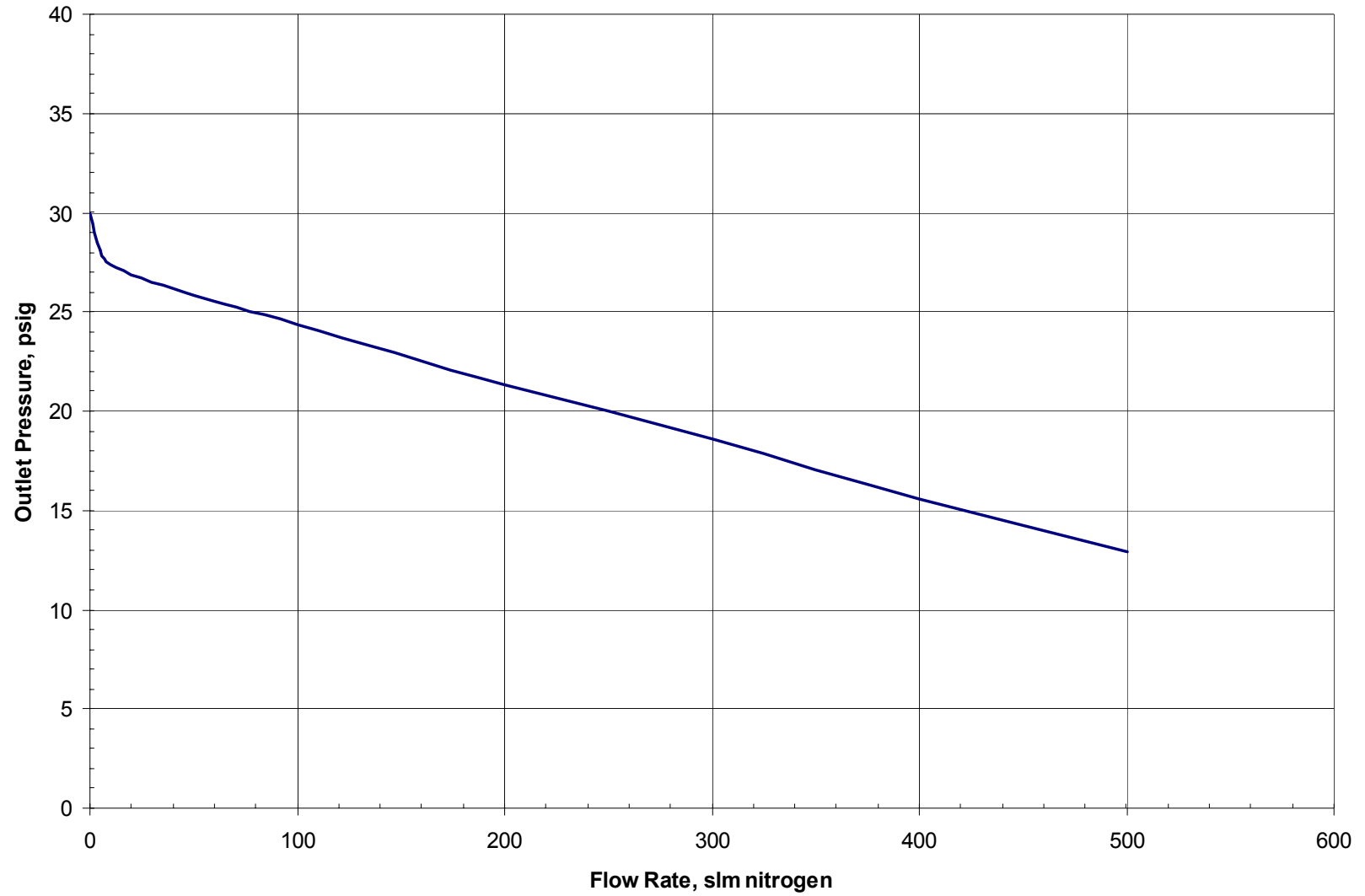
### AP1210S 2PW FV12 FV12 HF

Flow Curve at 100 psig Inlet Pressure

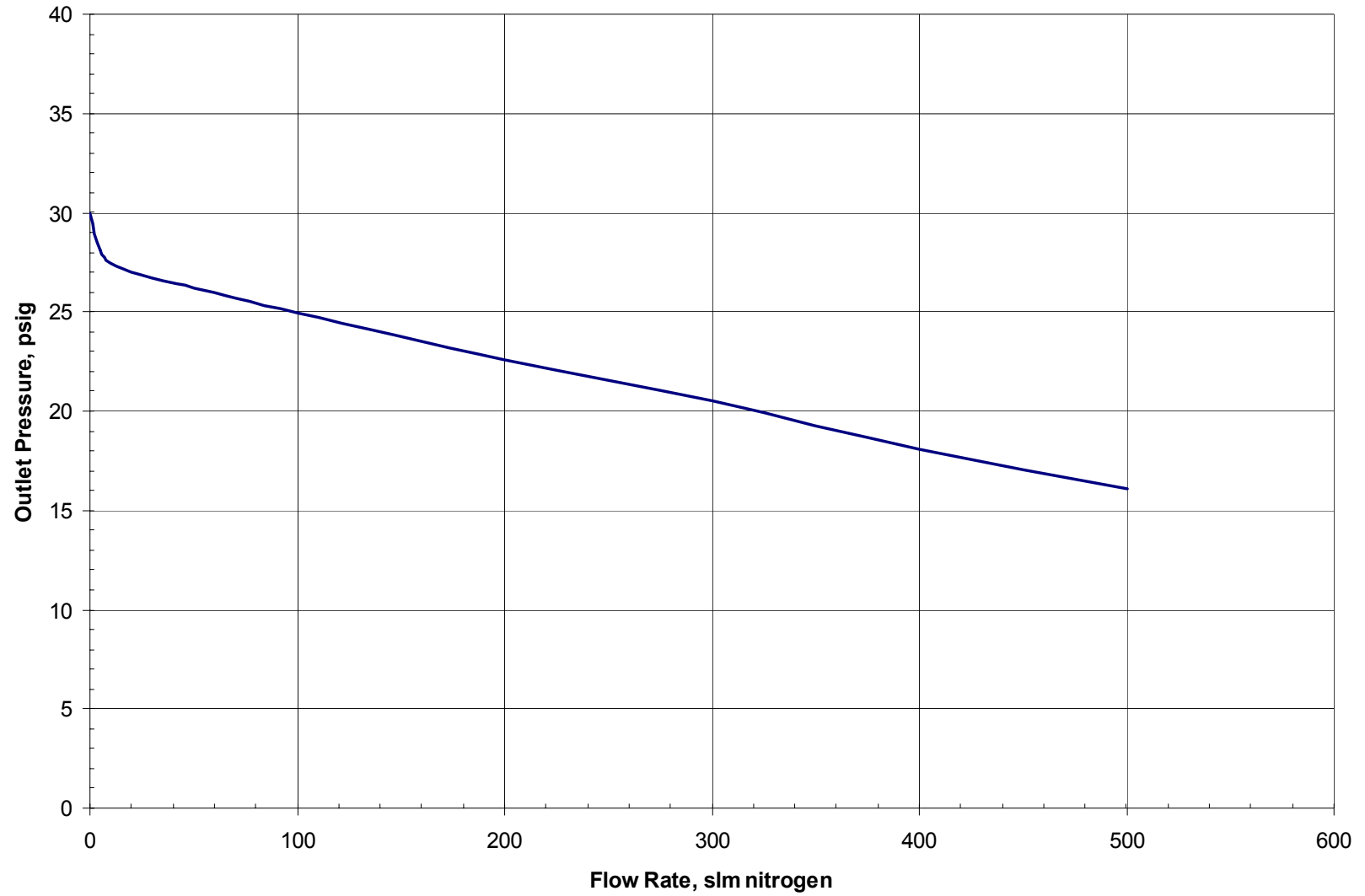


### AP1210S 2PW FV8 FV8 HF

Flow Curve at 50 psig Inlet Pressure



**AP1210S 2PW FV12 FV12 HF**  
Flow Curve at 50 psig Inlet Pressure

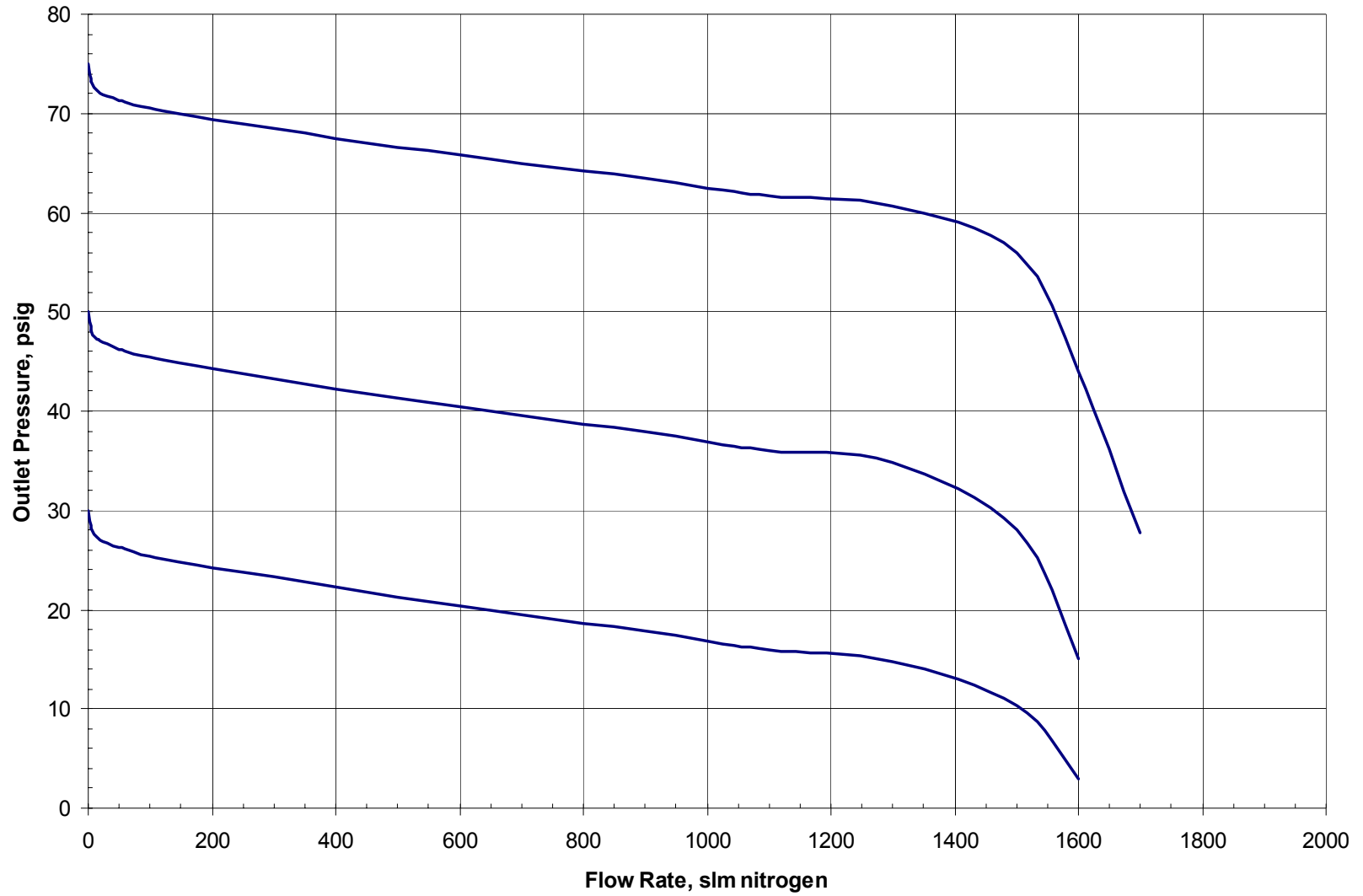


## AP1210 FC Flow Curve Index

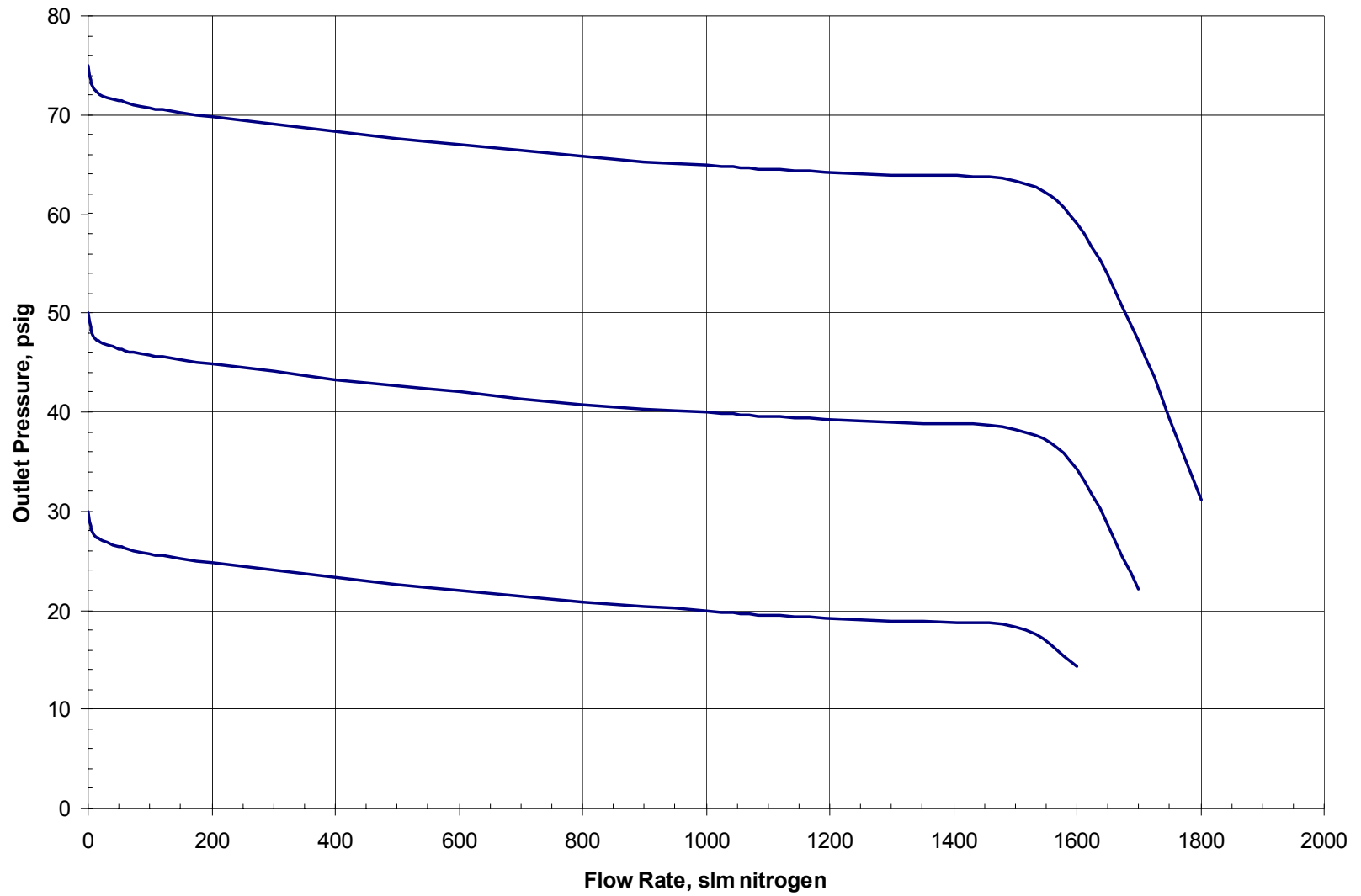
Series	Inlet Pressure (psig)	Outlet Pressures (psig)	Connection Size	Flow Curve Number
AP1210 FC	150	75, 50, 30	1/2 inch	<a href="#">AP1210FC-001</a>
			3/4 inch	<a href="#">AP1210FC-002</a>
	100	75, 50, 30	1/2 inch	<a href="#">AP1210FC-003</a>
			3/4 inch	<a href="#">AP1210FC-004</a>
	50	30	1/2 inch	<a href="#">AP1210FC-005</a>
			3/4 inch	<a href="#">AP1210FC-006</a>

### AP1210S 2PW FV8 FV8 FC

Flow Curve at 150 psig Inlet Pressure

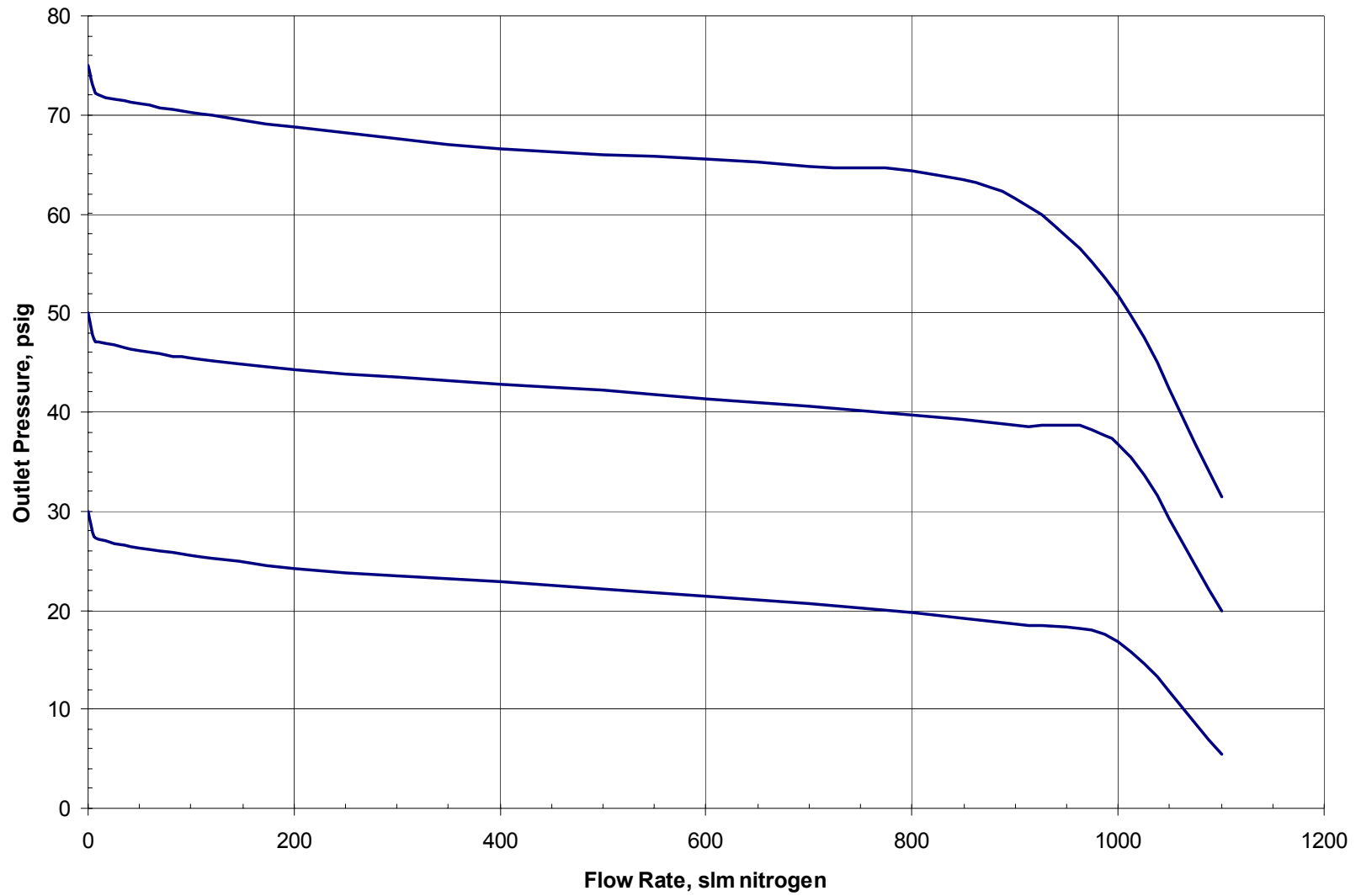


**AP1210S 2PW FV12 FV12 FC**  
Flow Curve at 150 psig Inlet Pressure



### AP1210S 2PW FV8 FV8 FC

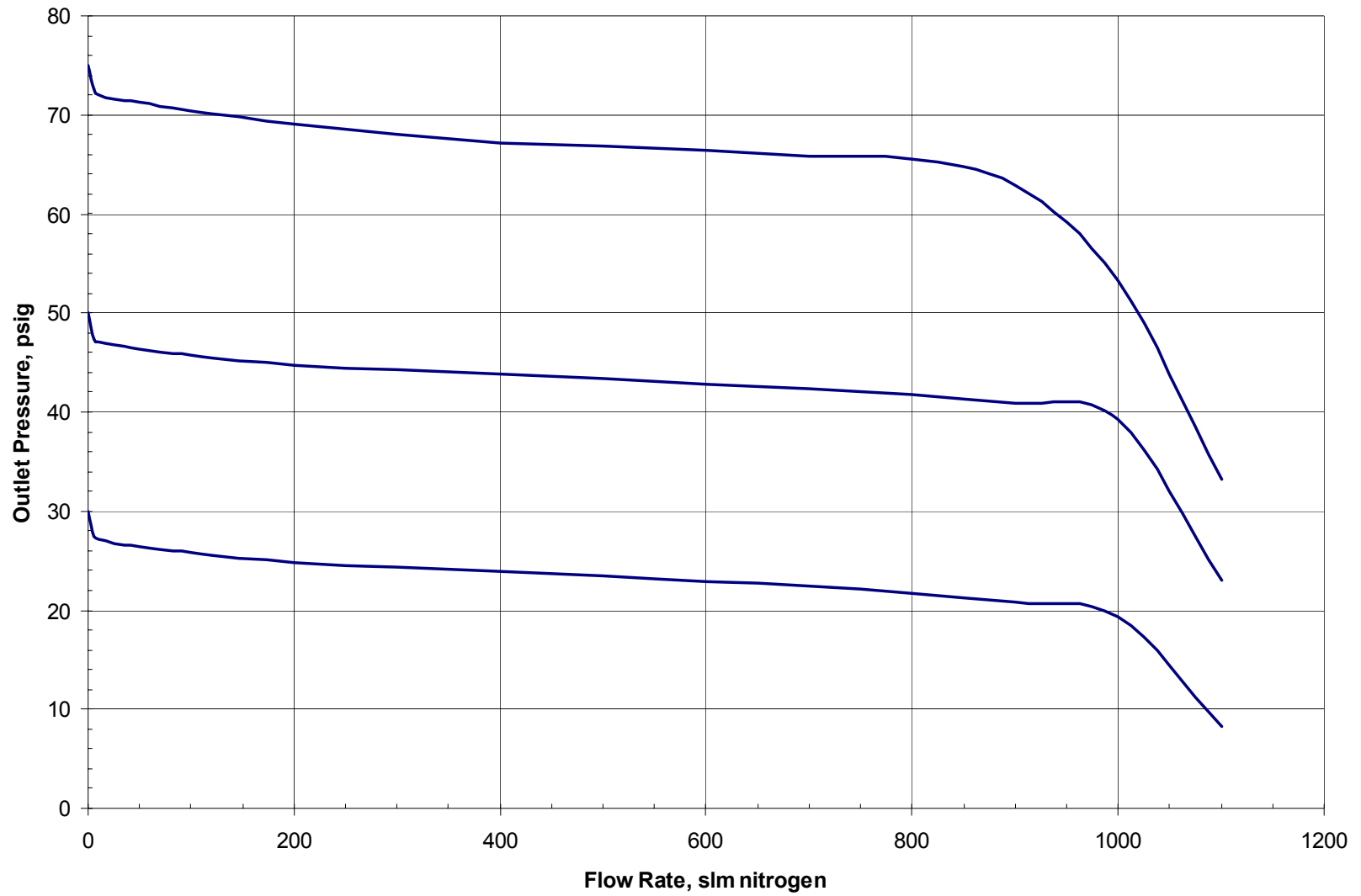
Flow Curve at 100 psig Inlet Pressure





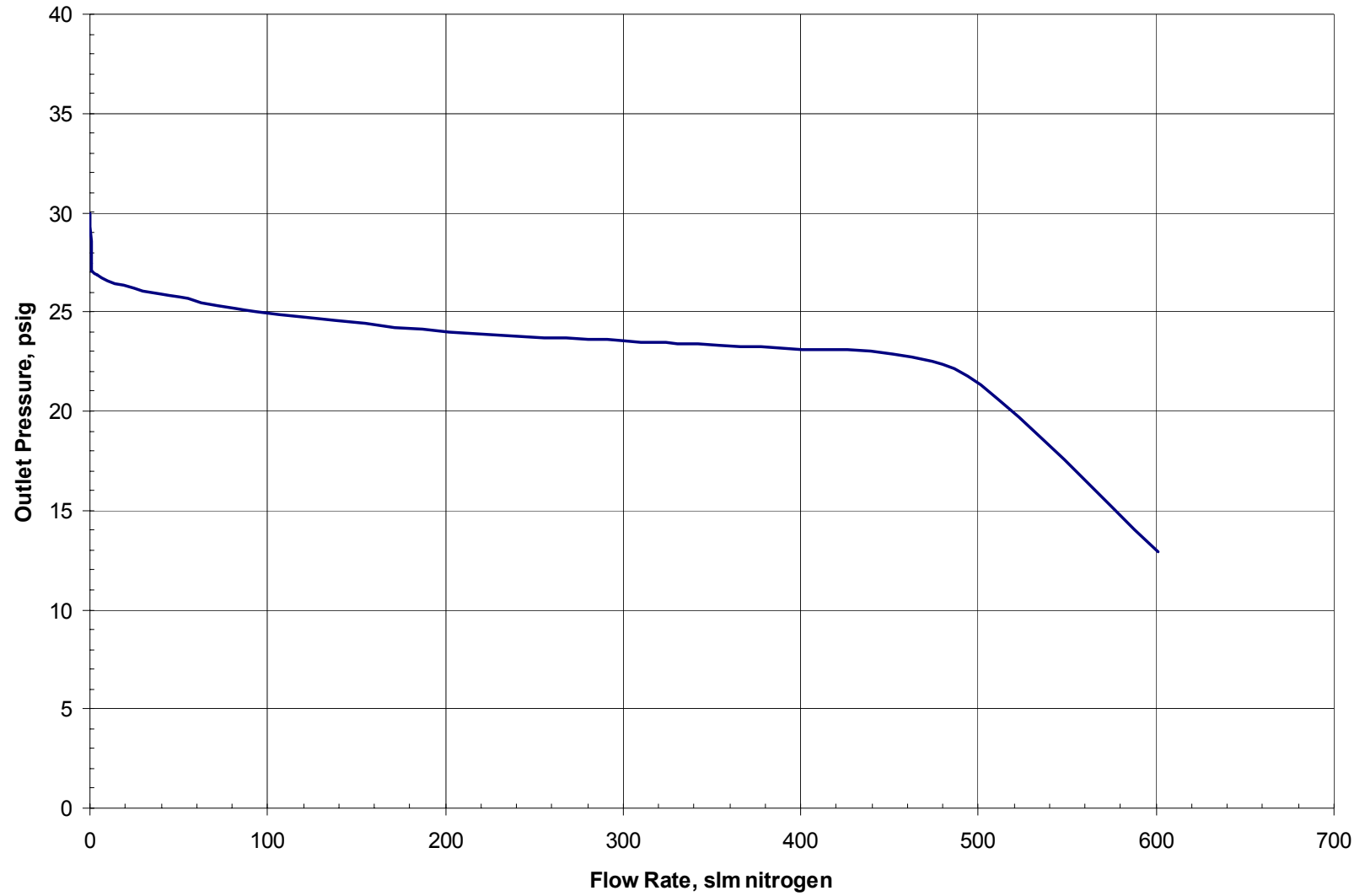
### AP1210S 2PW FV12 FV12 FC

Flow Curve at 100 psig Inlet Pressure



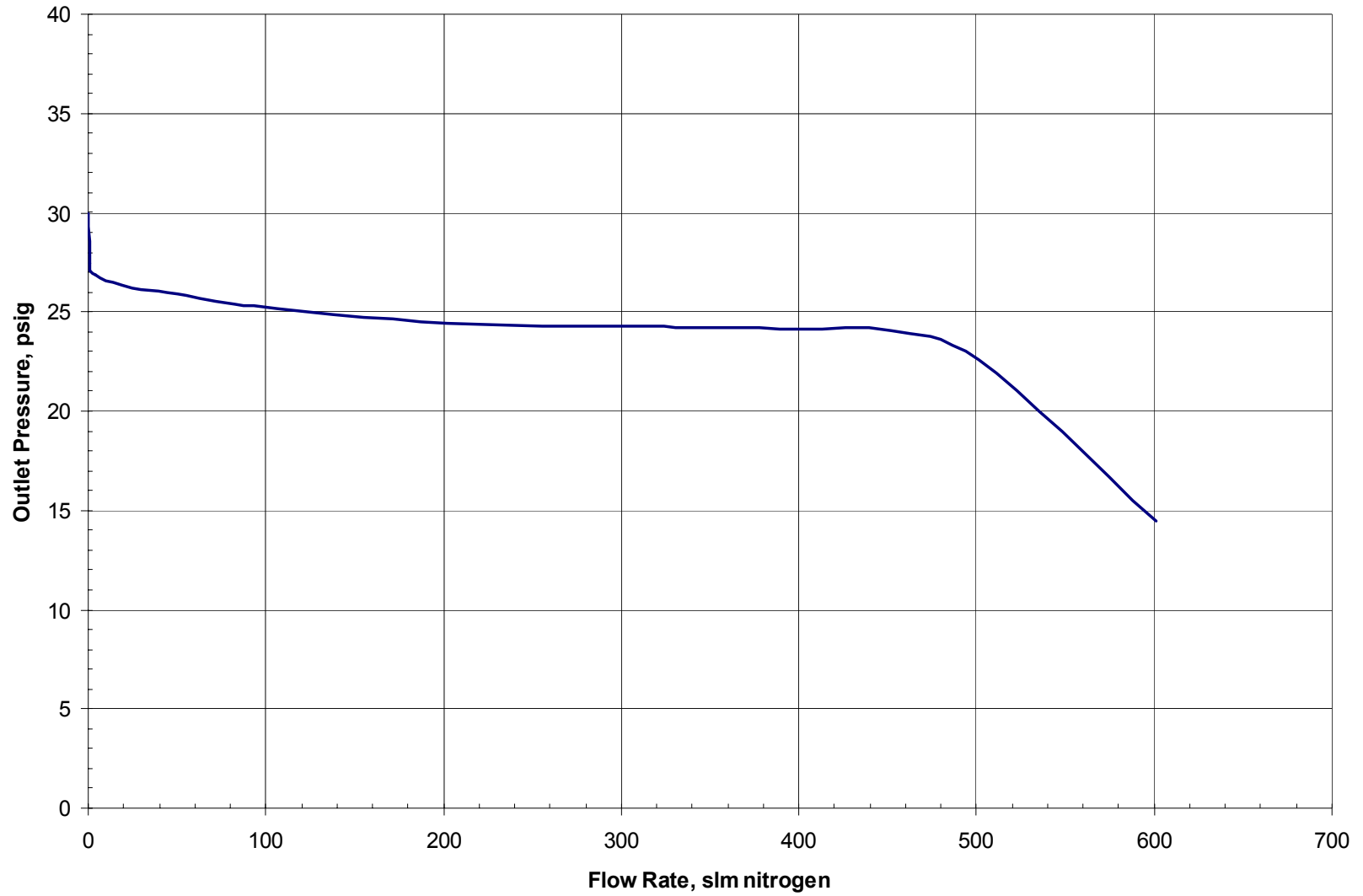
### AP1210S 2PW FV8 FV8 FC

Flow Curve at 50 psig Inlet Pressure



### AP1210S 2PW FV12 FV12 FC

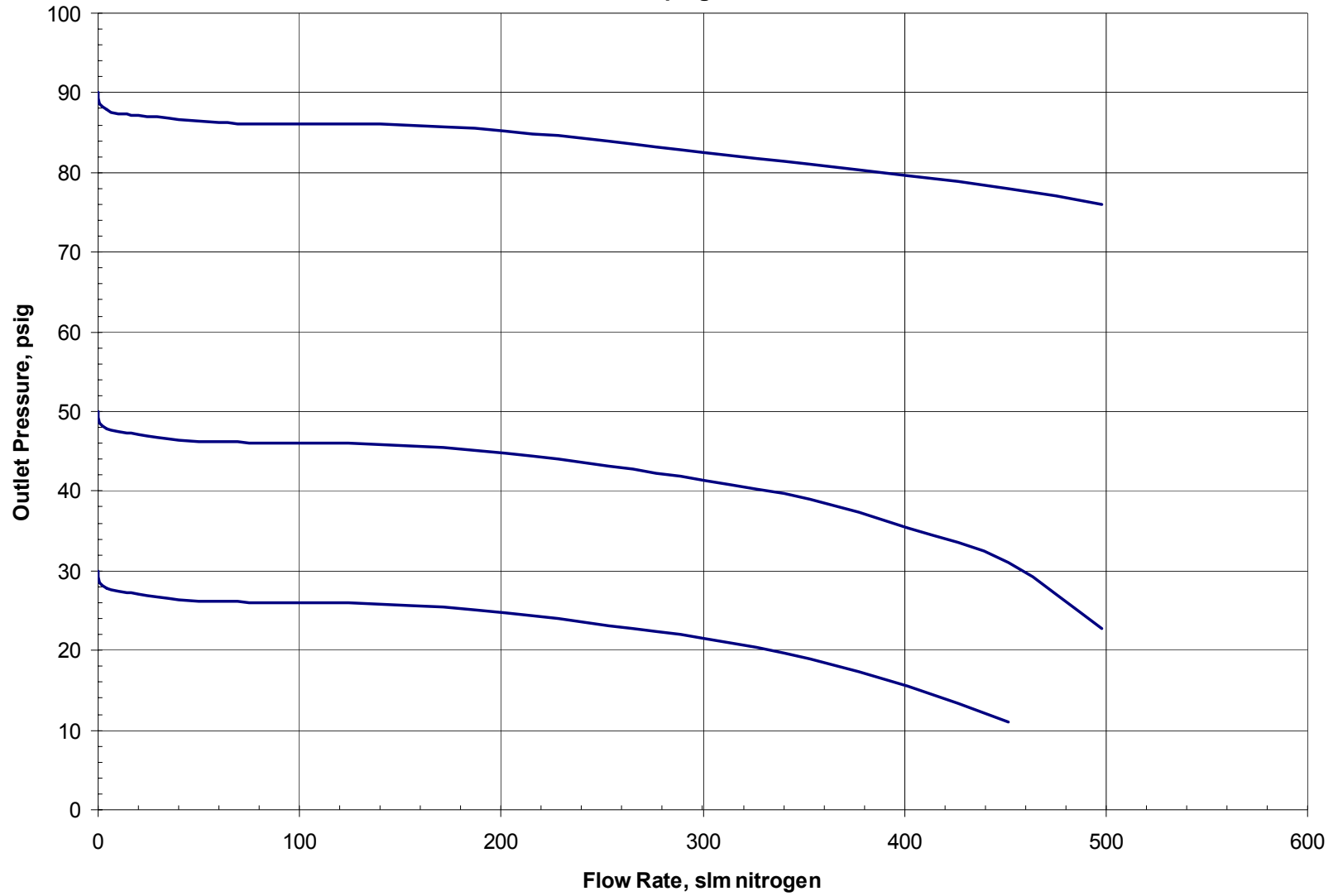
Flow Curve at 50 psig Inlet Pressure



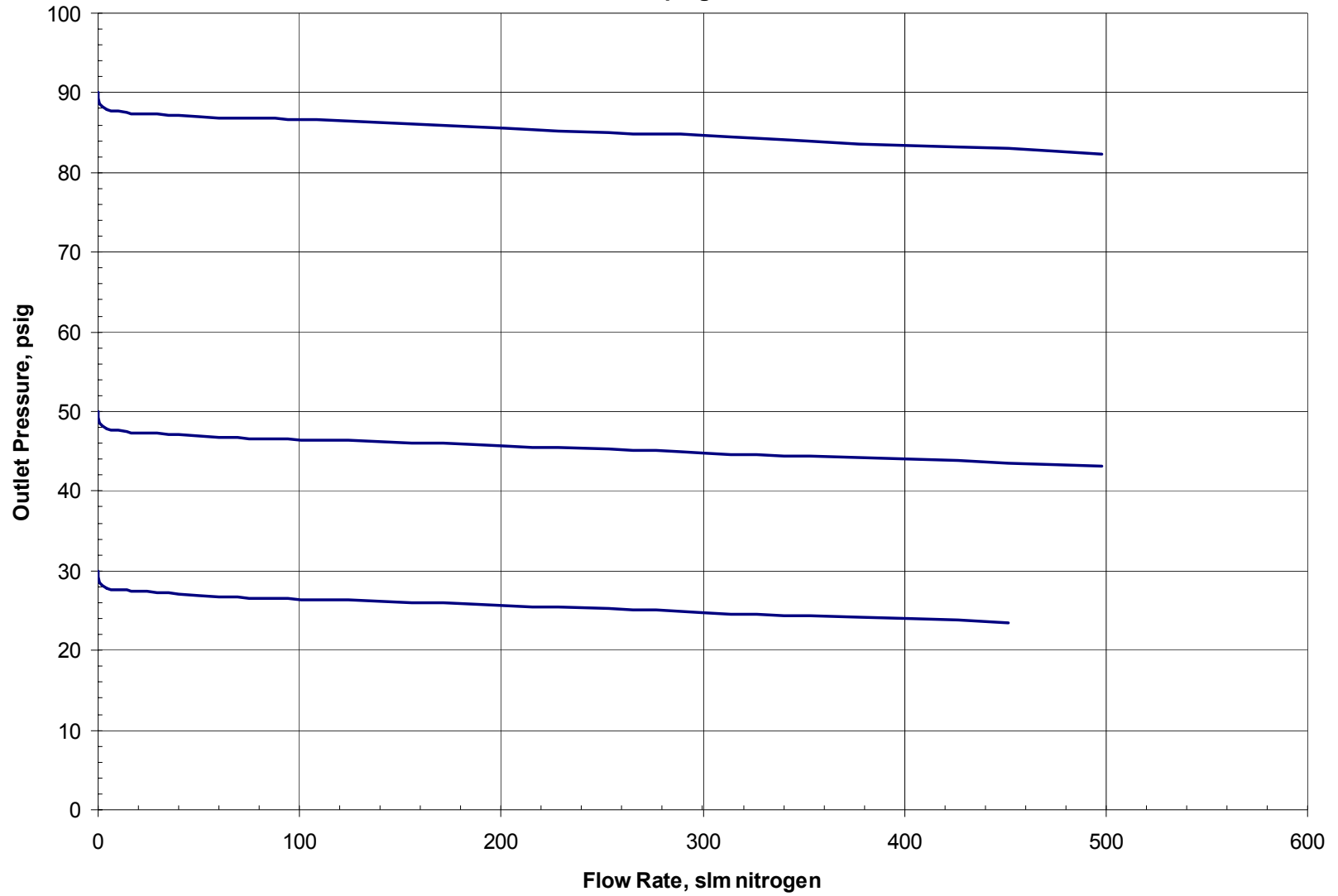
## AP1410T Flow Curve Index

Series	Inlet Pressure (psig)	Outlet Pressures (psig)	Connection Size	Flow Curve Number
AP1410T	600	90, 50, 30	1/4 inch	<a href="#">AP1410T-001</a>
			1/2 inch	<a href="#">AP1410T-002</a>
	300	90, 50, 30	1/4 inch	<a href="#">AP1410T-003</a>
			1/2 inch	<a href="#">AP1410T-004</a>
	100	75, 50, 30	1/4 inch	<a href="#">AP1410T-005</a>
			1/2 inch	<a href="#">AP1410T-006</a>
	50	30	1/4 inch	<a href="#">AP1410T-007</a>
			1/2 inch	<a href="#">AP1410T-008</a>

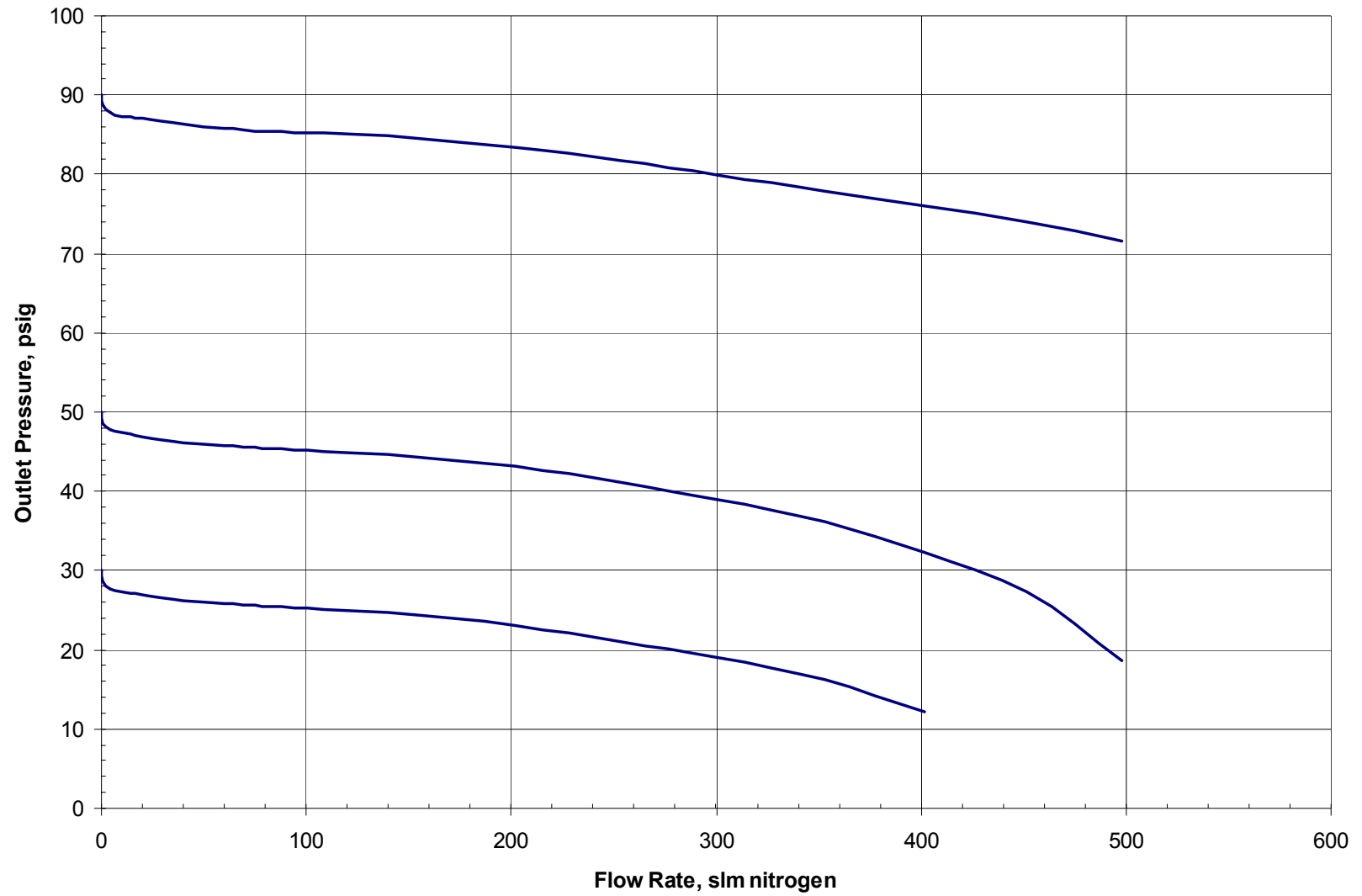
**AP1410TS 2PW FV4 FV4**  
Flow Curve at 600 psig Inlet Pressure



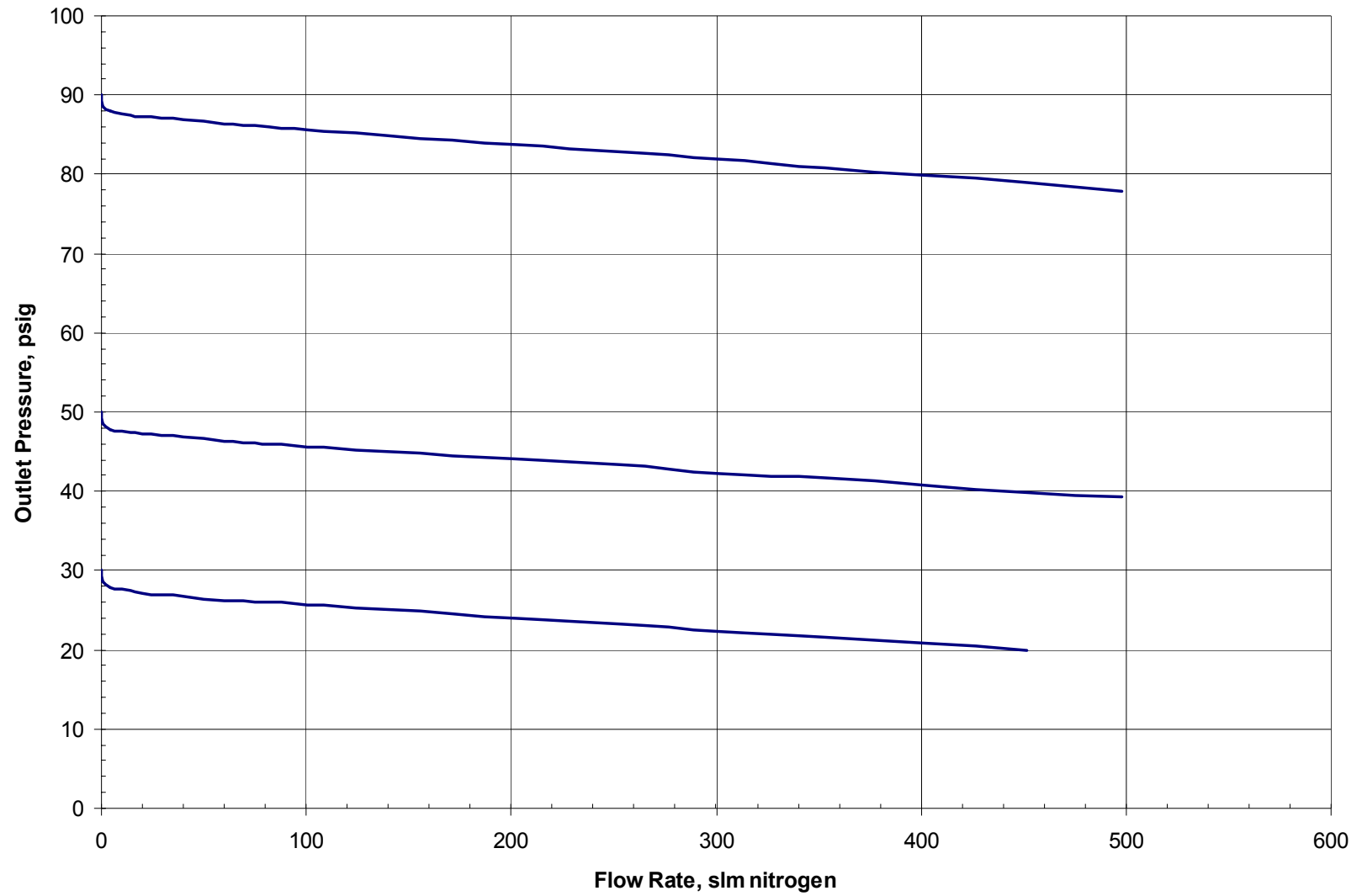
**AP1410TS 2PW FV8 FV8**  
Flow Curve at 600 psig Inlet Pressure



**AP1410TS 2PW FV4 FV4**  
Flow Curve at 300 psig Inlet Pressure

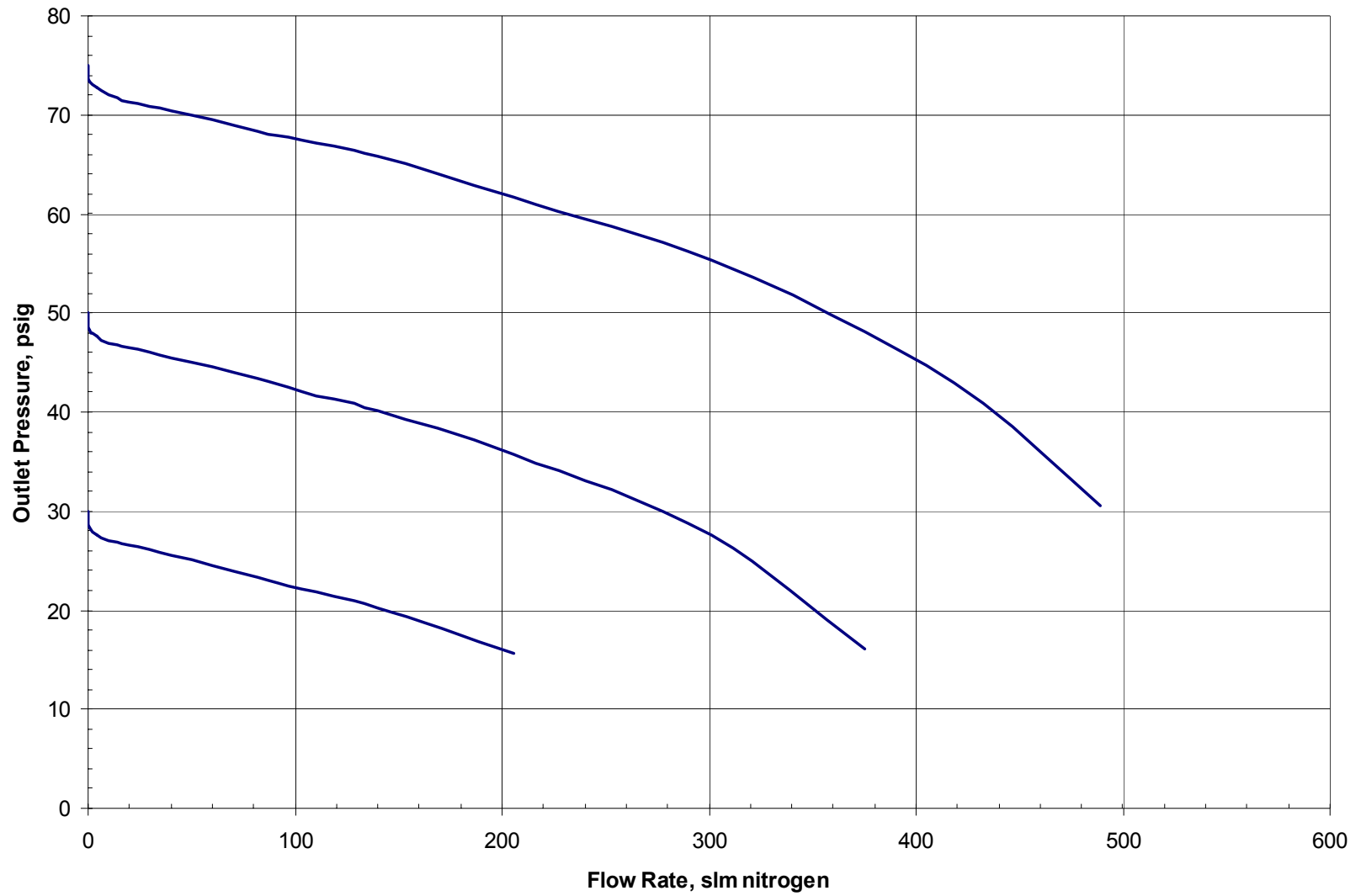


**AP1410TS 2PW FV8 FV8**  
Flow Curve at 300 psig Inlet Pressure

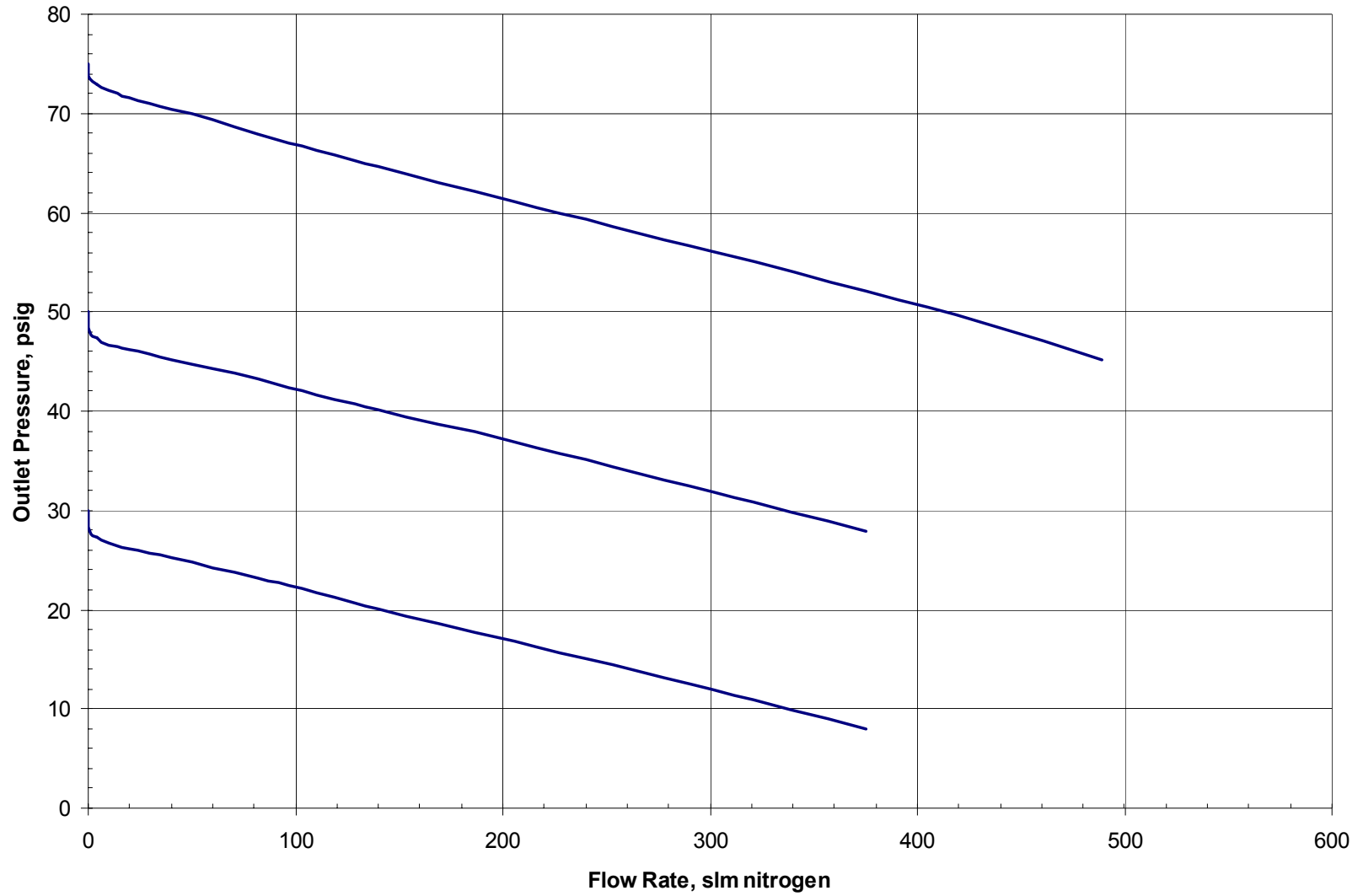




**AP1410TS 2PW FV4 FV4**  
Flow Curve at 100 psig Inlet Pressure

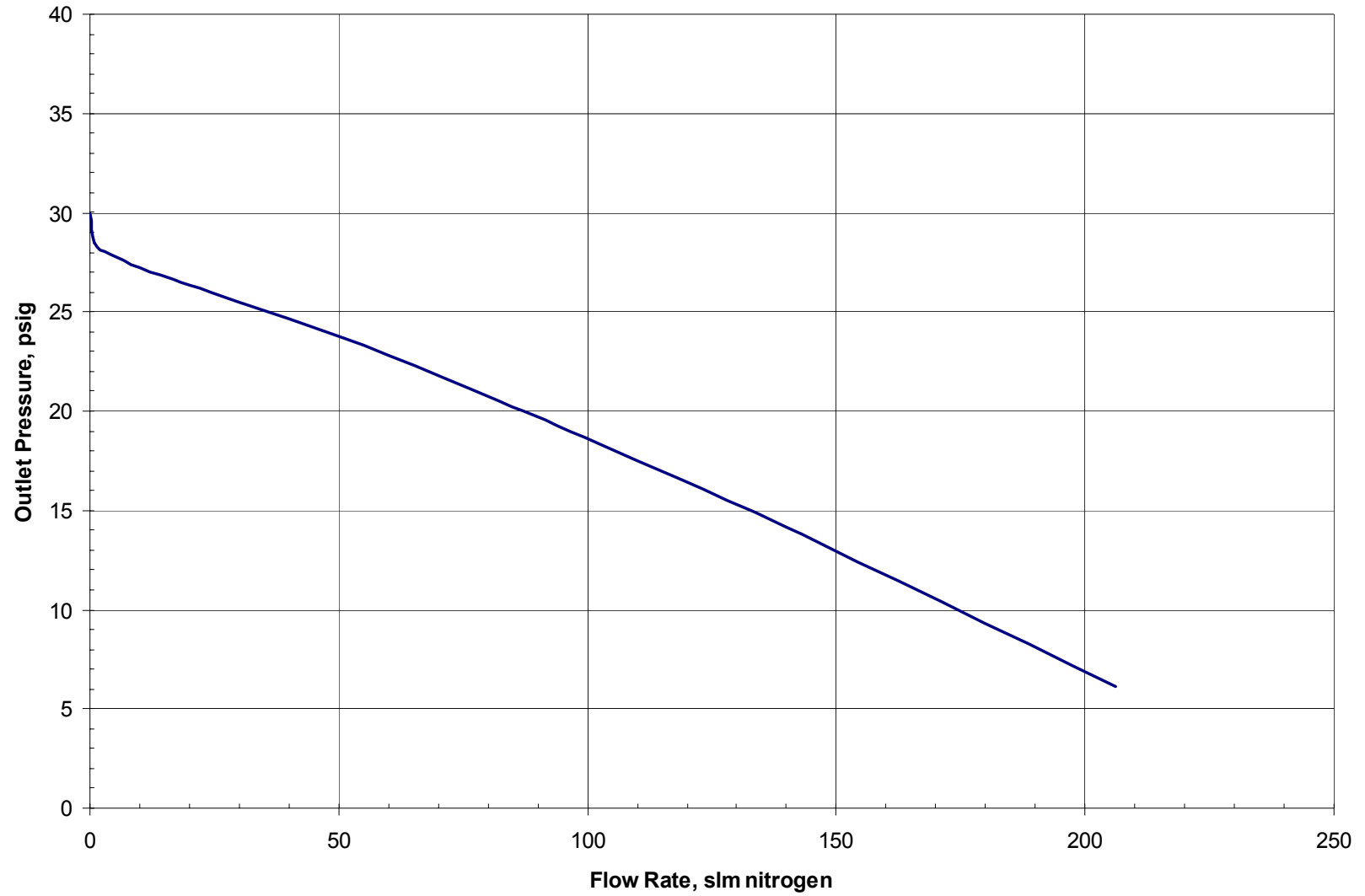


**AP1410TS 2PW FV8 FV8**  
Flow Curve at 100 psig Inlet Pressure



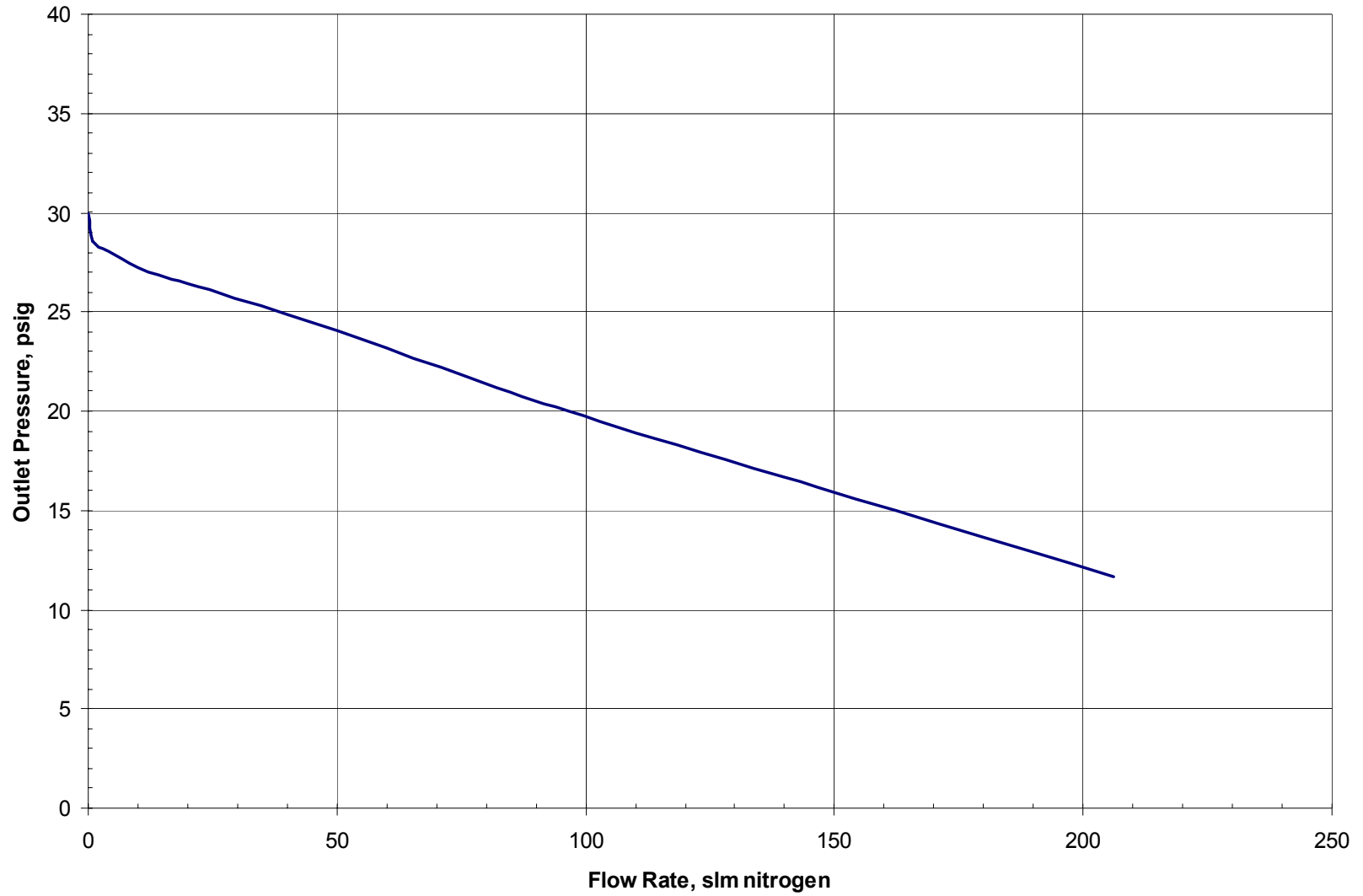
### AP1410TS 2PW FV4 FV4

Flow Curve at 50 psig Inlet Pressure



### AP1410TS 2PW FV8 FV8

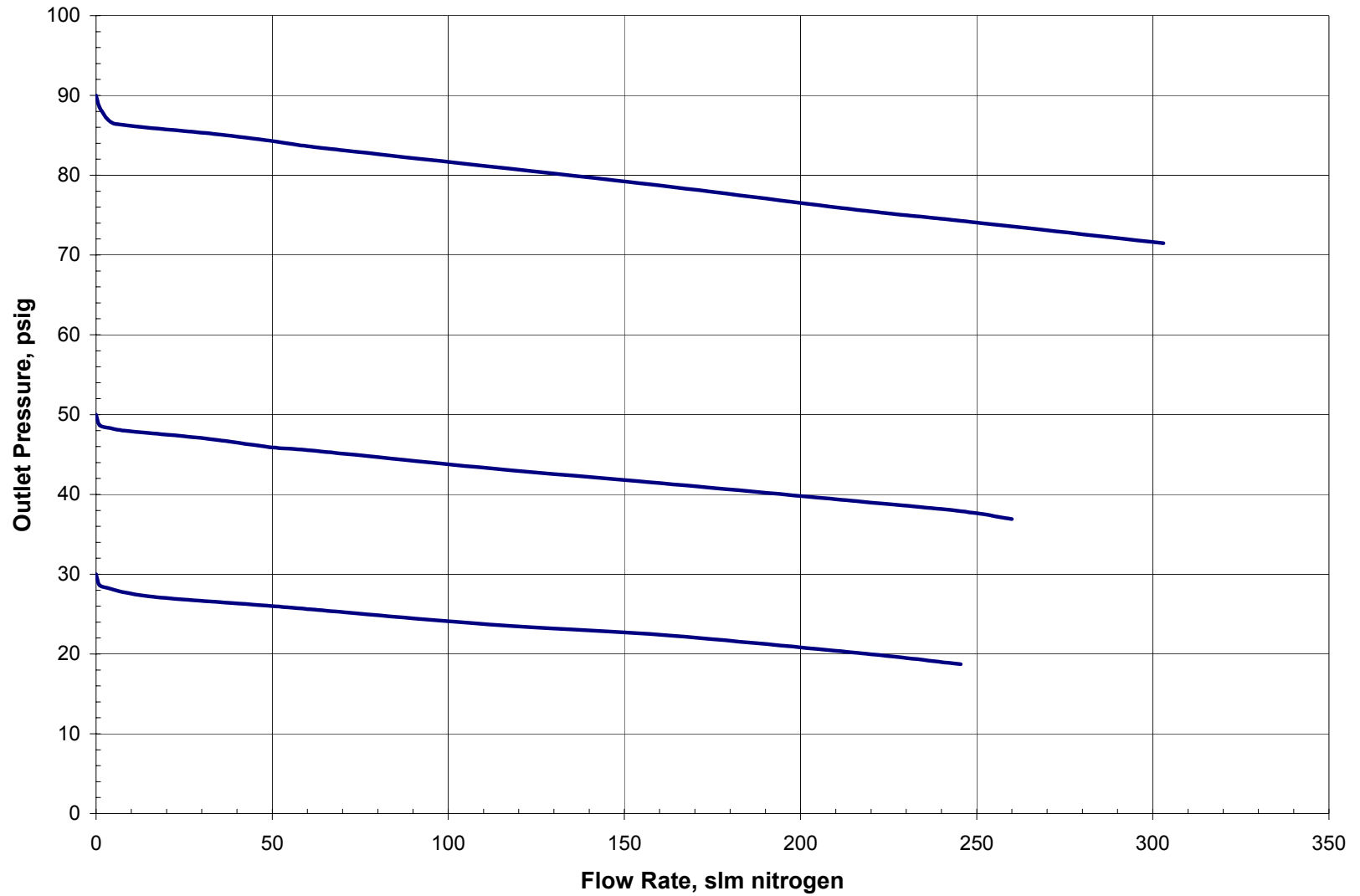
Flow Curve at 50 psig Inlet Pressure



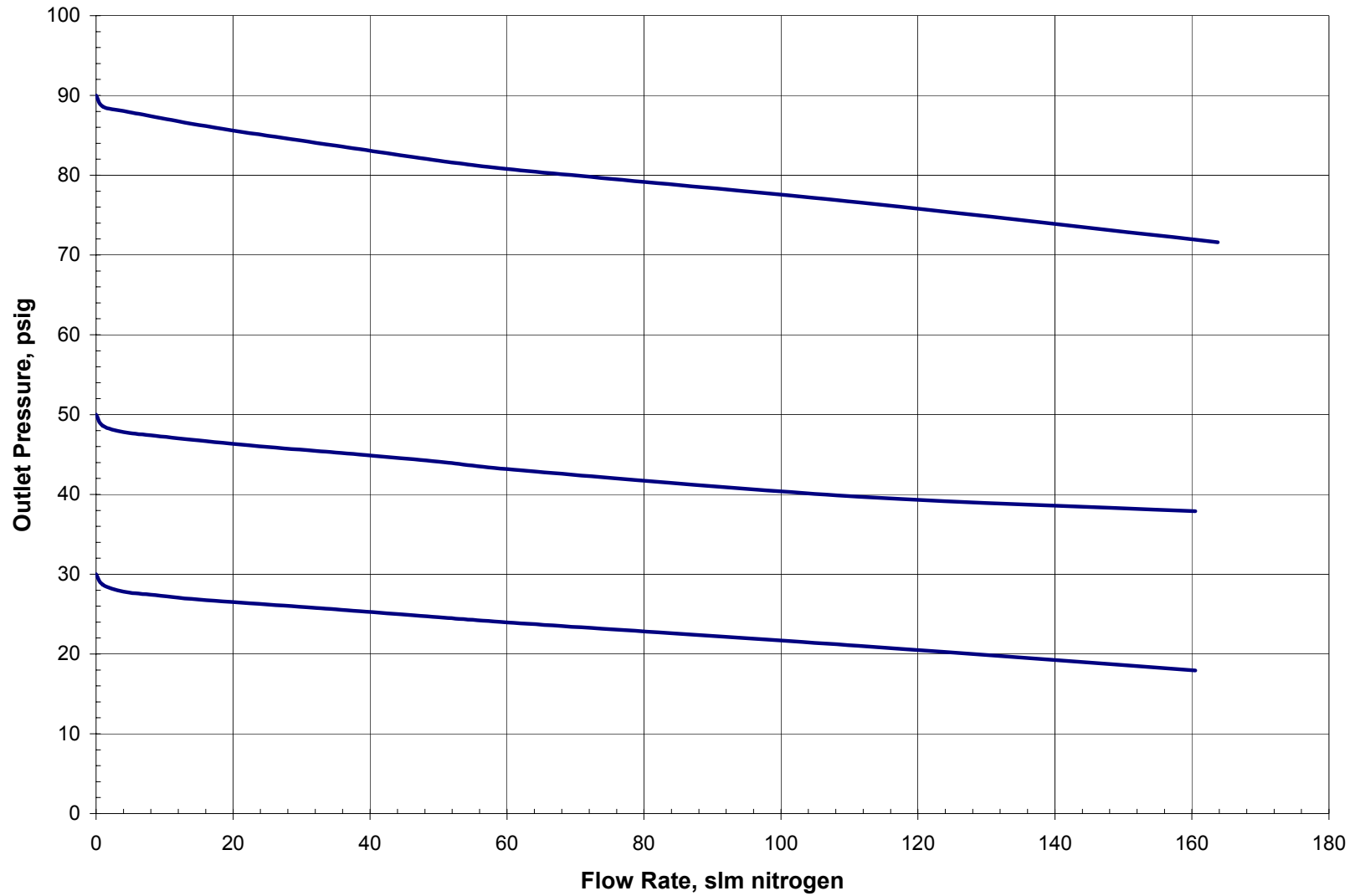
## AP1510 Flow Curve Index

Series	Inlet Pressure (psig)	Outlet Pressures (psig)	Connection Size	Flow Curve Number
AP1510	600	90, 50, 30	1/4 inch	<a href="#">AP1510-001</a>
	300	90, 50, 30	1/4 inch	<a href="#">AP1510-002</a>
	150	90, 50, 30	1/4 inch	<a href="#">AP1510-003</a>
	100	75, 50, 30	1/4 inch	<a href="#">AP1510-004</a>
	50	30	1/4 inch	<a href="#">AP1510-005</a>

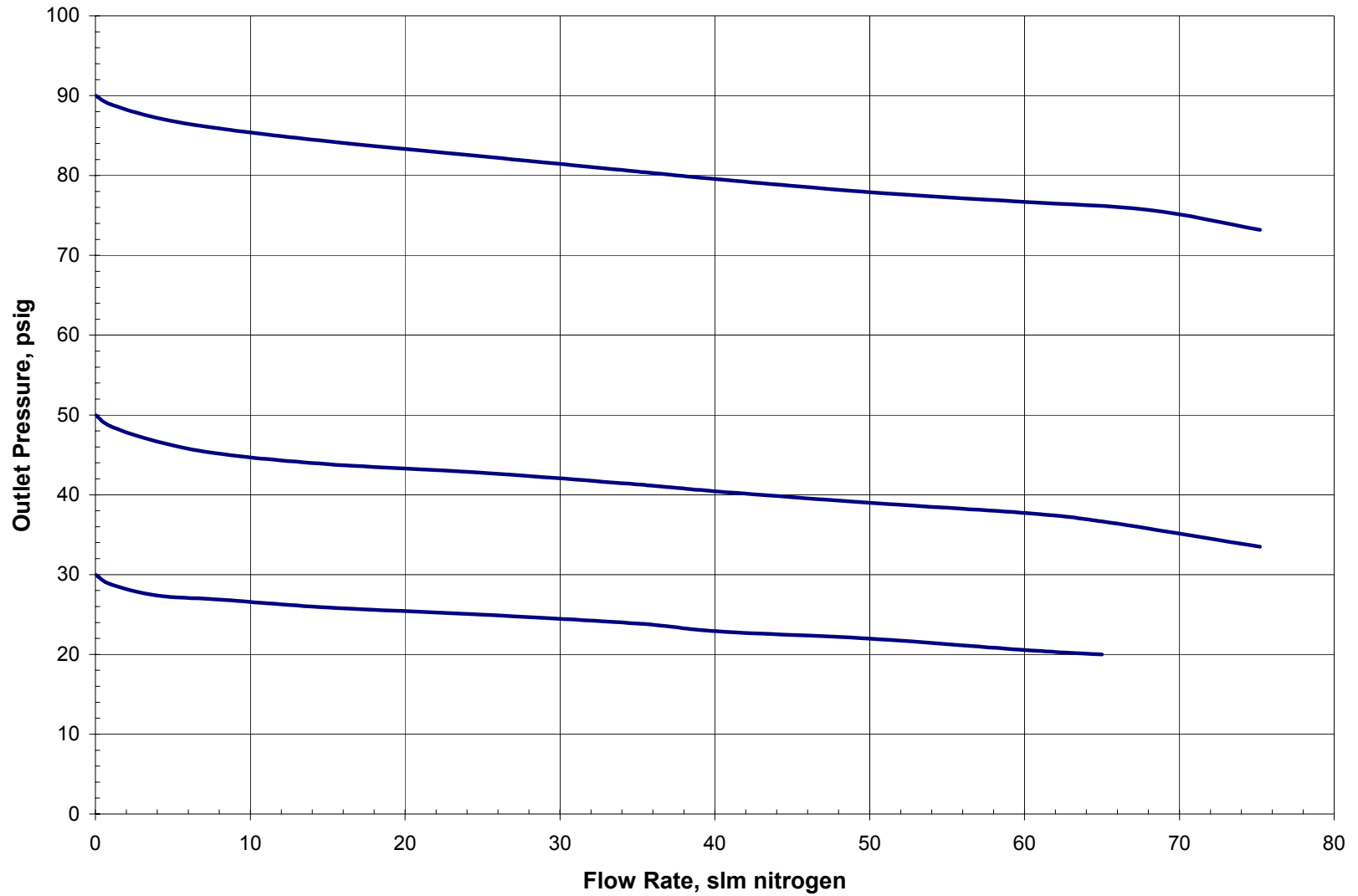
**AP1510S 2PW FV4 FV4**  
Flow Curve at 600 psig Inlet Pressure



**AP1510S 2PW FV4 FV4**  
Flow Curve at 300 psig Inlet Pressure

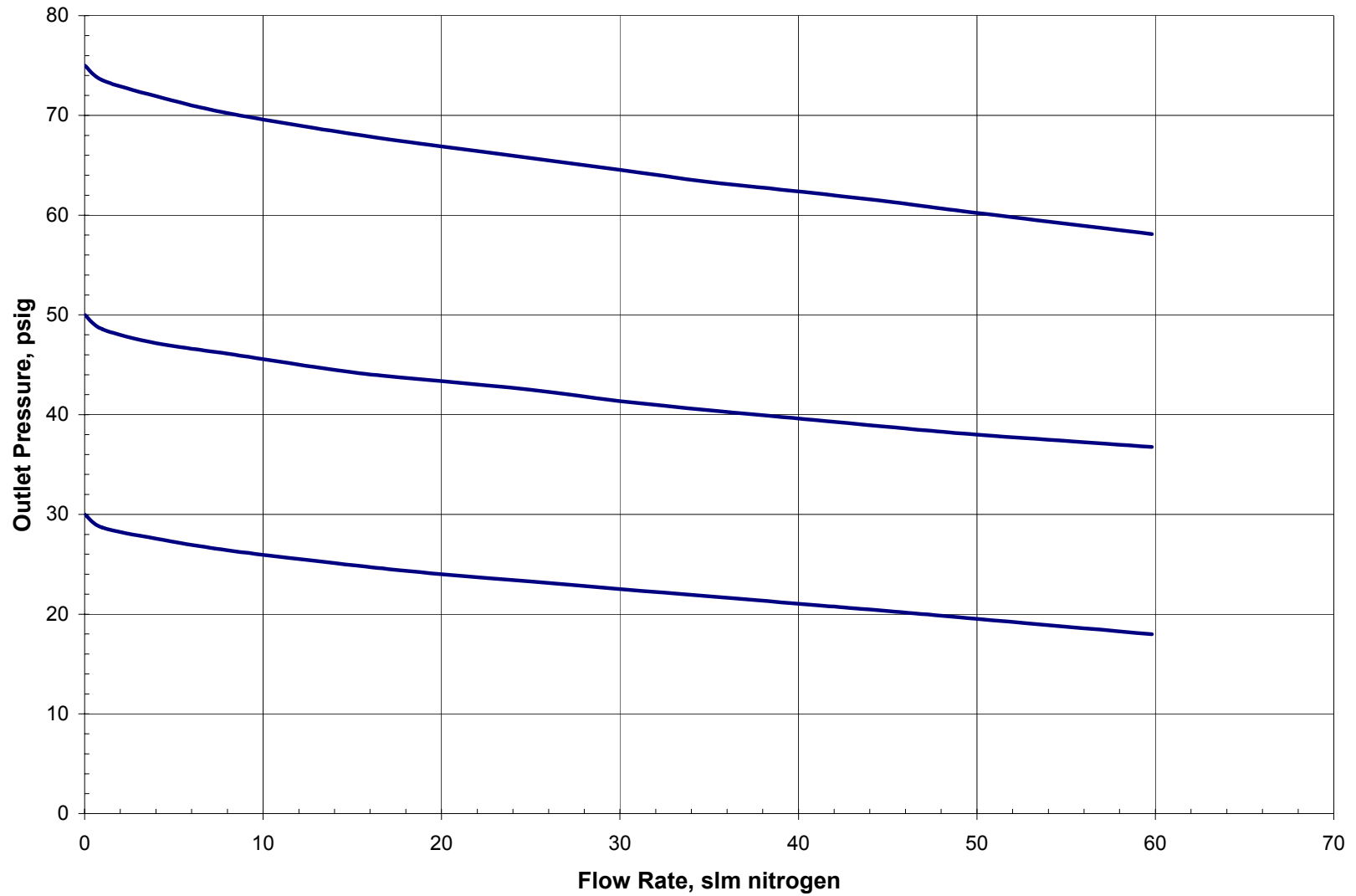


**AP1510S 2PW FV4 FV4**  
Flow Curve at 150 psig Inlet Pressure

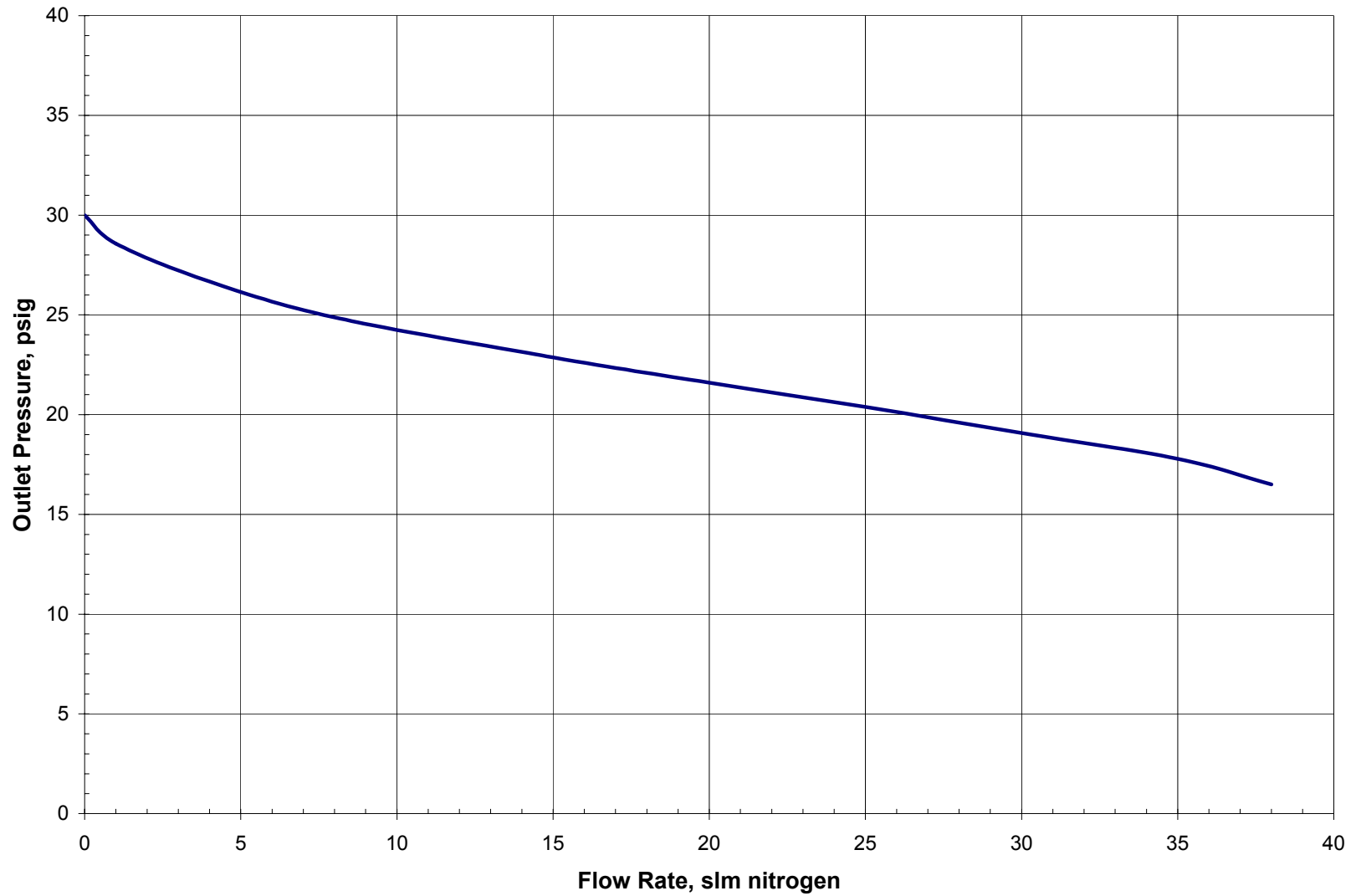




**AP1510S 2PW FV4 FV4**  
Flow Curve at 100 psig Inlet Pressure



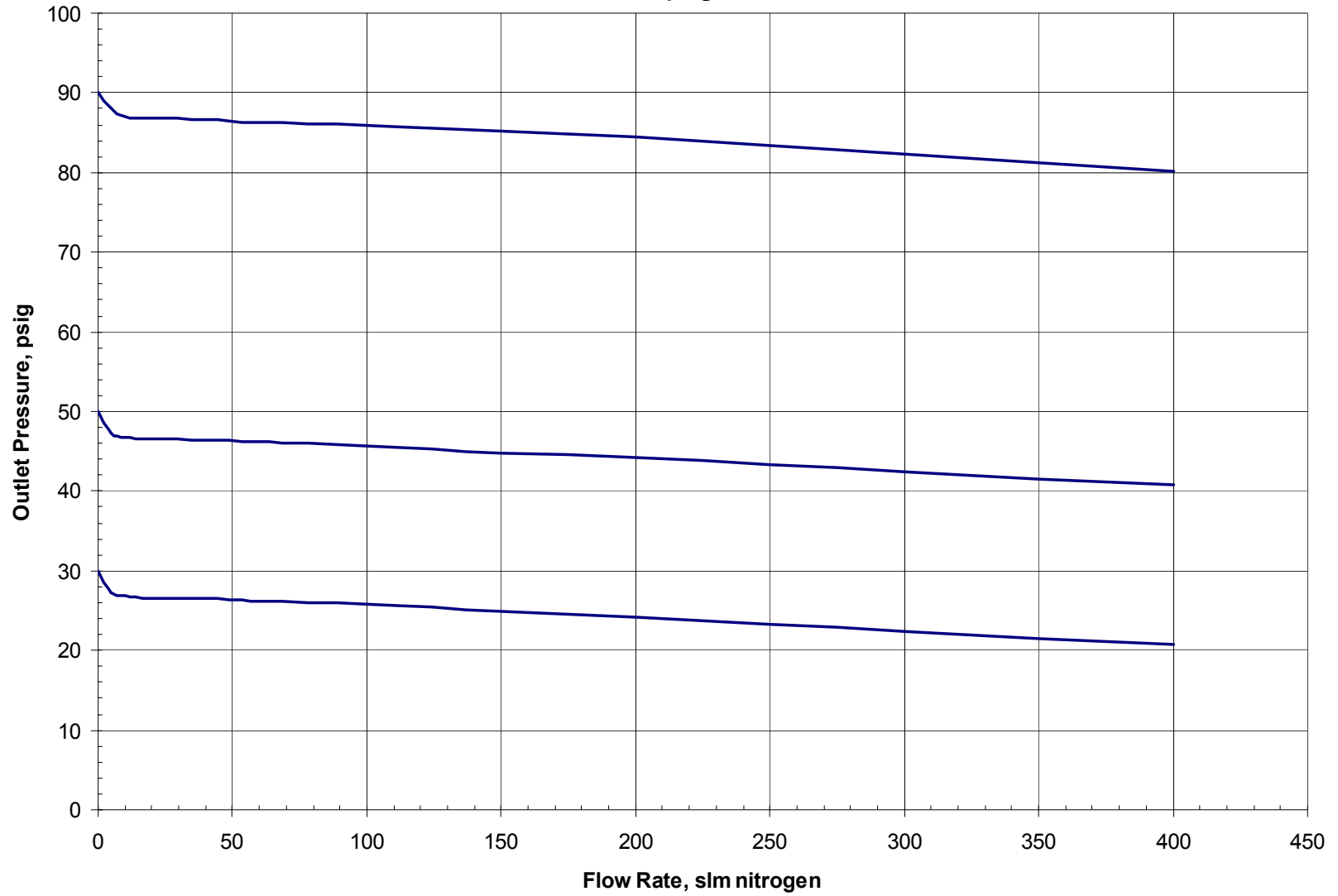
**AP1510S 2PW FV4 FV4**  
Flow Curve at 50 psig Inlet Pressure



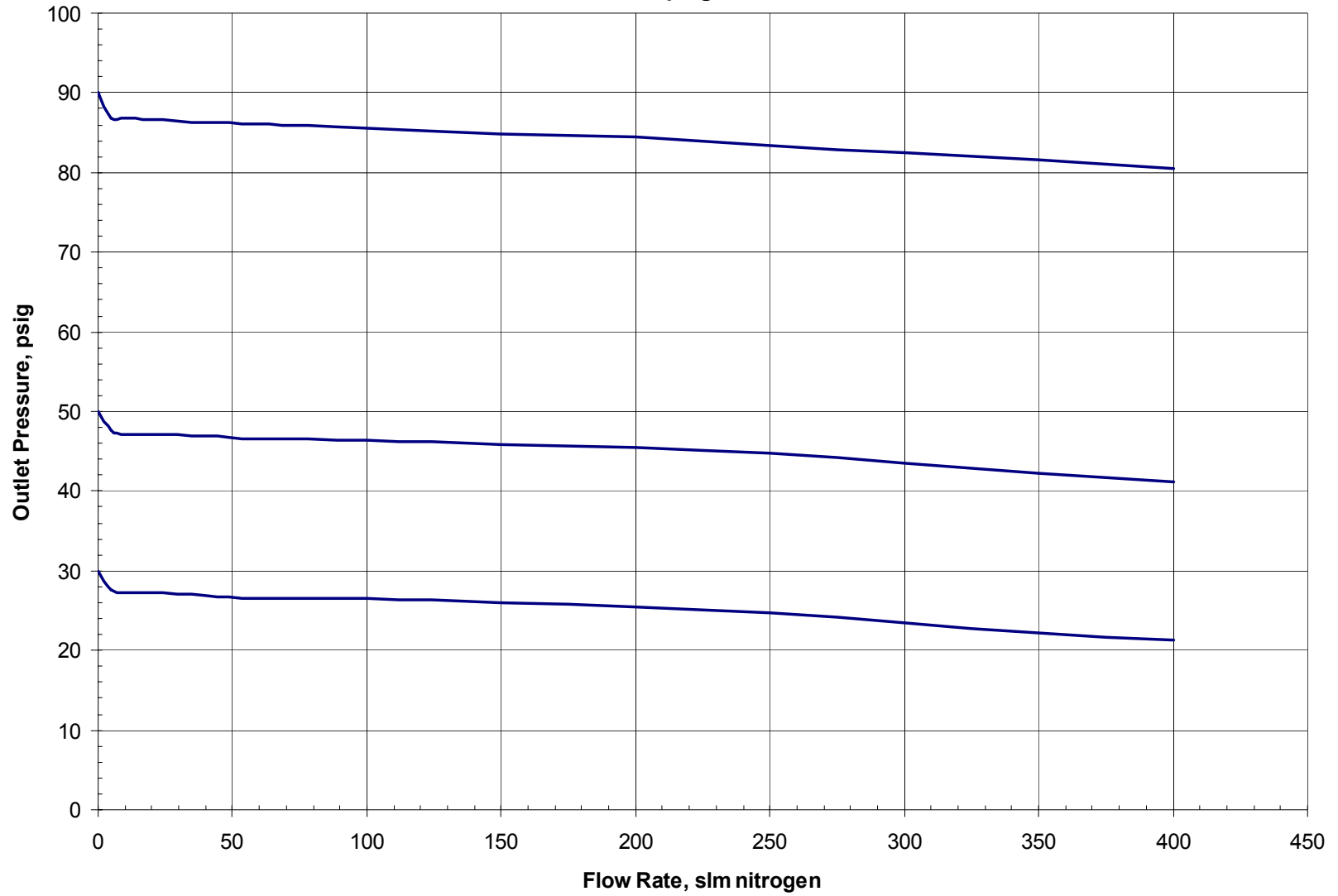
**AP1910 HF Flow Curve Index**

Series	Inlet Pressure (psig)	Outlet Pressures (psig)	Connection Size	Flow Curve Number
AP1910 HF	600	90, 50, 30	1/4 inch	<a href="#">AP1910HF-001</a>
			1/2 inch	<a href="#">AP1910HF-002</a>
	300	90, 50, 30	1/4 inch	<a href="#">AP1910HF-003</a>
			1/2 inch	<a href="#">AP1910HF-004</a>
	100	75, 50, 30	1/4 inch	<a href="#">AP1910HF-005</a>
			1/2 inch	<a href="#">AP1910HF-006</a>

**AP1910S 2PW FV4 FV4 HF**  
Flow Curve at 600 psig Inlet Pressure

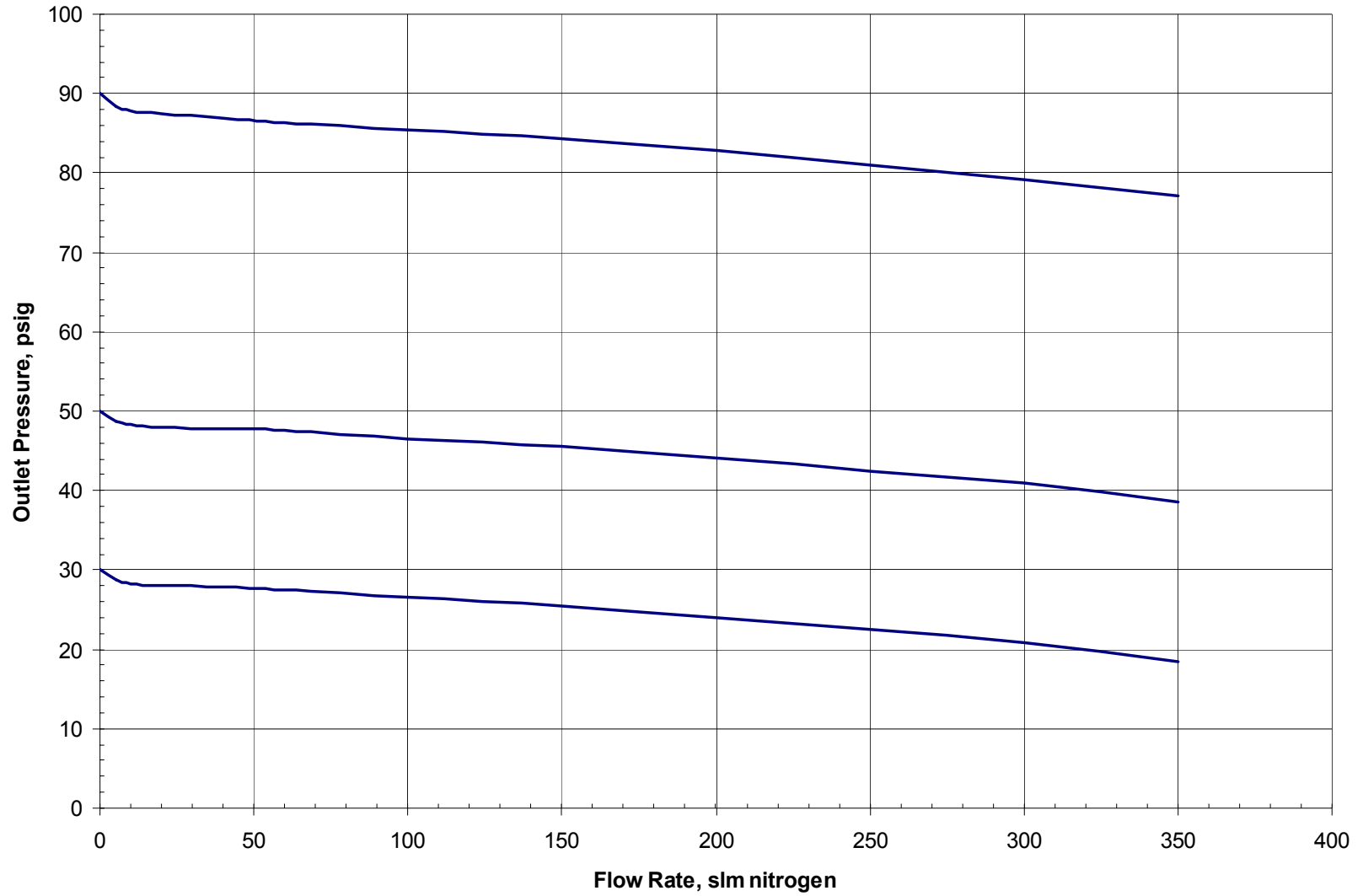


**AP1910S 2PW FV8 FV8 HF**  
Flow Curve at 600 psig Inlet Pressure

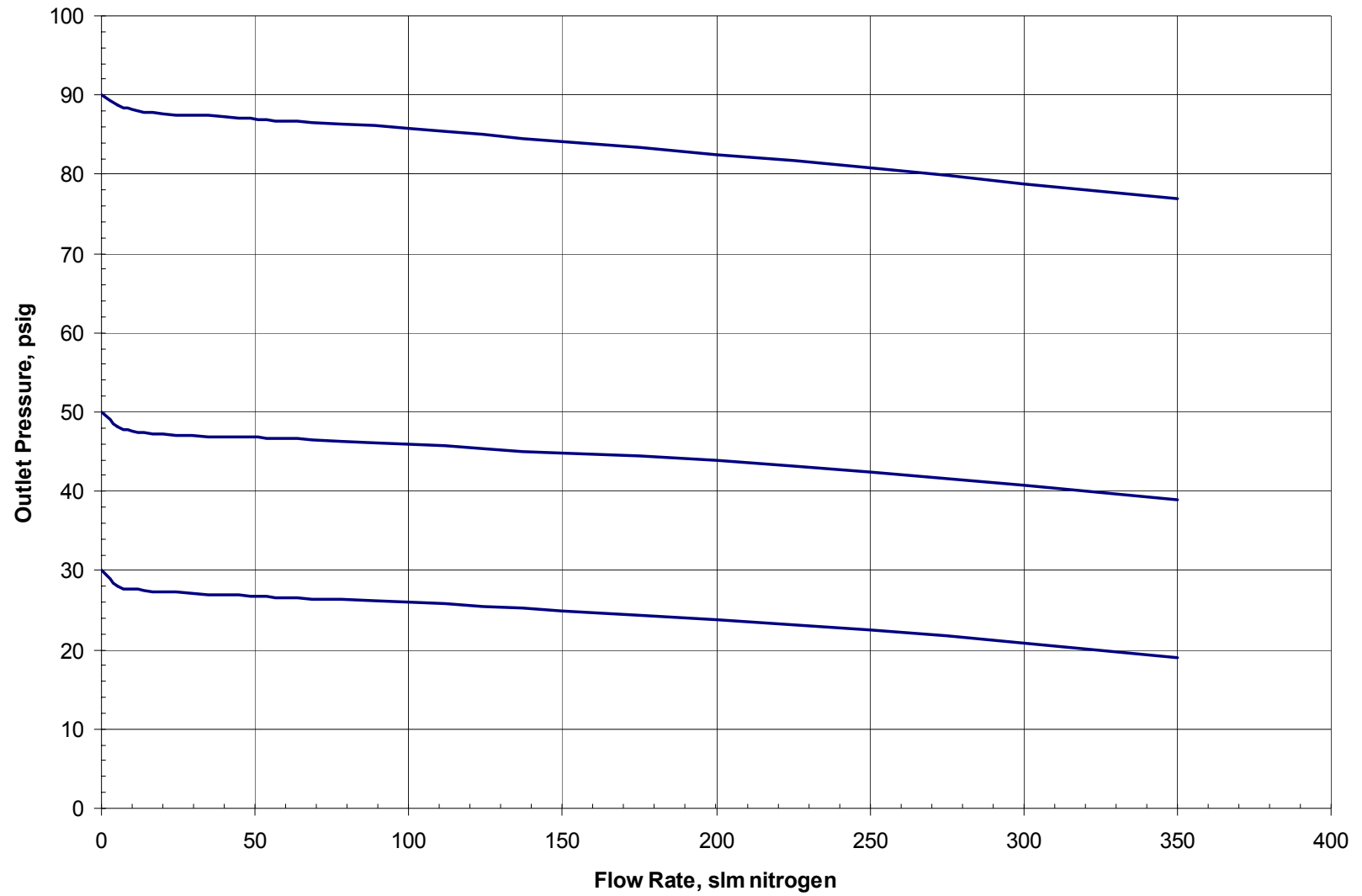


### AP1910S 2PW FV4 FV4 HF

Flow Curve at 300 psig Inlet Pressure

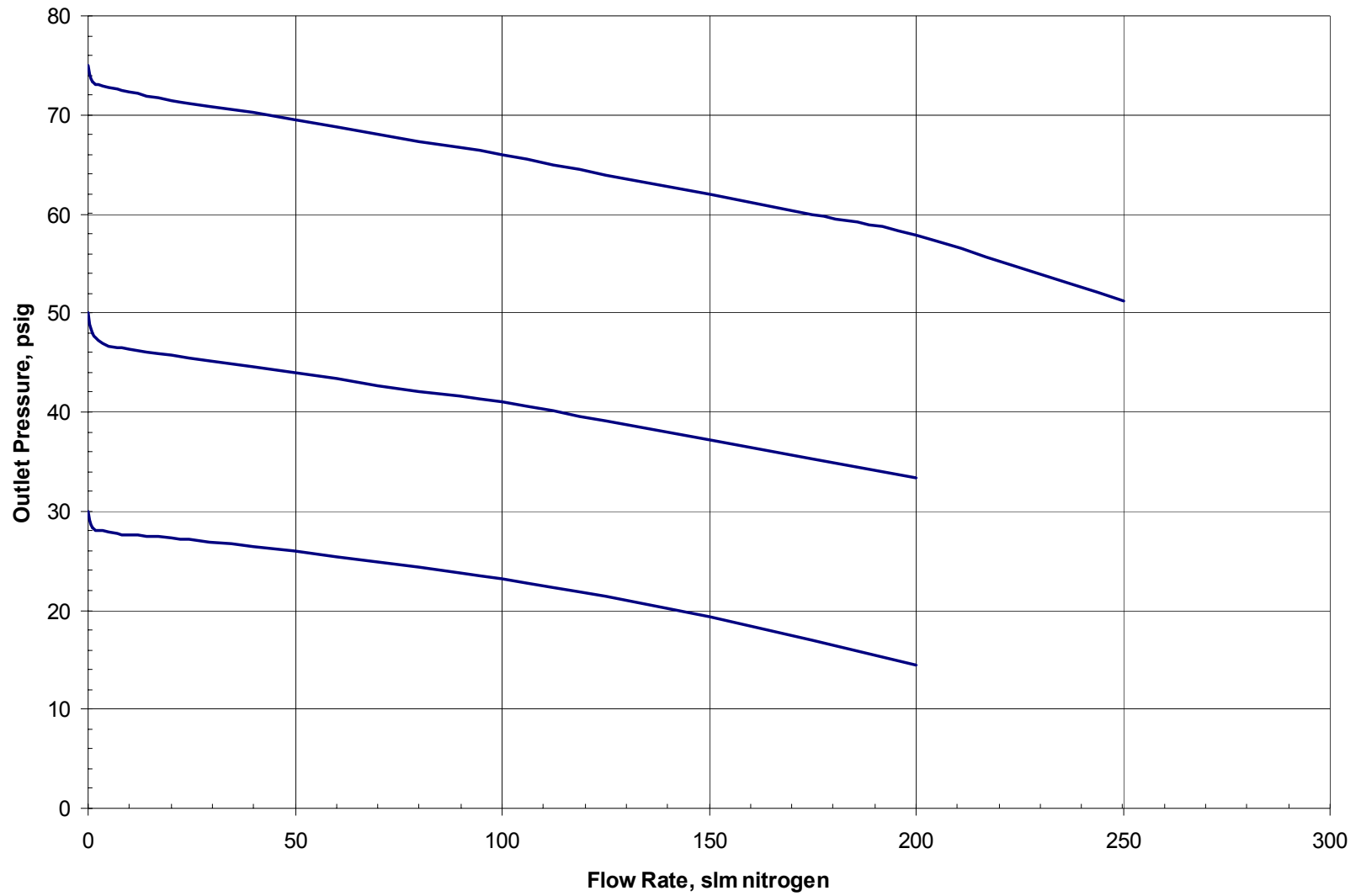


**AP1910S 2PW FV8 FV8 HF**  
Flow Curve at 300 psig Inlet Pressure



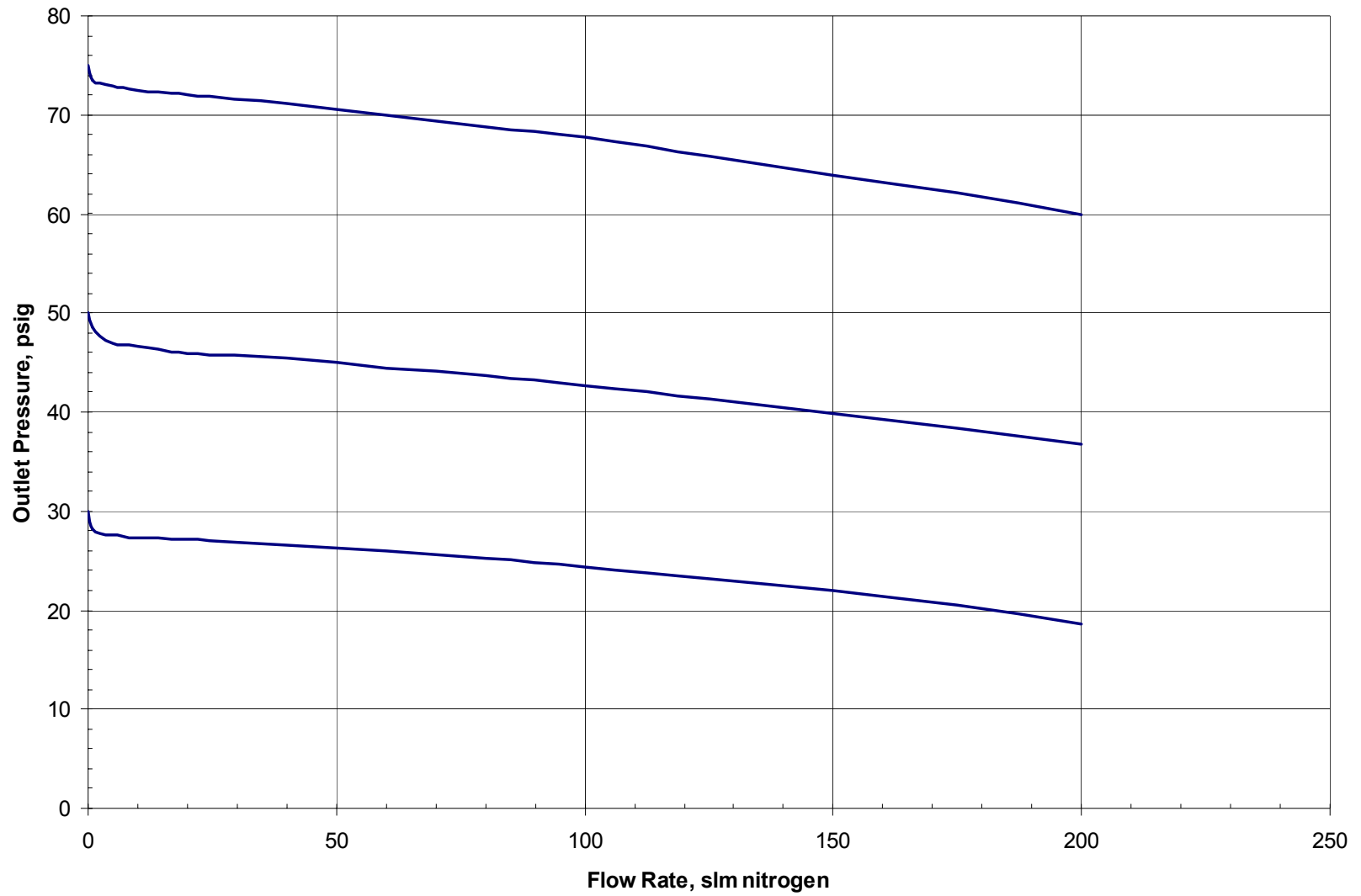
### AP1910S 2PW FV4 FV4 HF

Flow Curve at 100 psig Inlet Pressure





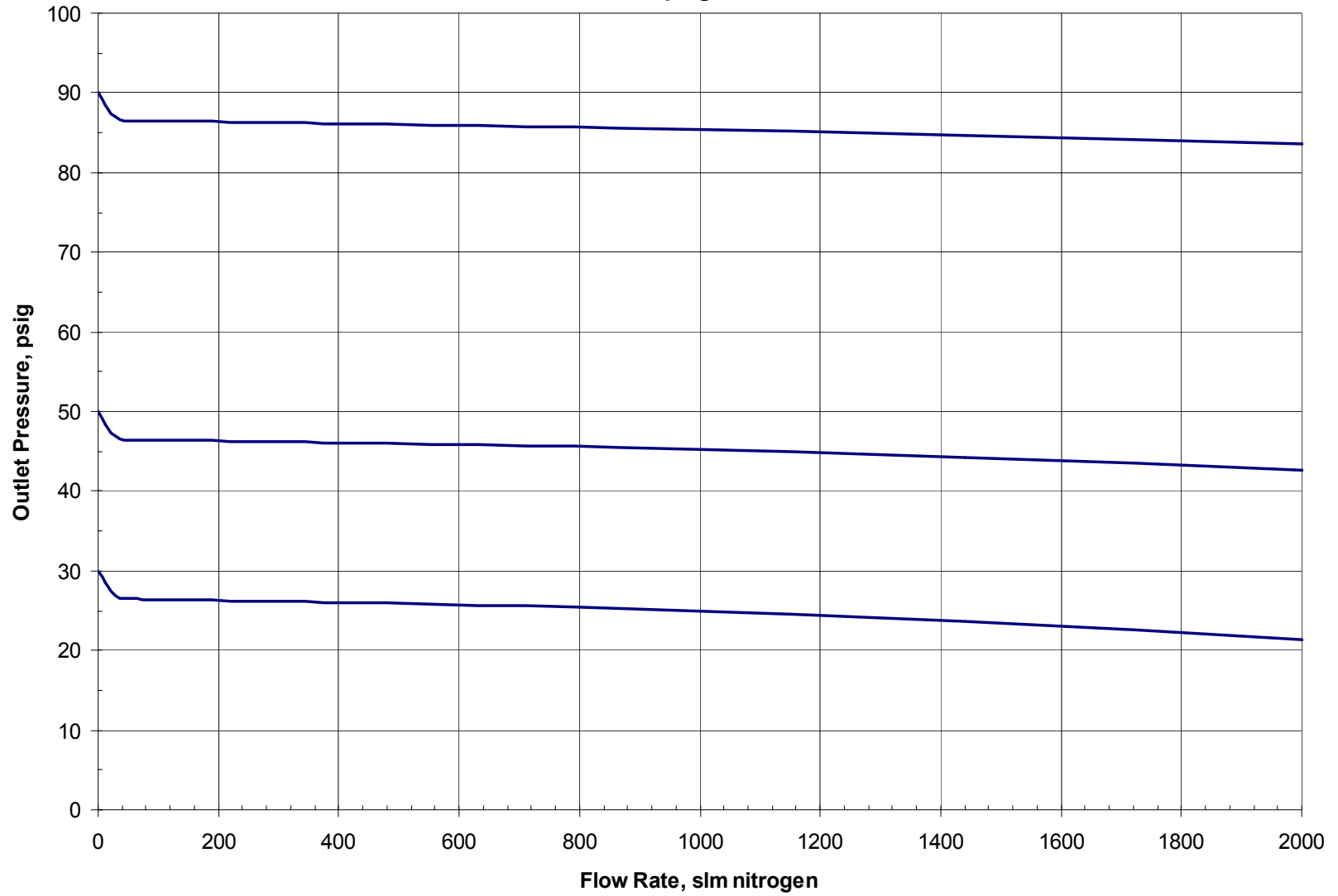
**AP1910S 2PW FV8 FV8 HF**  
Flow Curve at 100 psig Inlet Pressure



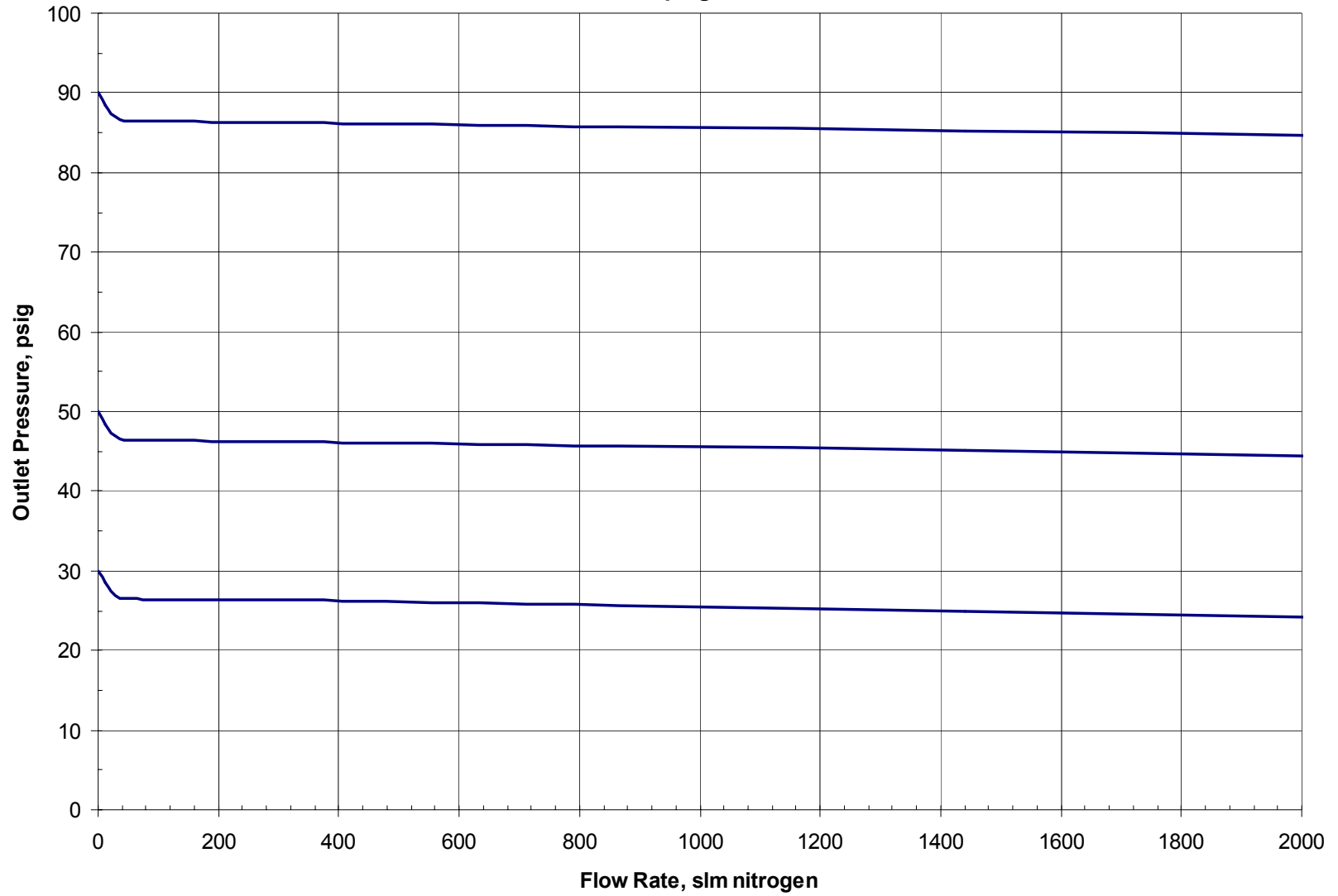
### AP9000 Flow Curve Index

Series	Inlet Pressure (psig)	Outlet Pressures (psig)	Connection Size	Flow Curve Number
AP9010	600	90, 50, 30	3/4 inch	<a href="#">AP9010-001</a>
			1 inch	<a href="#">AP9010-002</a>
	300	90, 50, 30	3/4 inch	<a href="#">AP9010-003</a>
			1 inch	<a href="#">AP9010-004</a>
	100	75, 50, 30	3/4 inch	<a href="#">AP9010-005</a>
			1 inch	<a href="#">AP9010-006</a>
AP9030	600	250	3/4 inch	<a href="#">AP9030-001</a>
			1 inch	<a href="#">AP9030-002</a>
AP9110	300	90, 50, 30	3/4 inch	<a href="#">AP9110-001</a>
			1 inch	<a href="#">AP9110-002</a>
	150	90, 50, 30	3/4 inch	<a href="#">AP9110-003</a>
			1 inch	<a href="#">AP9110-004</a>
	100	75, 50, 30	3/4 inch	<a href="#">AP9110-005</a>
			1 inch	<a href="#">AP9110-006</a>

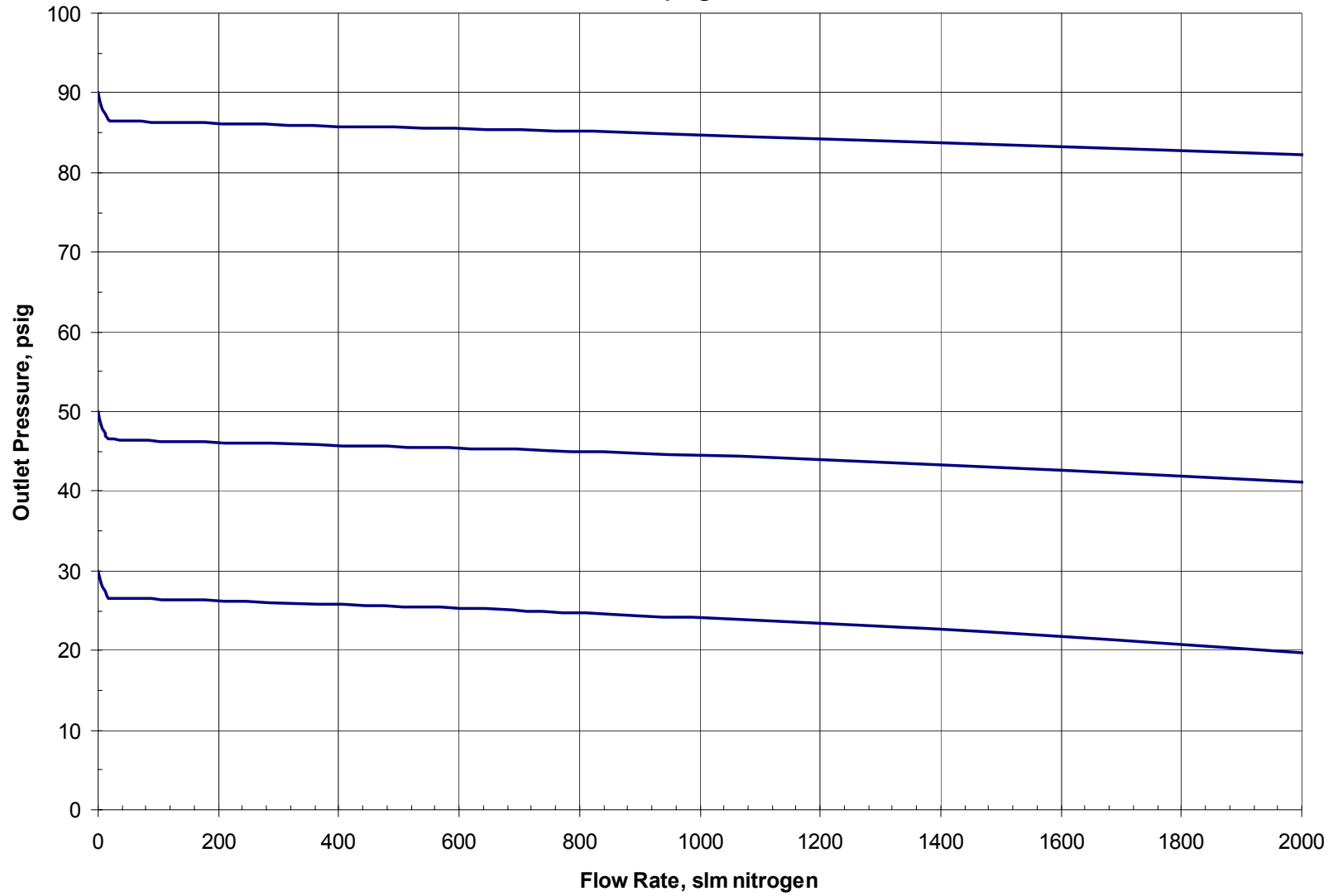
**AP9010S 2PW FV12 FV12**  
Flow Curve at 600 psig Inlet Pressure



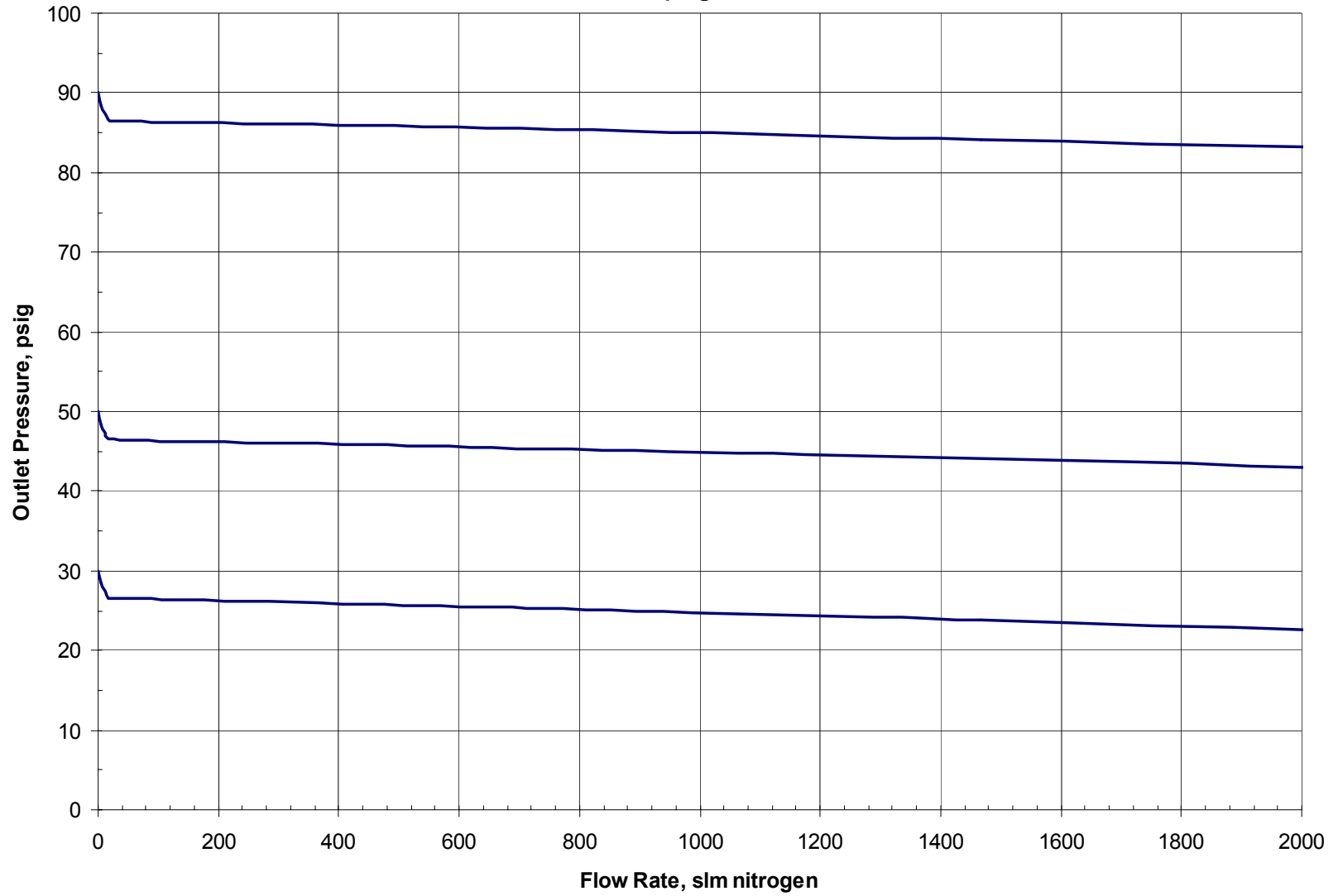
**AP9010S 2PW FV16 FV16**  
Flow Curve at 600 psig Inlet Pressure



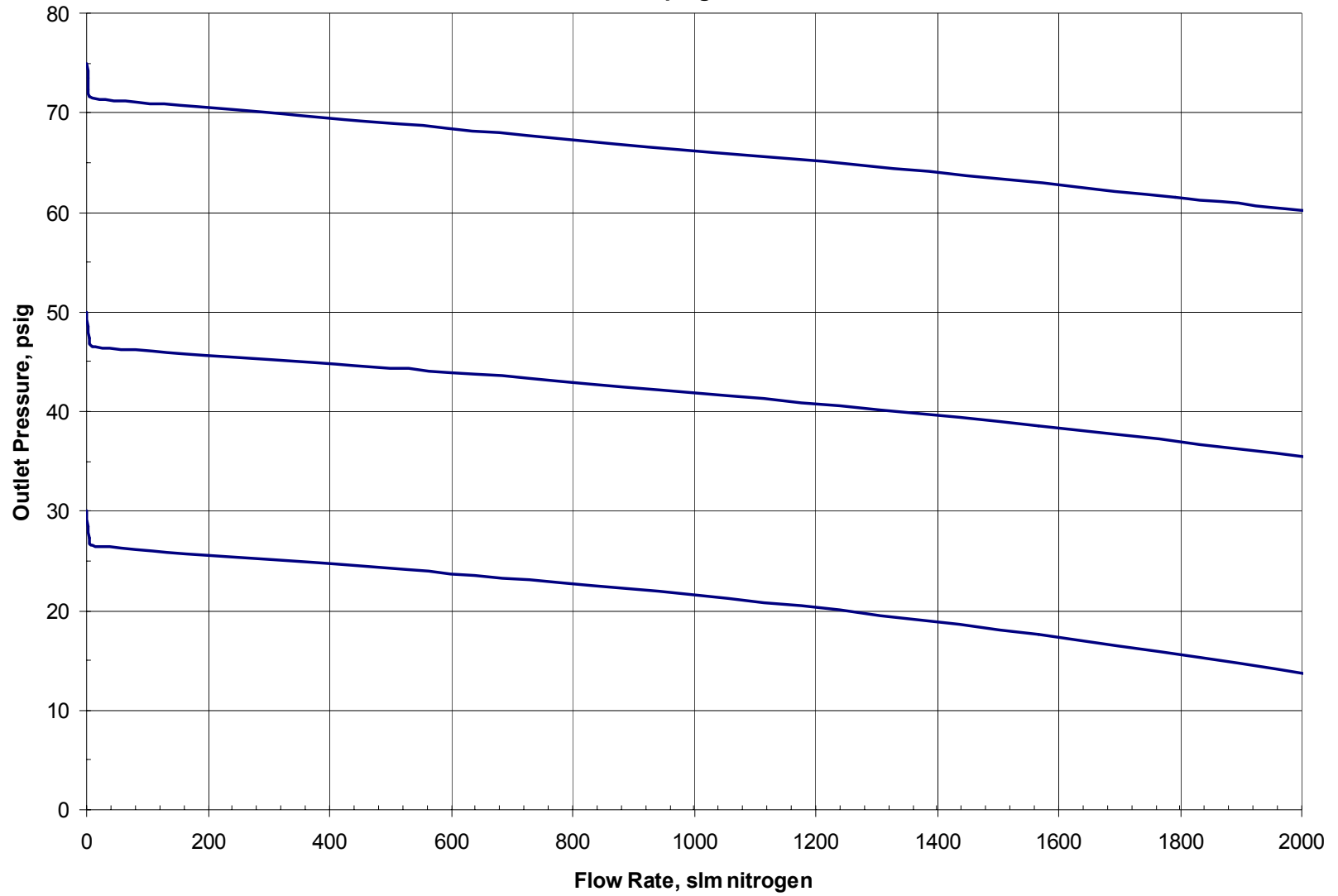
**AP9010S 2PW FV12 FV12**  
Flow Curve at 300 psig Inlet Pressure



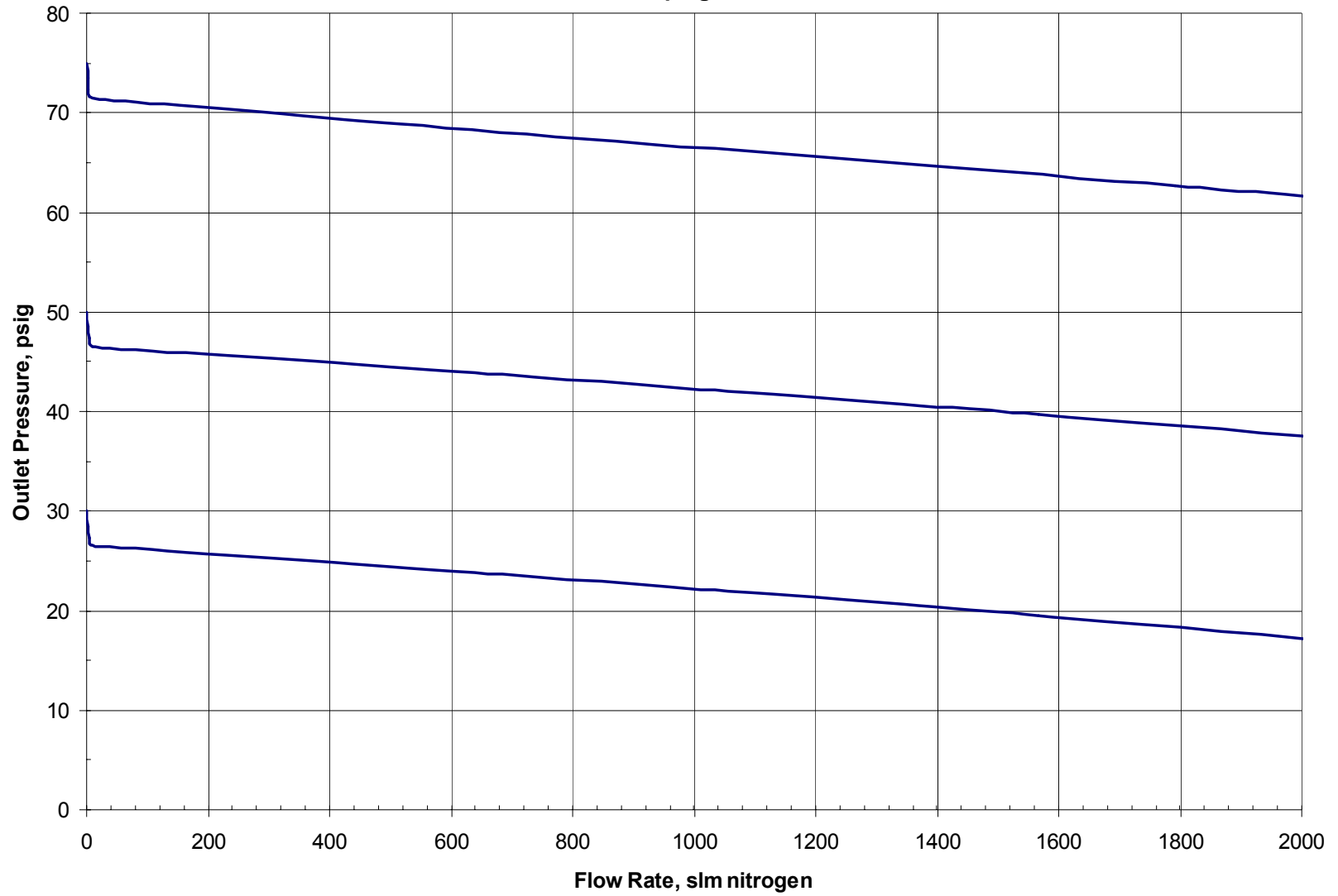
**AP9010S 2PW FV16 FV16**  
Flow Curve at 300 psig Inlet Pressure



**AP9010S 2PW FV12 FV12**  
Flow Curve at 100 psig Inlet Pressure

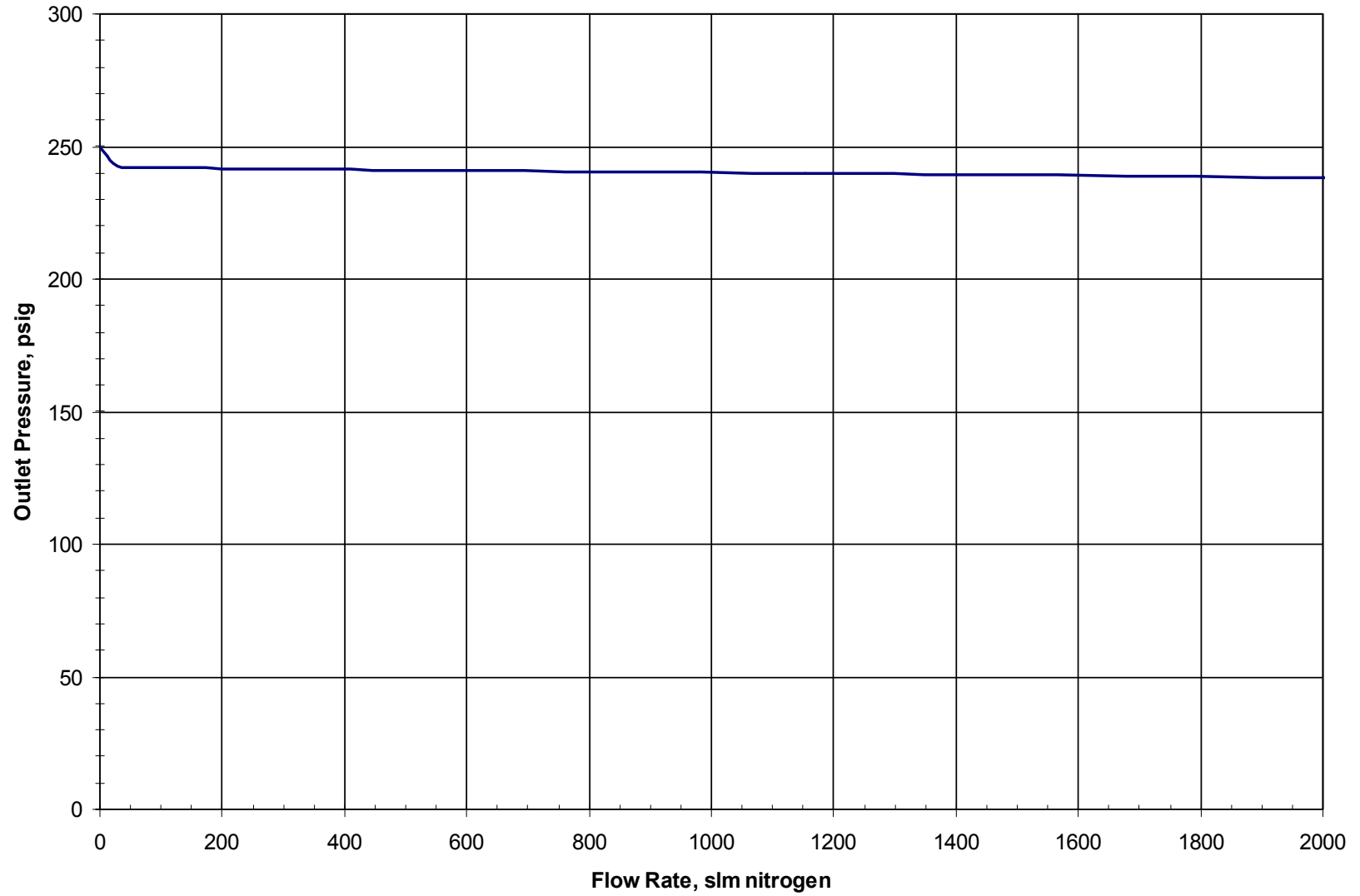


**AP9010S 2PW FV16 FV16**  
Flow Curve at 100 psig Inlet Pressure

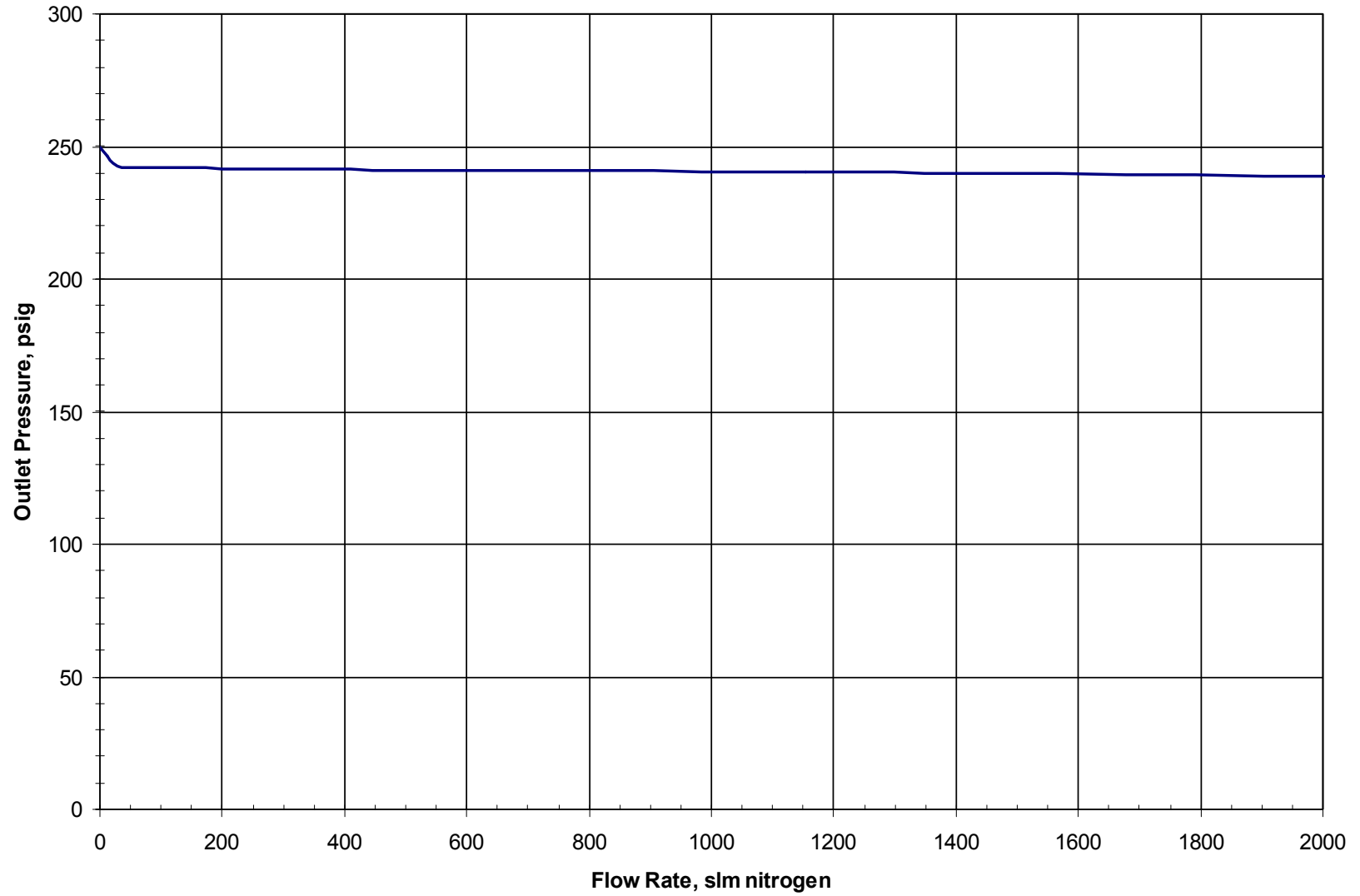




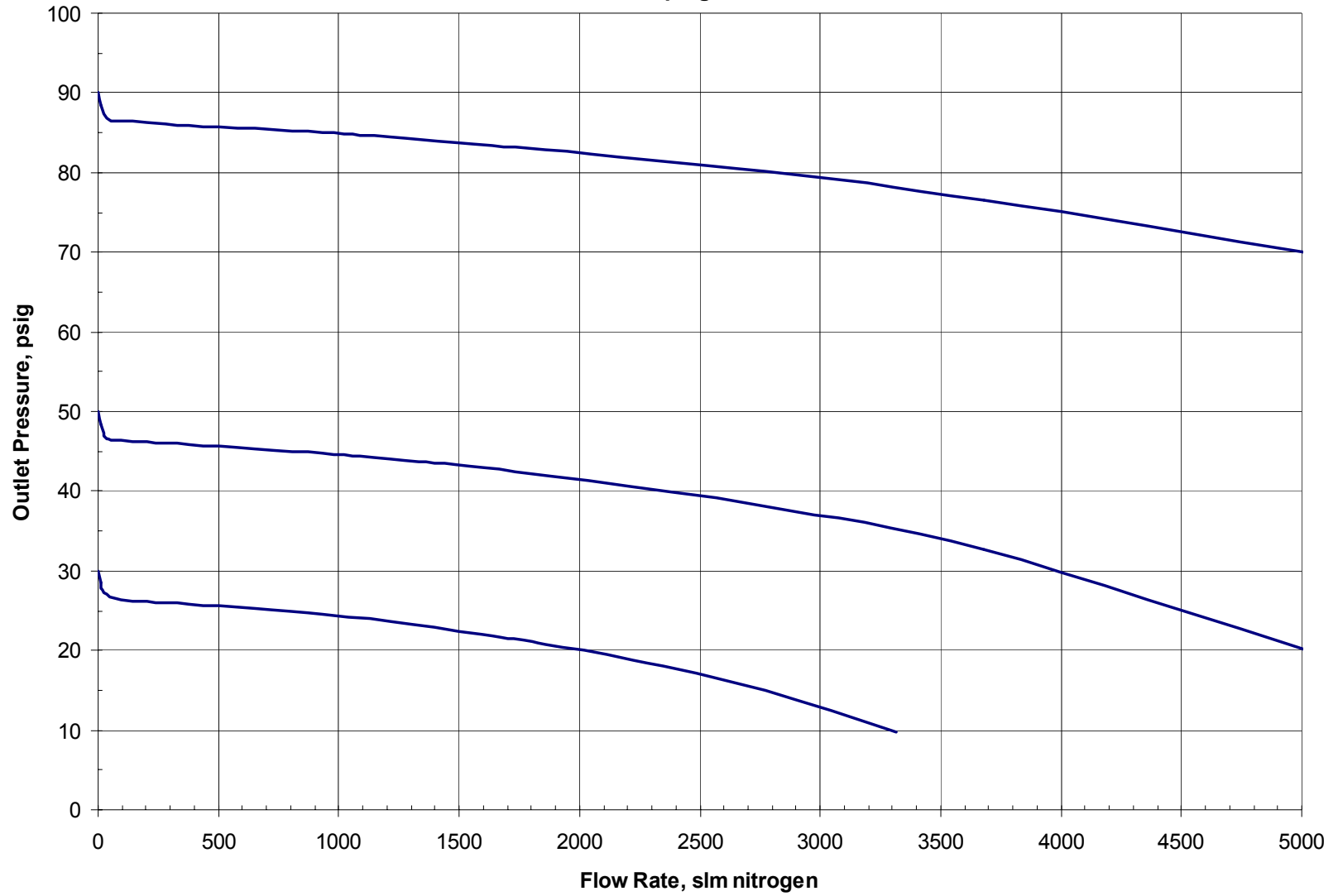
**AP9030S 2PW FV12 FV12**  
Flow Curve at 600 psig Inlet Pressure



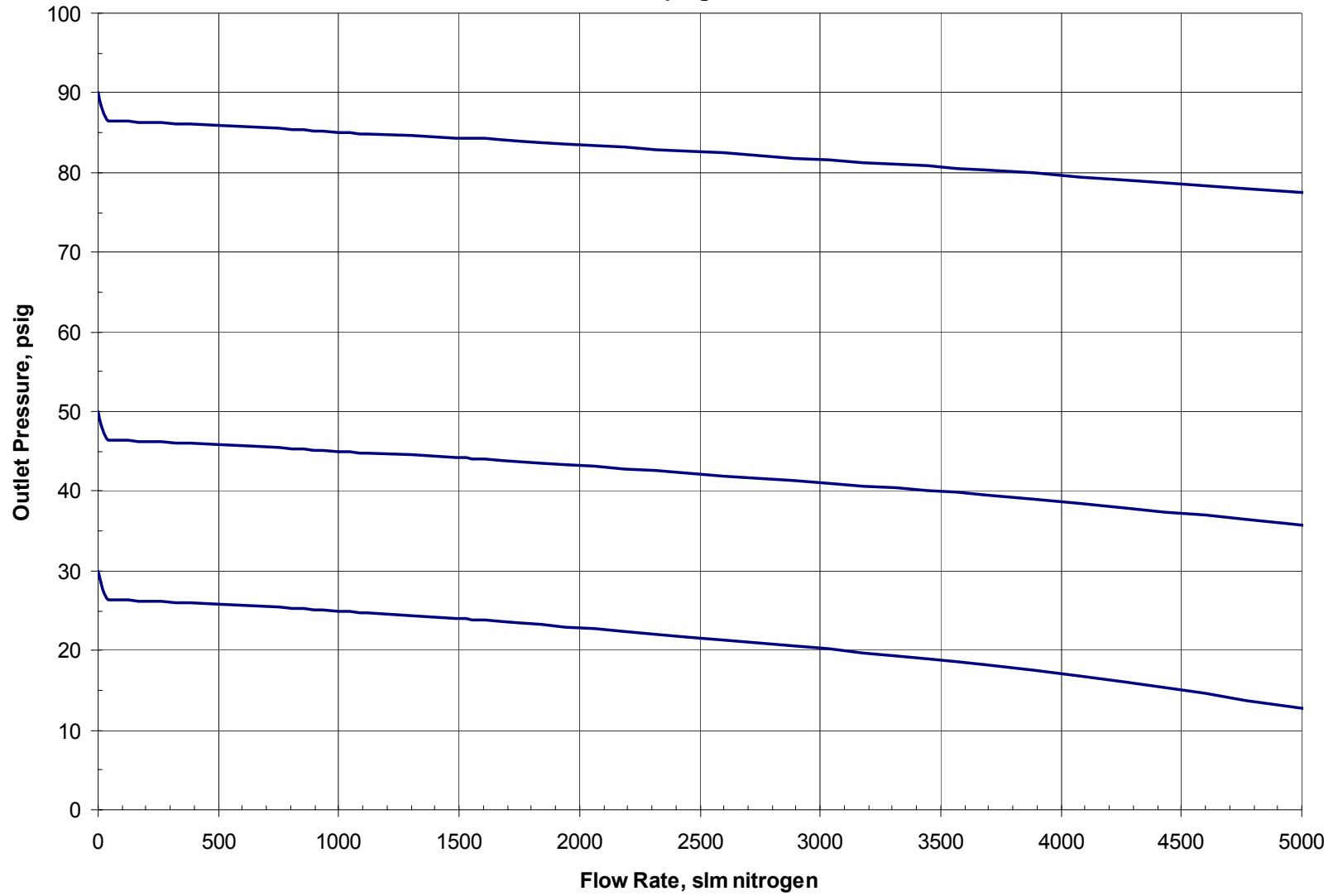
**AP9030S 2PW FV16 FV16**  
Flow Curve at 600 psig Inlet Pressure



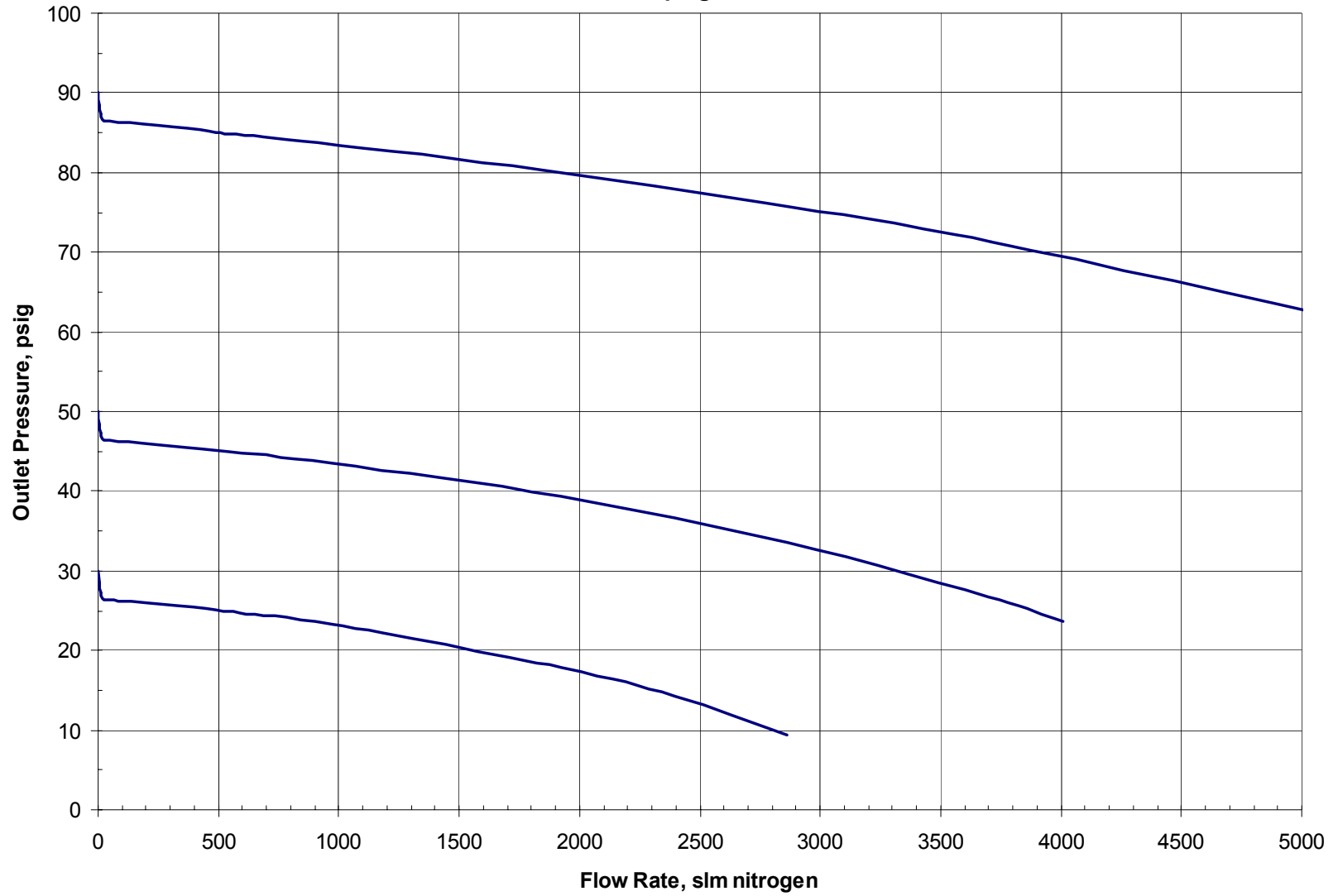
**AP9110S 2PW FV12 FV12**  
Flow Curve at 300 psig Inlet Pressure



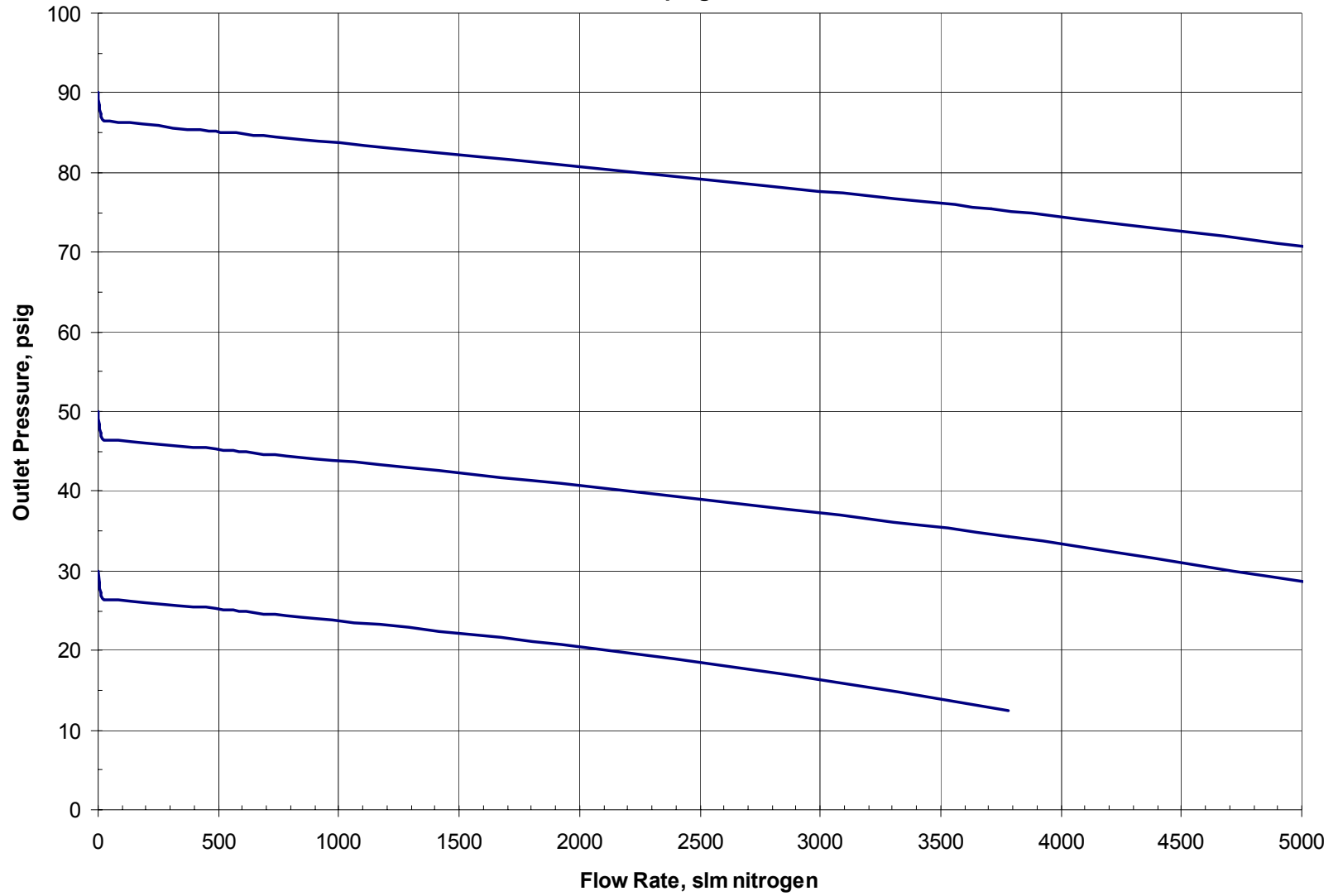
**AP9110S 2PW FV16 FV16**  
Flow Curve at 300 psig Inlet Pressure



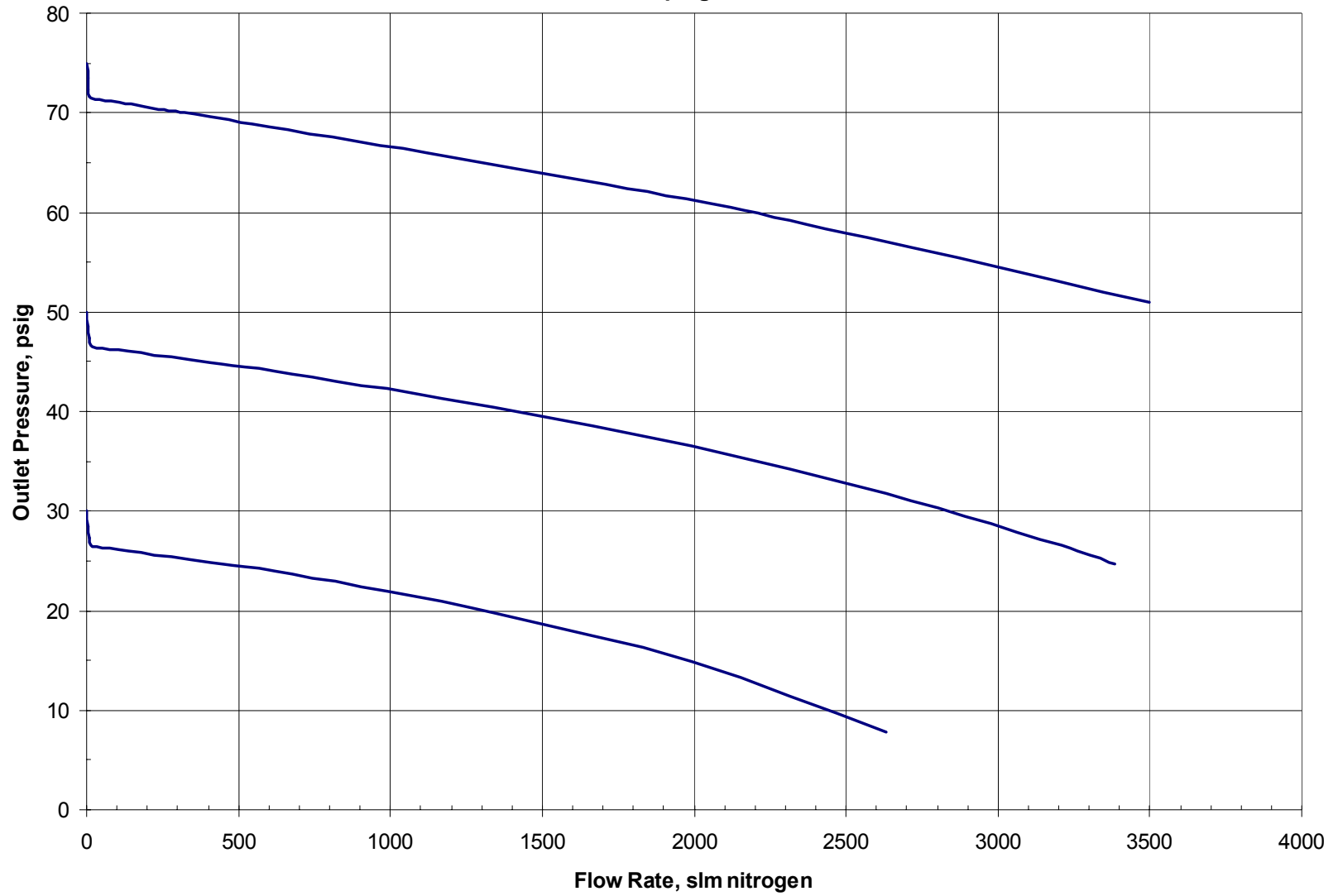
**AP9110S 2PW FV12 FV12**  
Flow Curve at 150 psig Inlet Pressure



**AP9110S 2PW FV16 FV16**  
Flow Curve at 150 psig Inlet Pressure



**AP9110S 2PW FV12 FV12**  
Flow Curve at 100 psig Inlet Pressure



**AP9110S 2PW FV16 FV16**  
Flow Curve at 100 psig Inlet Pressure

