

PALMER-BOWLUS FLUME GENERAL FLOW RANGES

<u>Conversions:</u>		
CFS x 448.8 = GPM	MGD x 694.4 = GPM	MGD x 1.55 = CFS
GPM ÷ 448.8 = CFS	GPM ÷ 694.4 = MGD	CFS x 0.646 = MGD

Palmer-Bowlus	Flow Range	Equations H = Head in Feet Q = CFS
4"	2 – 80 *(55)	$Q = 1.73 \times (H + .00588)^{1.9573} **$
6"	3 – 230 (130)	$Q = 2.071 \times (H + .005421)^{1.9025}$
8"	4 – 470 (310)	$Q = 2.537 \times (H + .01456)^{1.9724}$
10"	5 – 825 (500)	$Q = 2.843 \times (H + .01610)^{1.9530}$
12"	10 – 1,300 (750)	$Q = 3.142 \times (H + .017)^{1.9362}$
15"	15 – 2,290 (1,385)	$Q = 3.574 \times (H + .01682)^{1.9062}$
18"	25 – 3,190 (2,070)	$Q = 3.988 \times (H + .01875)^{1.8977}$
21"	30 – 4,690 (3,160)	$Q = 4.223 \times (H + .039)^{1.9619}$
24"	45 – 6,550 (4,250)	$Q = 4.574 \times (H + .0408)^{1.9497}$

* When the downstream channel or pipe is larger than flume, you could experience a progressive over-discharge. The number in parentheses is the conservative cut-off point to maintain high accuracy.

**Short power equation (a) is off by 3 to 5% at both ends of flow range. See polynomial (b) on Palmer-Bowlus Equations page for best overall curve fitting.