Spray Coverage

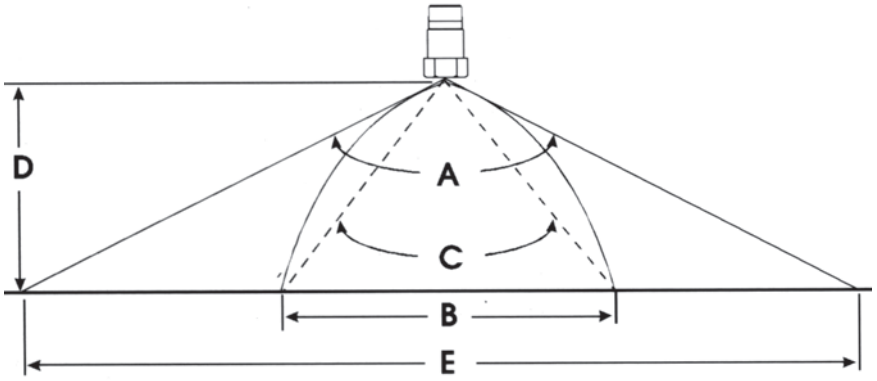
SPRAY ANGLE TERMS
Four terms are commonly used to describe spray coverage:

Spray Angle:
(A) The included angle of the spray as measured close to the nozzle orifice. Since the droplets are immediately acted upon by external forces (gravity and moving gases, for example), this measurement is useful only for determining spray coverage close to the nozzle. The spray angles listed for nozzles in this catalog are angles at the nozzle, measured at the nozzle's design pressure.
Actual Spray Coverage:
(B) The actual coverage at a specified distance **(D)** from the nozzle.
Effective Spray Angle:
(C) The angle calculated from the actual coverage **(B)** at a distance **(D)**.
Theoretical Spray Coverage:
(E) The coverage at distance **(D)** if the spray moved in a straight line.

EXAMPLES:
Problem: To achieve a 200mm diameter spray coverage from a nozzle mounted 150mm from the target, what spray angle would be required?
Solution: 70° Spray Angle

Problem: How far from the target should a nozzle with a 110° spray angle be mounted in order to achieve a 550mm diameter spray?
Solution: Approximately 200mm. (Actual coverage will be less than theoretical coverage listed in the table.)

NOTE: For applications where coverage is critical, contact BETE Applications Engineering using the Applications Intake form on page 128.



THEORETICAL SPRAY COVERAGE (E) IN MILLIMETERS

Included Spray Angle (A)	Distance From Nozzle Orifice (D) (mm)									
	50	75	100	150	200	300	400	600	800	1000
10°	9	13	17	26	35	52	70	105	140	175
20°	18	26	35	53	71	106	141	212	282	353
30°	27	40	54	80	107	161	214	322	429	536
40°	36	55	73	109	146	218	291	437	582	728
50°	47	70	93	140	187	280	373	560	746	933
60°	58	87	115	173	231	346	462	693	924	1155
70°	70	105	140	210	280	420	560	840	1120	1400
80°	84	126	168	252	336	503	671	1007	1343	1678
90°	100	150	200	300	400	600	800	1200	1600	2000
100°	119	179	238	358	477	715	953	1430	1907	2384
110°	143	214	286	428	571	857	1143	1714	2285	
120°	173	260	346	520	693	1039	1386	2078		
130°	214	322	429	643	858	1287	1716			
140°	275	412	549	824	1099	1648	2198			
150°	373	560	746	1120	1493	2239				
170°	1143	1715	2286							

NOTE: Data shown is theoretical and does not take into consideration the effects of gravity, gas flow, or high pressure operation.