MODEL MV MEDIUM VELOCITY DIRECTIONAL SPRAY NOZZLES

Features:

- Non-automatic fixed pattern.
- Solid cone discharge.
- Seven orifice sizes.
- Eight discharge angles.

65º Spray Nozzle



80º Spray Nozzle



95º Spray Nozzle



Product description:

The Reliable Model MV Medium Velocity Water Spray Nozzles are cULus Listed non-automatic, open nozzles, designed for directional spray applications in fixed fire protection systems. The nozzle has an internal deflector that discharges water in a directional cone shaped pattern and produces a small droplet size.

The nozzles are designed to apply water to exposed vertical, horizontal, curved and irregular shaped surfaces. The MV nozzle is available in several combinations of orifice size and spray angles (as shown in Table A), and is commonly used in deluge systems for special hazard fire protection applications.

Model MV nozzles are available in unfinished are cULus Listed as corrosion resistant when ordered with ENT finish. Optional blow-off plugs can be used to prevent foreign materials from entering the water way of the nozzle. Blow-off plugs have an identification mark with respect to the K-factor.

110º Spray Nozzle



125º Spray Nozzle



140º Spray Nozzle



160º Spray Nozzle



180º Spray Nozzle



Table A - Model MV Summary.

Model	Material	Finish	K factor	Orifice Diameter	Nozzle angle
MV	Brass	Brass (unfinished) ENT	17 l/min/bar$^{1/2}$ 26 l/min/bar$^{1/2}$ 33 l/min/bar$^{1/2}$ 43 l/min/bar$^{1/2}$ 59 l/min/bar$^{1/2}$ 80 l/min/bar$^{1/2}$ 104 l/min/bar$^{1/2}$	5,13 mm 6,35 mm 7,16 mm 8,26 mm 9,65 mm 11,32 mm 12,78 mm	65º 80º 95º 110º 125º 140º 160º 180º

Note: each nozzle size (k-factor) is available in all nozzle deflector angles.

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Model MV Medium Velocity Water Spray Nozzle

Technical Specifications:
Style: Open Nozzle.
Threads: 1/2" NPT or ISO 7-1 R1/2.
Max. Working Pressure: 12 bar (175psi).

Nominal K-factor (l/min/bar$^{1/2}$): 17, 26, 33, 43, 59, 80 y 104.

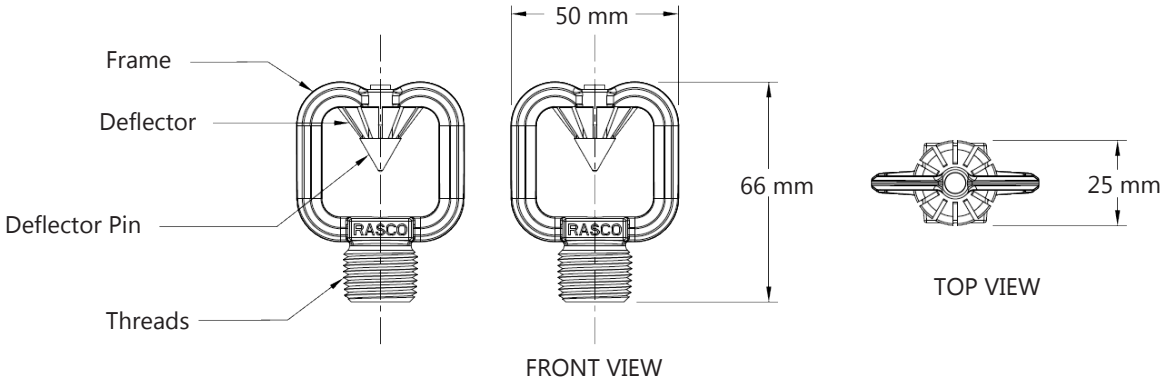
Nozzle angle: 65°, 80°, 95°, 110°, 125°, 140°, 160° y 180°.



Material Specifications:
Frame: Brass.
Deflector Pin: Brass.
Deflector: Brass.
Blow-off Plug: Elastomer.

Finish: Brass (Unfinished), ENT.
Accessories: Blow-off Plug.
Listings & Approvals: UL Listed.

Figure 1 - Model MV Nozzle Components and Dimensions



Notes for Figures 2 through 73 on the following pages:

1. Nozzles may be oriented in any position necessary to protect the hazard.
2. The graphs depict the spray pattern of 8 different nozzles angles when installed at 9 different fixed angles, with 0° fixed angle being straight down, 90° being horizontal and 180° being straing up. It is assumed that the user will select the fixed angle first and the select the appropriate nozzle angle.
3. The spray pattern shown is for discharge pressures between 1,4 bar and 4,1 bar for all nozzle orifice sizes.
4. The transition distance provided is the distance away from the nozzle where the water trajectory transitions from momentum (water pressure driven) to gravity driven. At this point (depending on the orientation of the nozzle), the coverage area may transition away from a circle.
5. Use of the nozzle beyond the transition distance is permitted provided the shape of the coverage area is considered.
6. The spray patterns were obtained from tests performed in still air. Design of a water spray system for outdoor applications must consider the possible effects of wind on the discharge pattern.
7. Obstructions affecting the spray pattern of the nozzle must also be considered.

REF: SBRMV_032023_REV0

Figure 2 - 65º Spray Nozzle set at 0º Fixed Angle

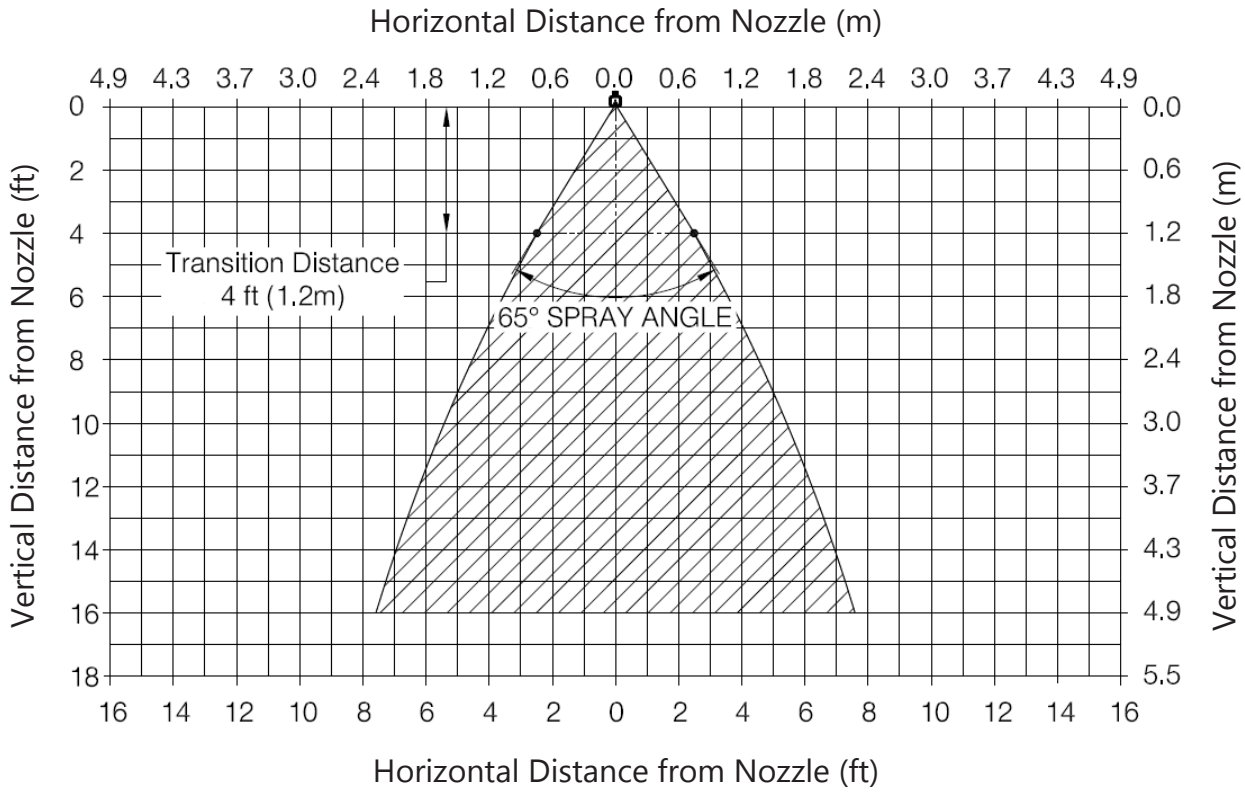


Figure 3 - 80º Spray Nozzle set at 0º Fixed Angle

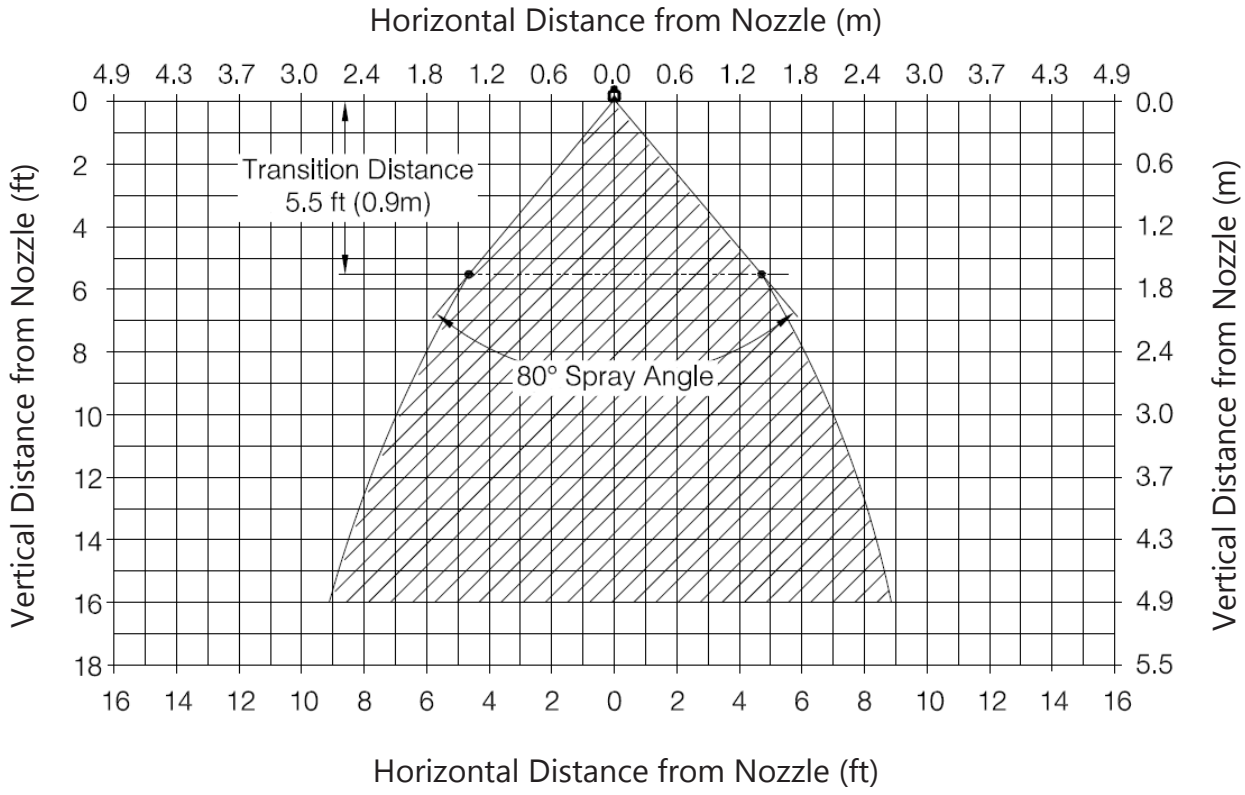


Figure 4 - 95º Spray Nozzle set at 0º Fixed Angle

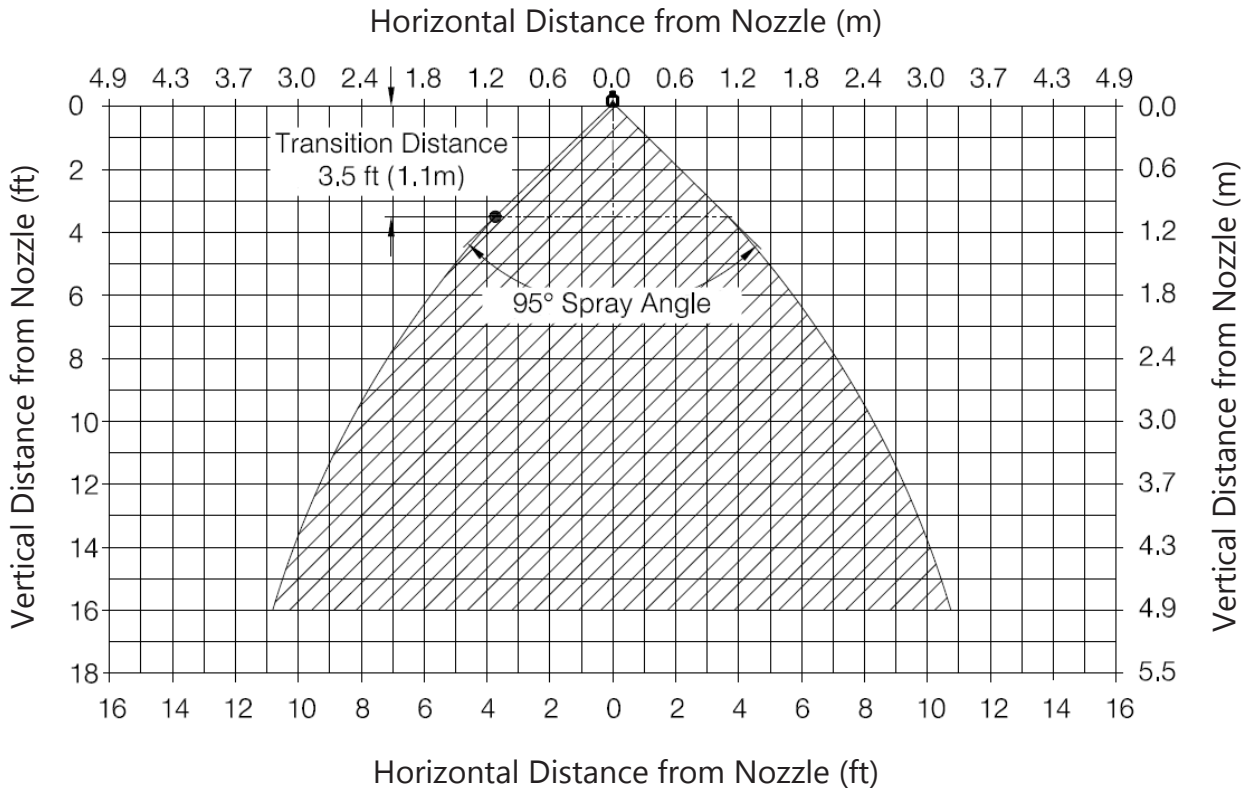


Figure 5 - 110º Spray Nozzle set at 0º Fixed Angle

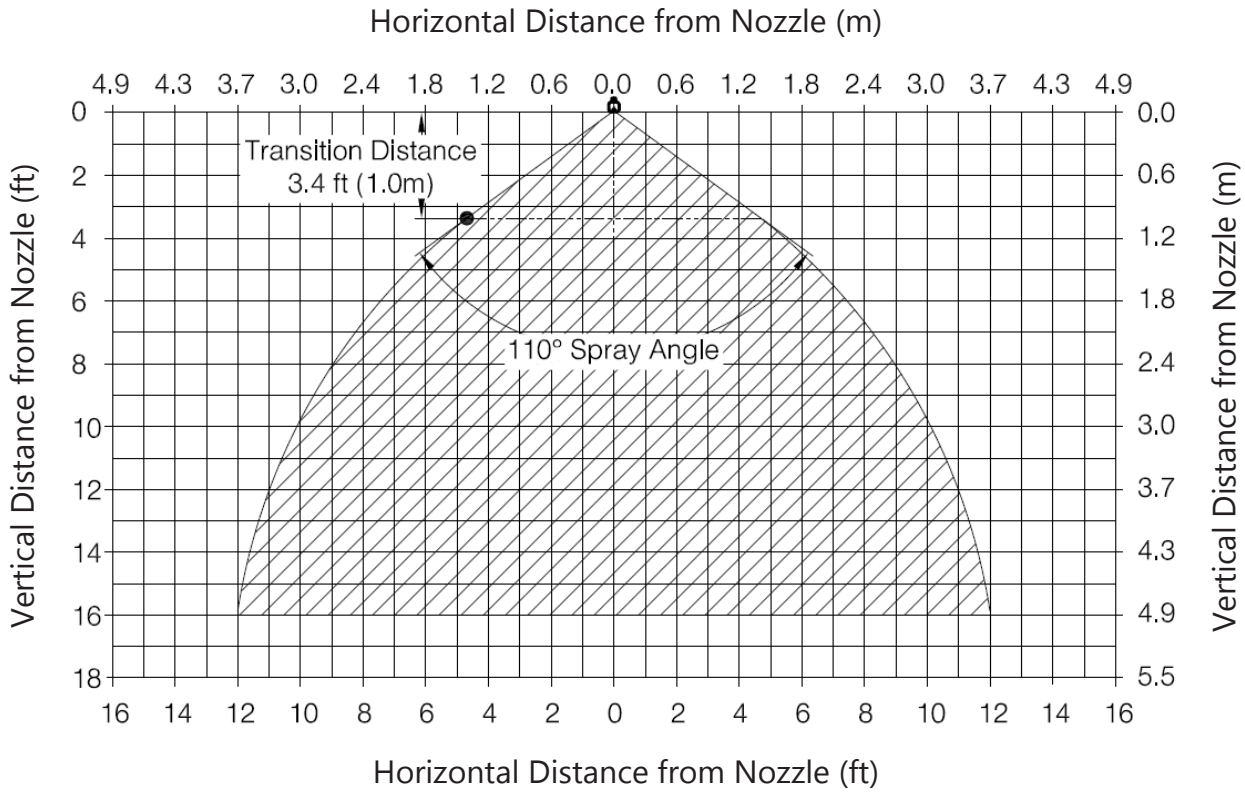


Figure 6 - 125º Spray Nozzle set at 0º Fixed Angle

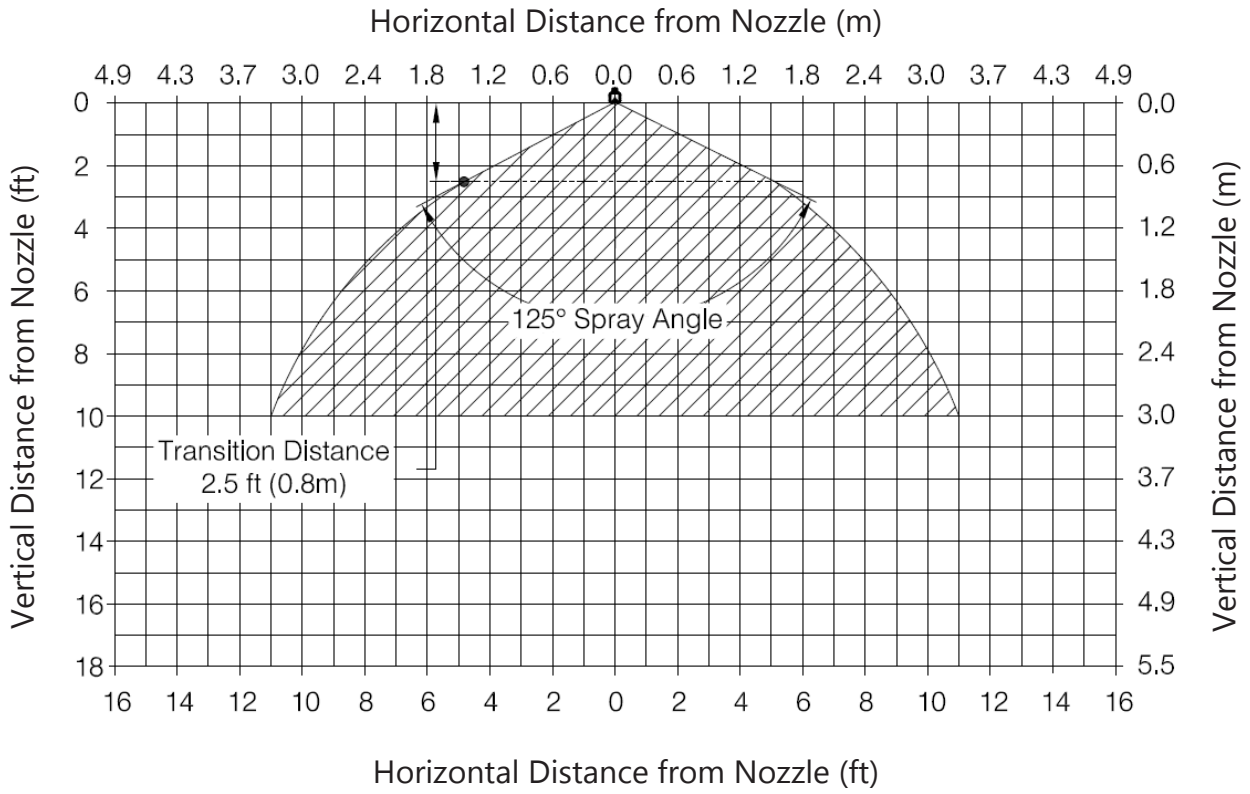


Figure 7 - 140º Spray Nozzle set at 0º Fixed Angle

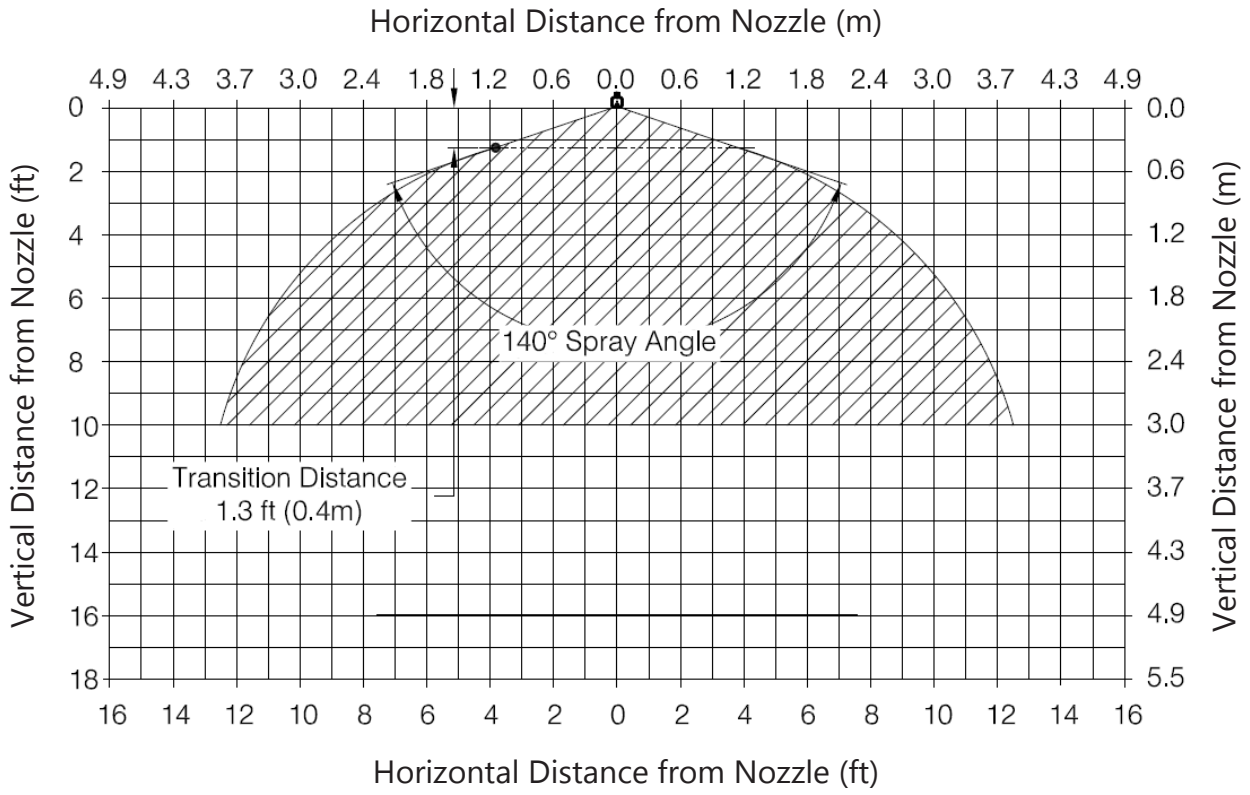


Figure 8 - 160º Spray Nozzle set at 0º Fixed Angle

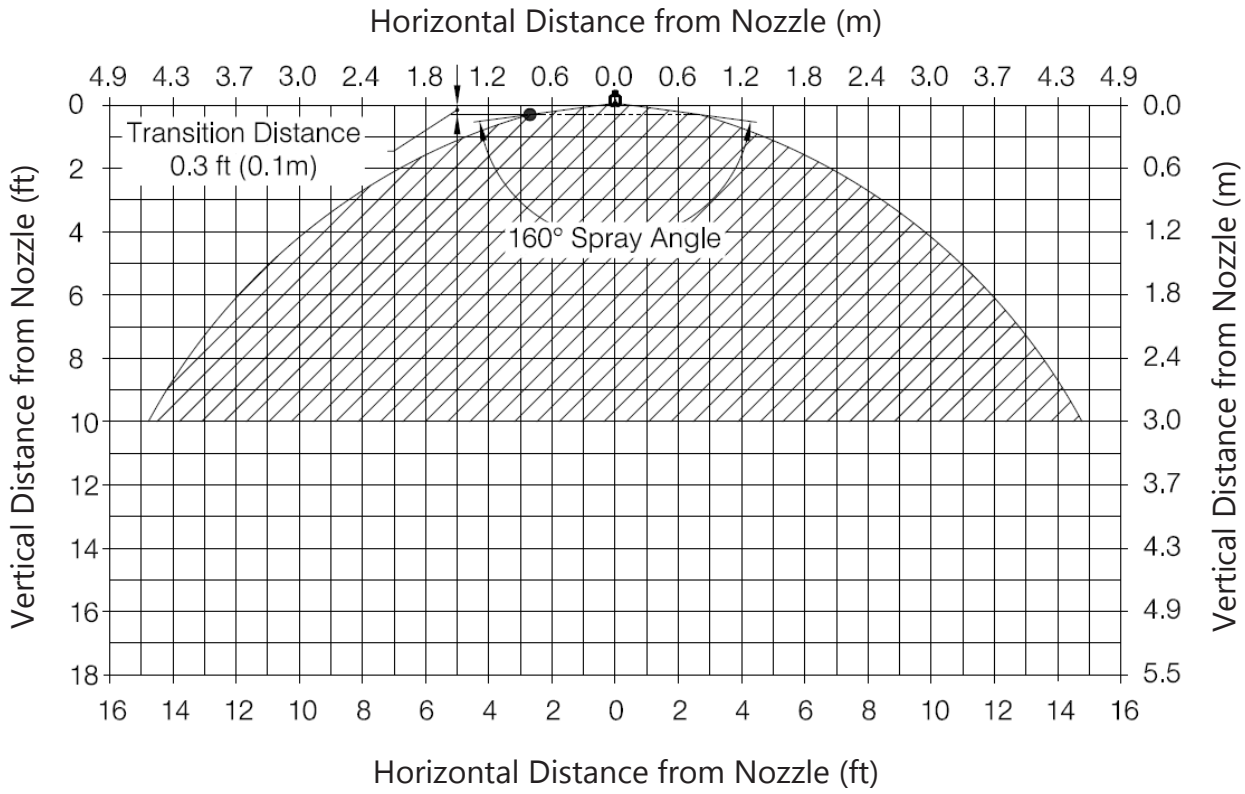


Figure 9 - 180º Spray Nozzle set at 0º Fixed Angle

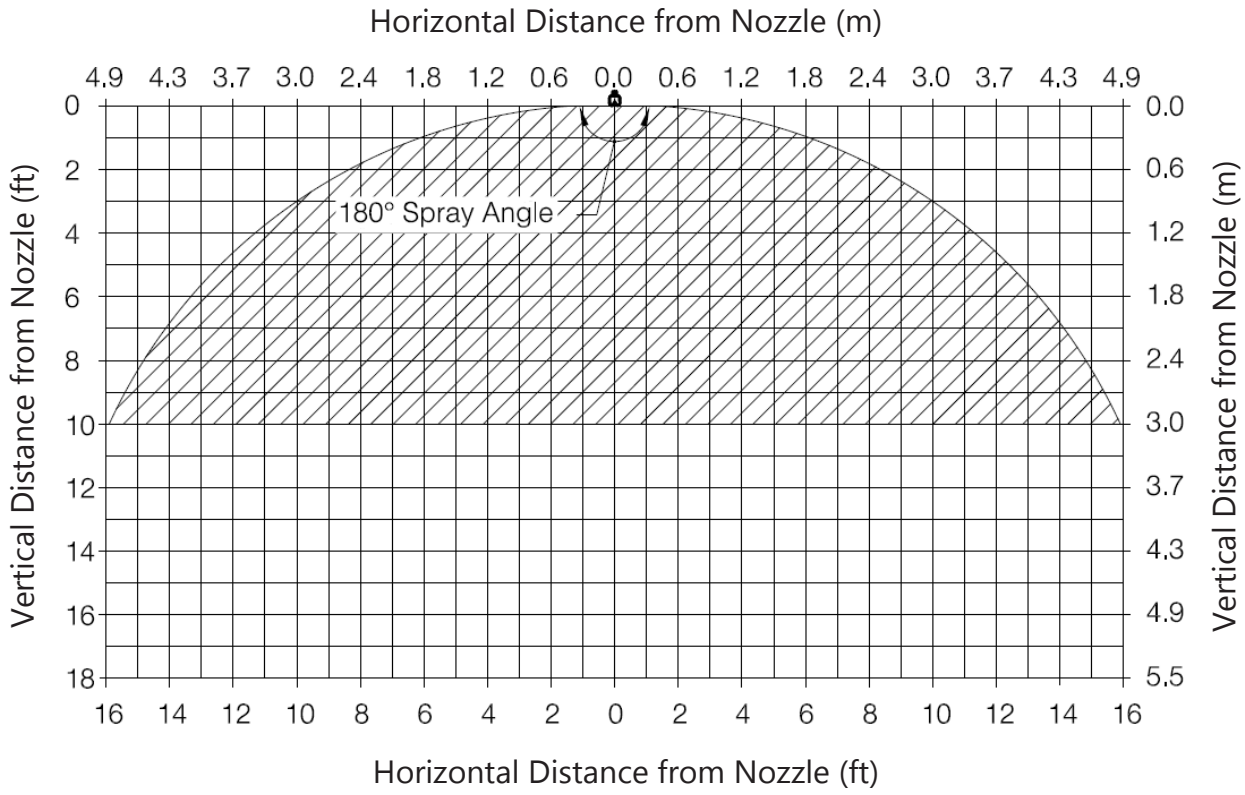


Figure 10 - 65º Spray Nozzle set at 30º Fixed Angle

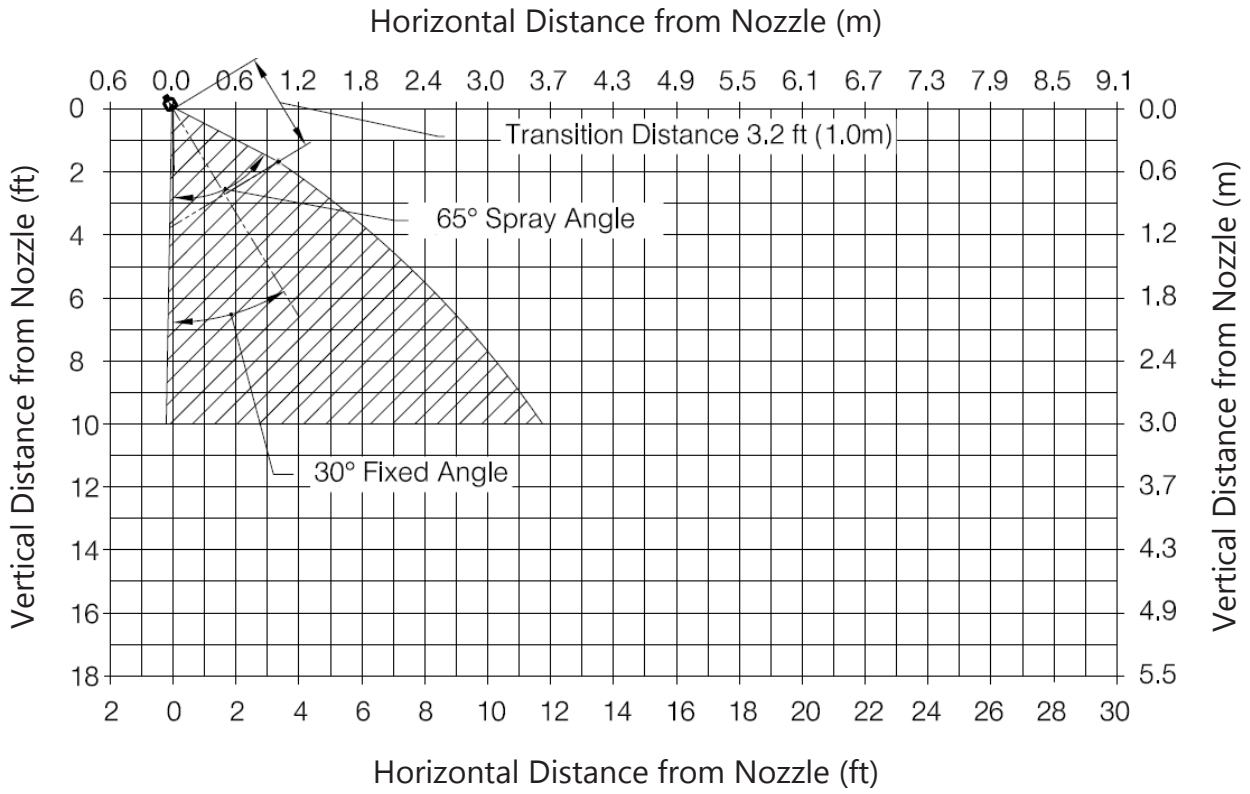


Figure 11 - 80º Spray Nozzle set at 30º Fixed Angle

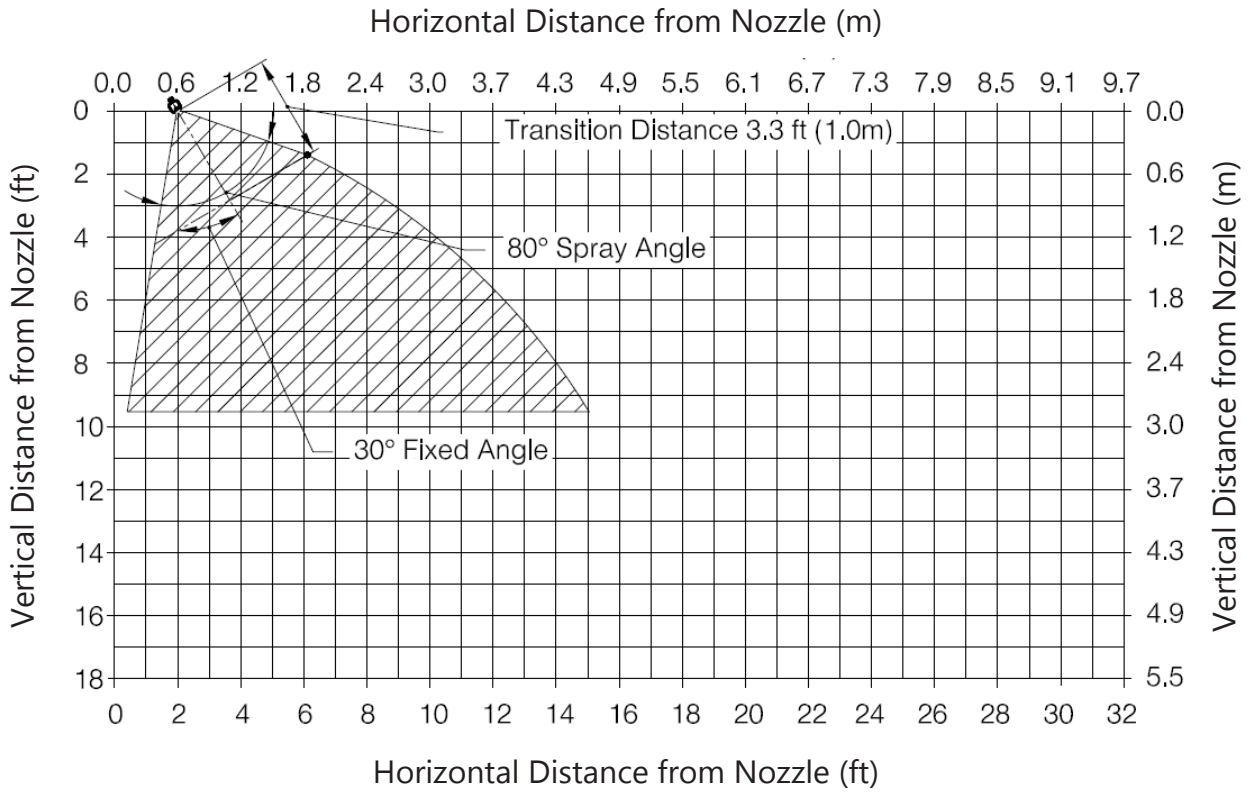


Figure 12 - 95º Spray Nozzle set at 30º Fixed Angle

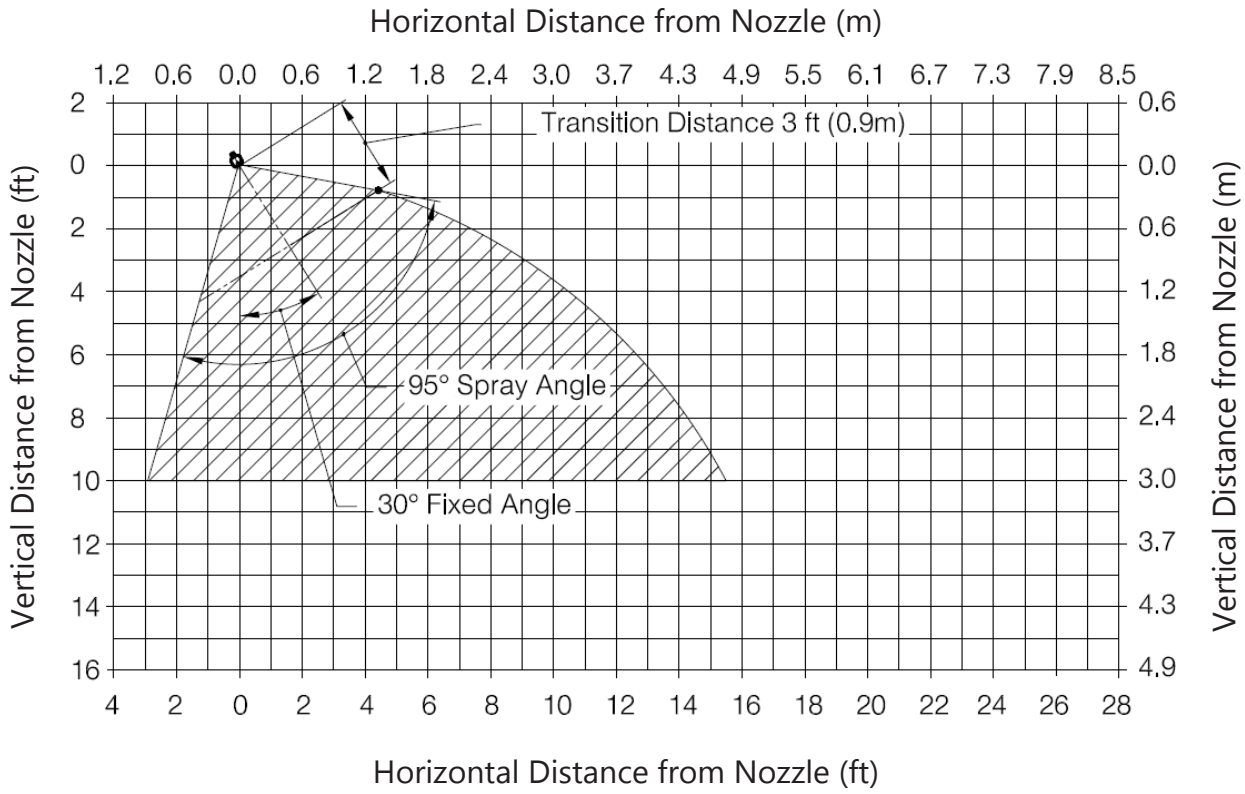


Figure 13 - 110º Spray Nozzle set at 30º Fixed Angle

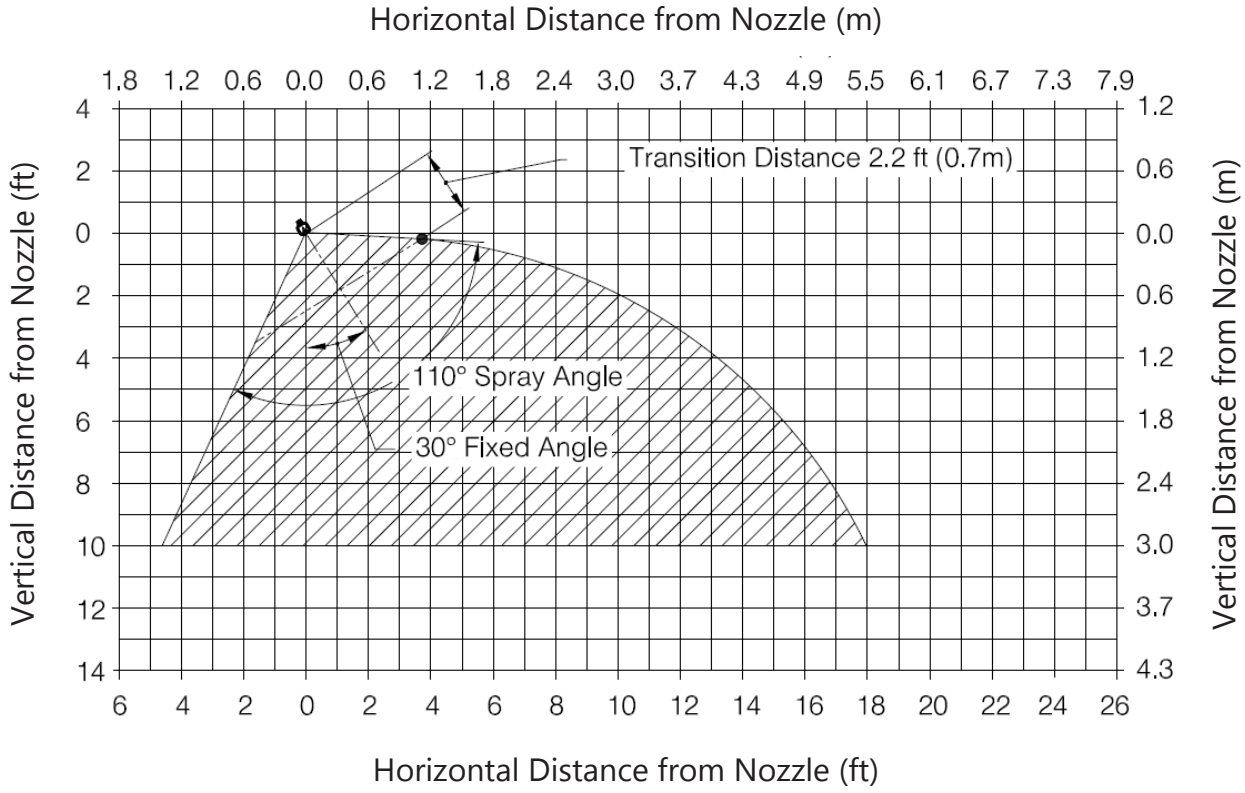


Figure 14 - 125º Spray Nozzle set at 30º Fixed Angle

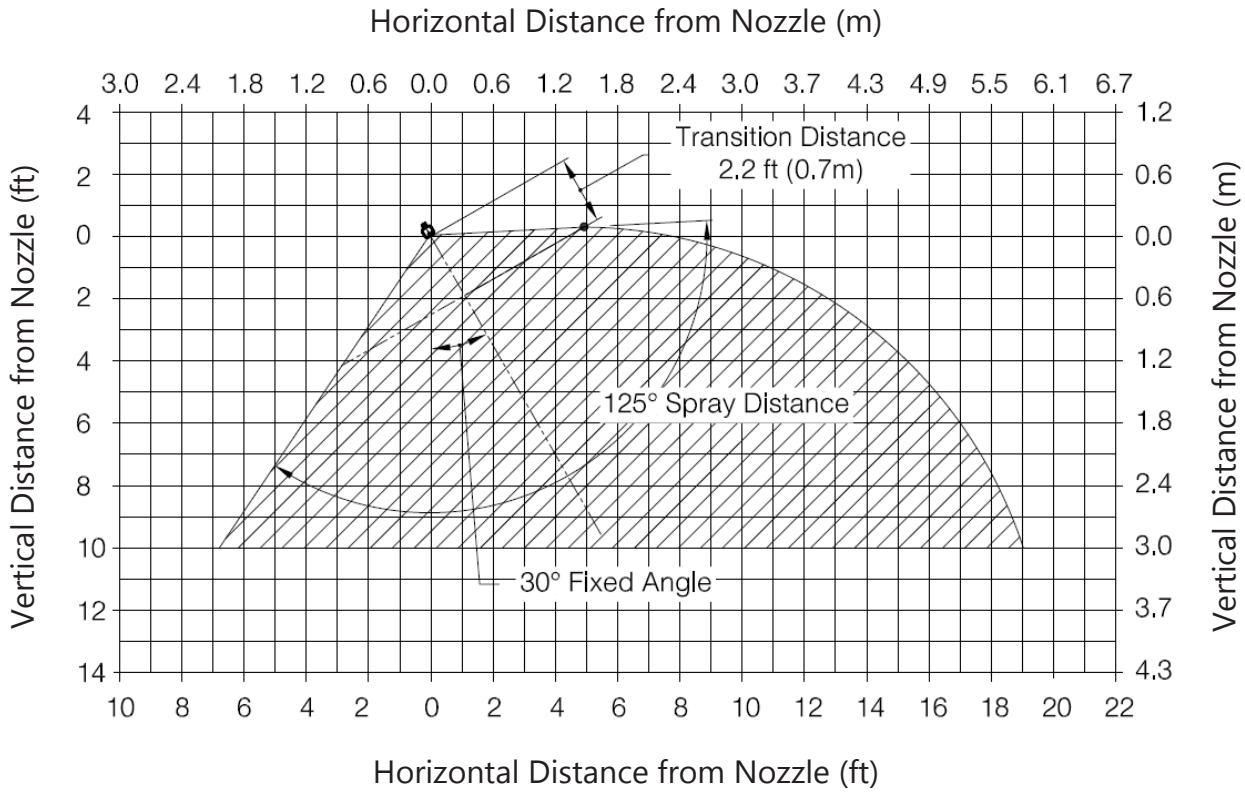


Figure 15 - 140º Spray Nozzle set at 30º Fixed Angle

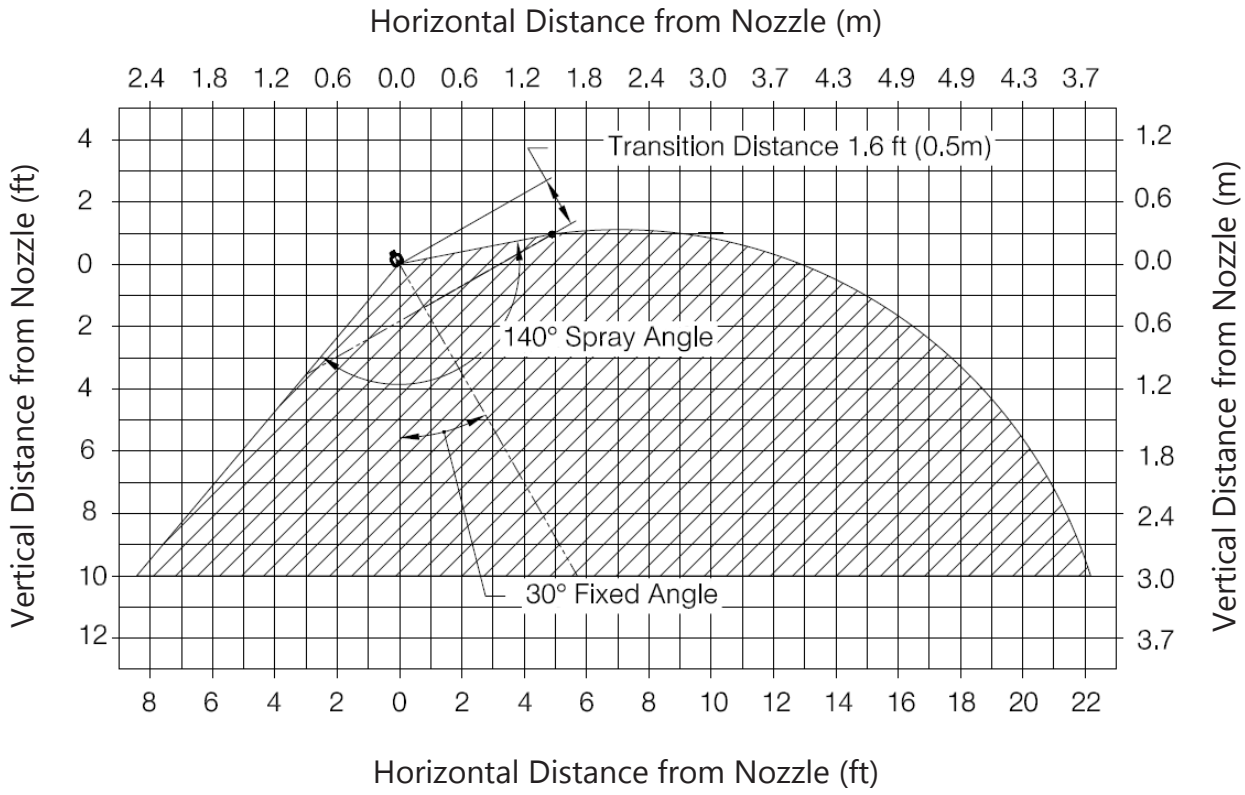


Figure 16 - 160º Spray Nozzle set at 30º Fixed Angle

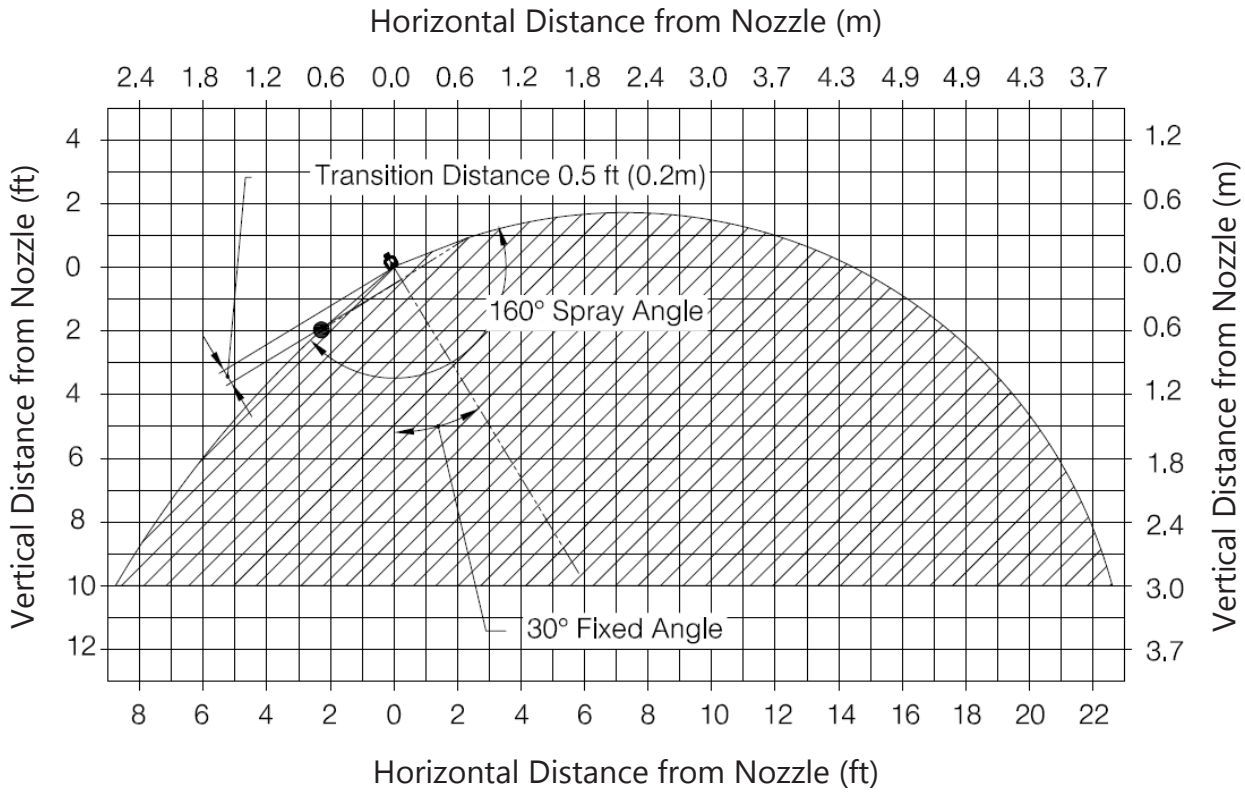


Figure 17 - 180º Spray Nozzle set at 30º Fixed Angle

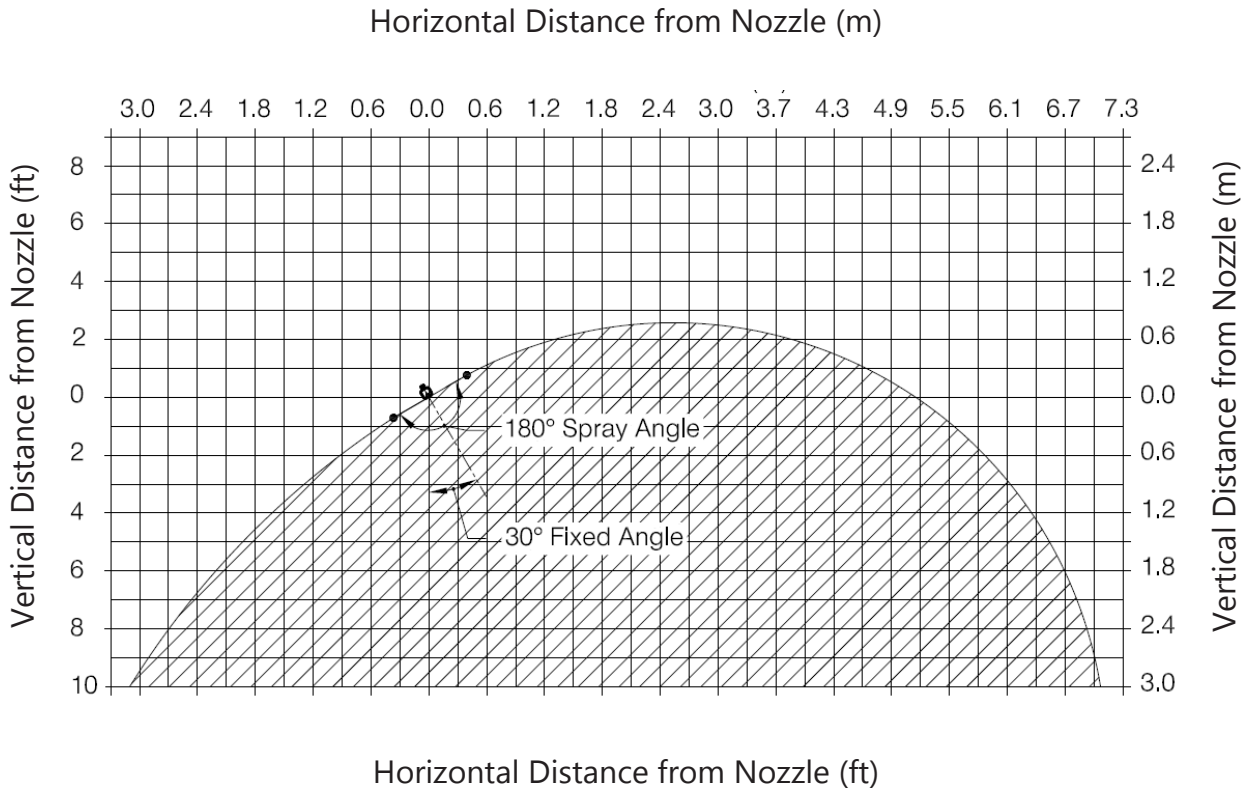


Figure 18 - 65º Spray Nozzle set at 45º Fixed Angle

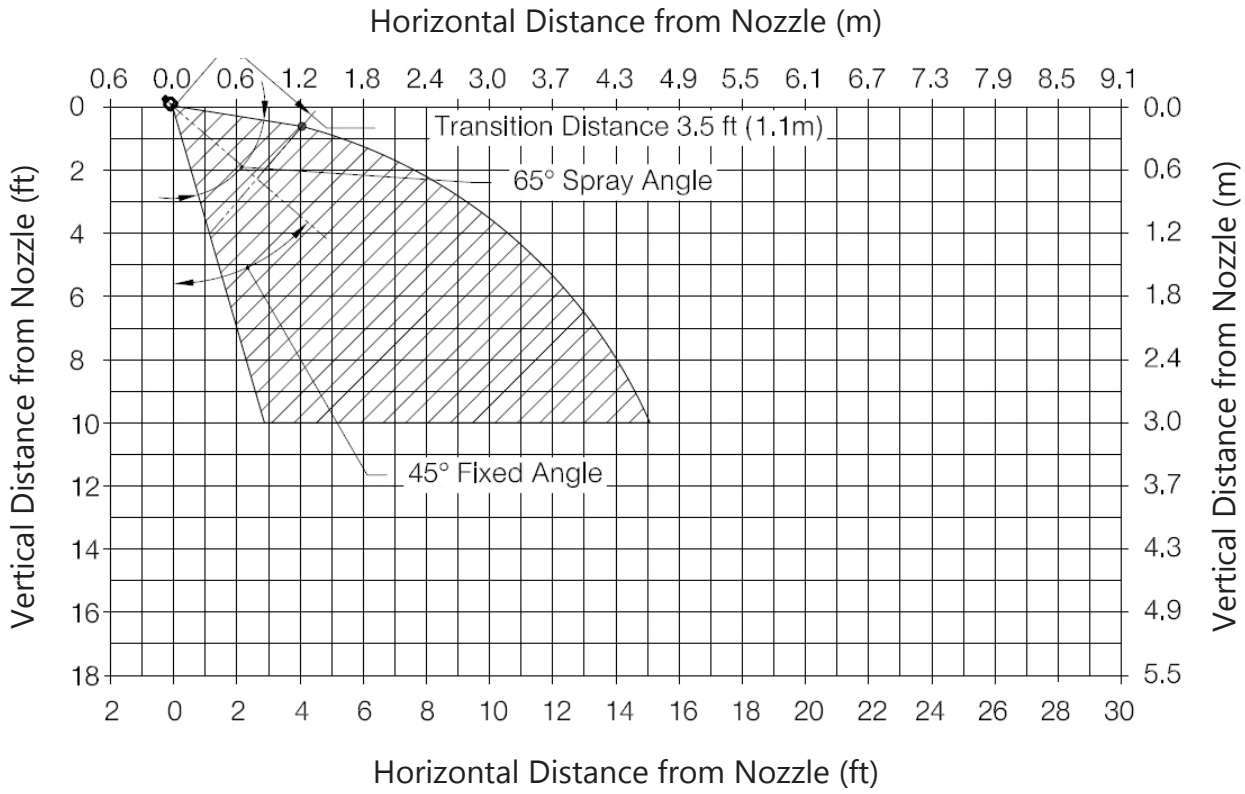


Figure 19 - 80º Spray Nozzle set at 45º Fixed Angle

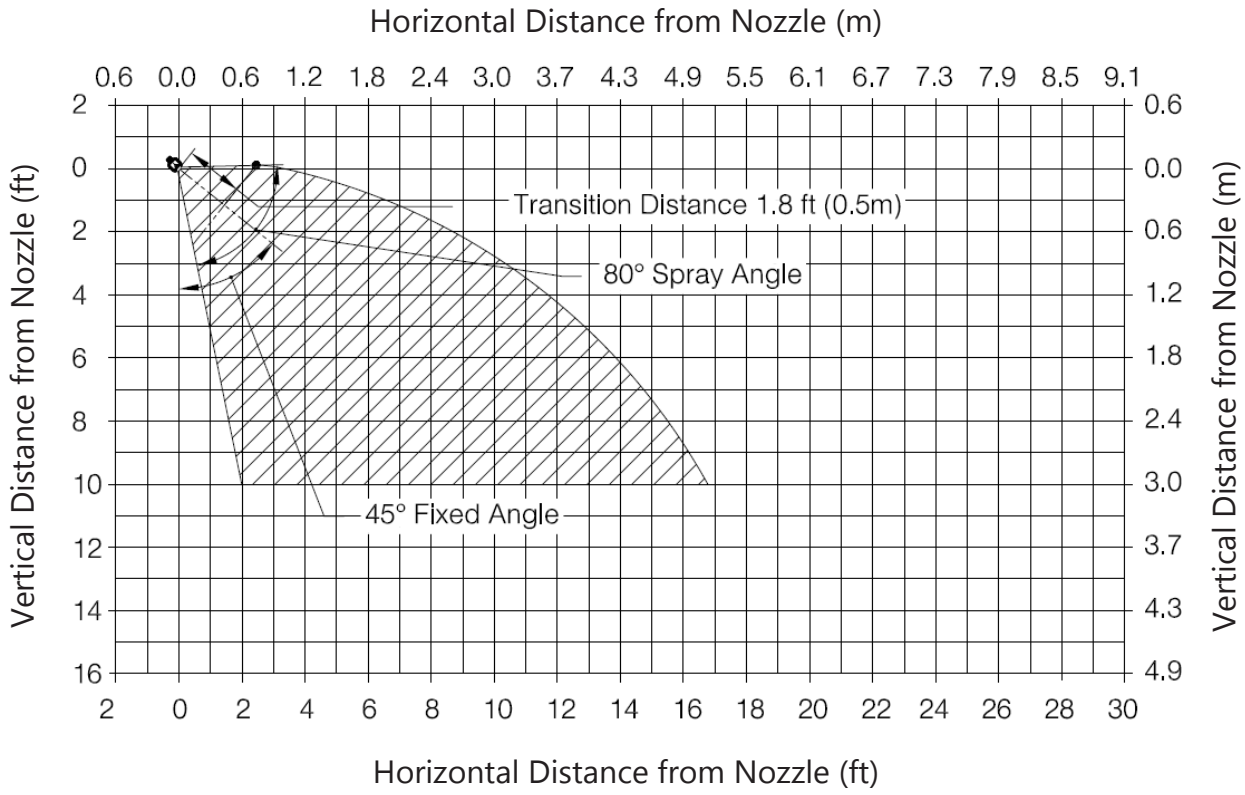


Figure 20 - 95º Spray Nozzle set at 45º Fixed Angle

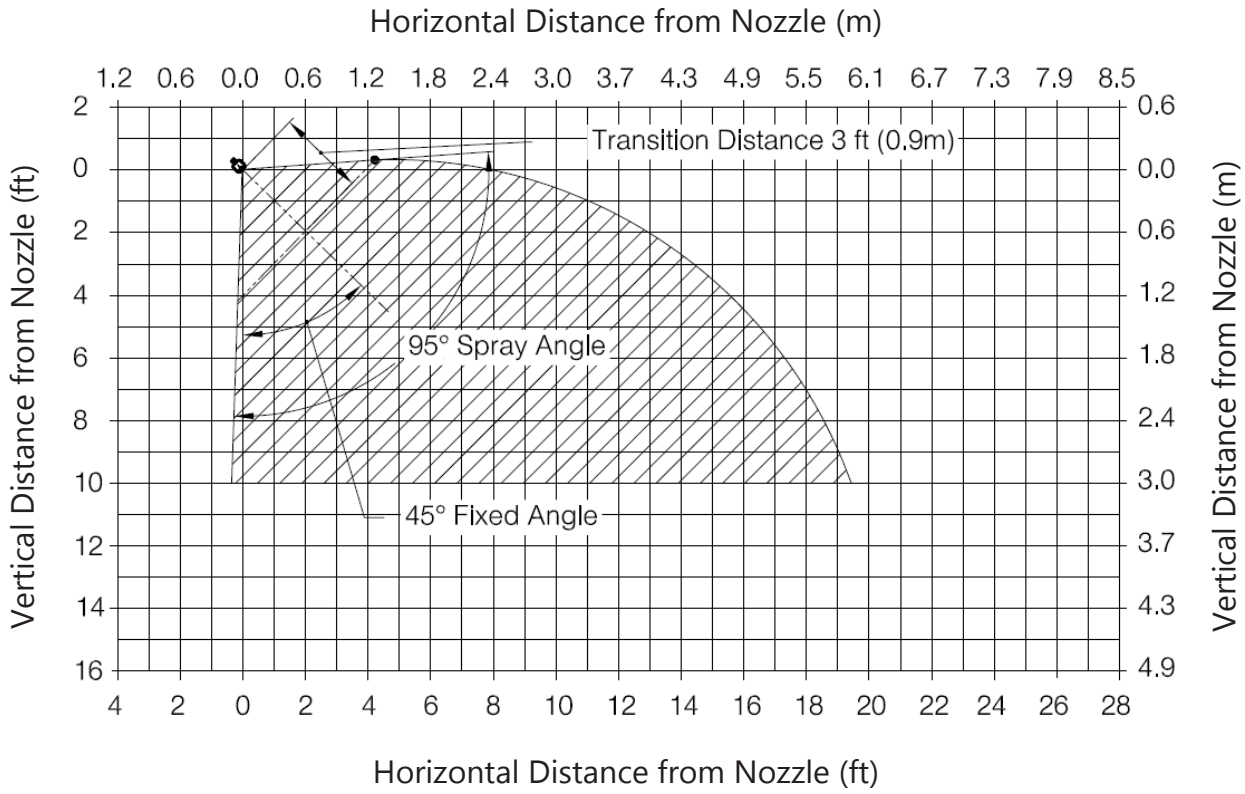


Figure 21 - 110º Spray Nozzle set at 45º Fixed Angle

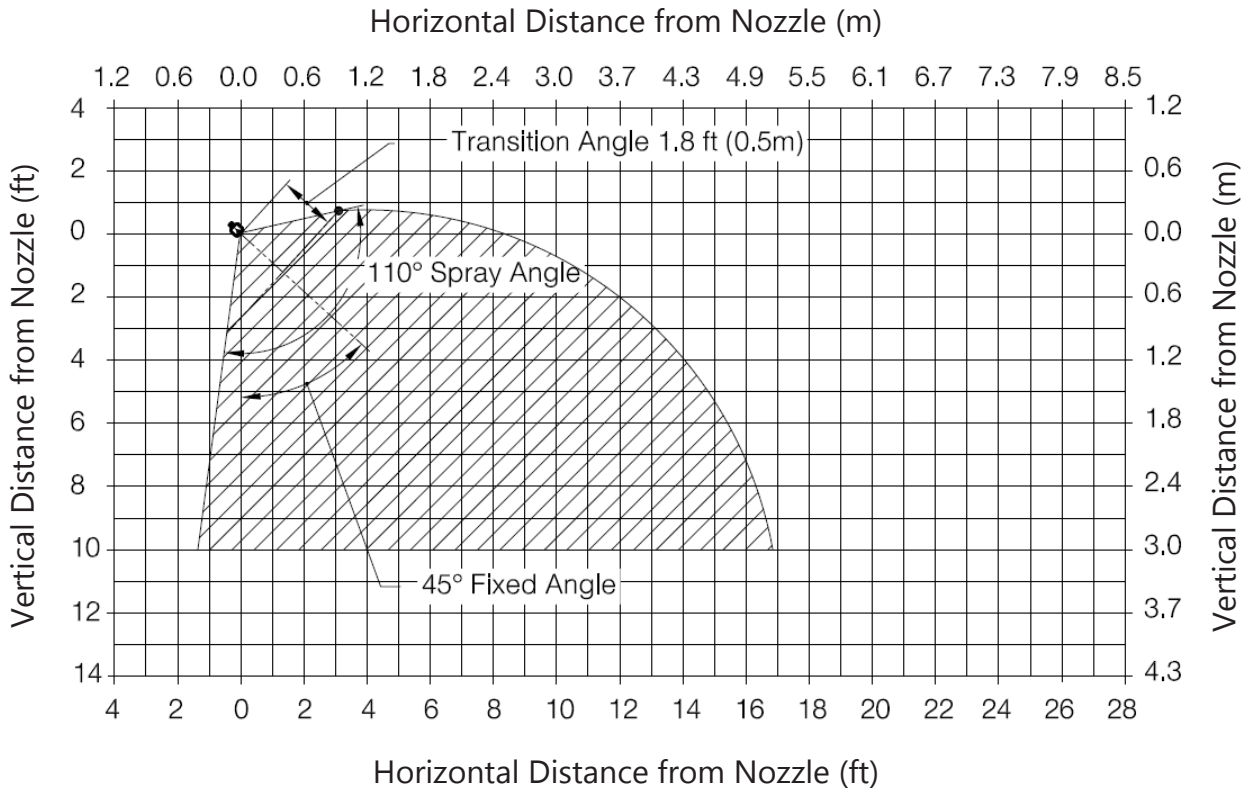


Figure 22 - 125º Spray Nozzle set at 45º Fixed Angle

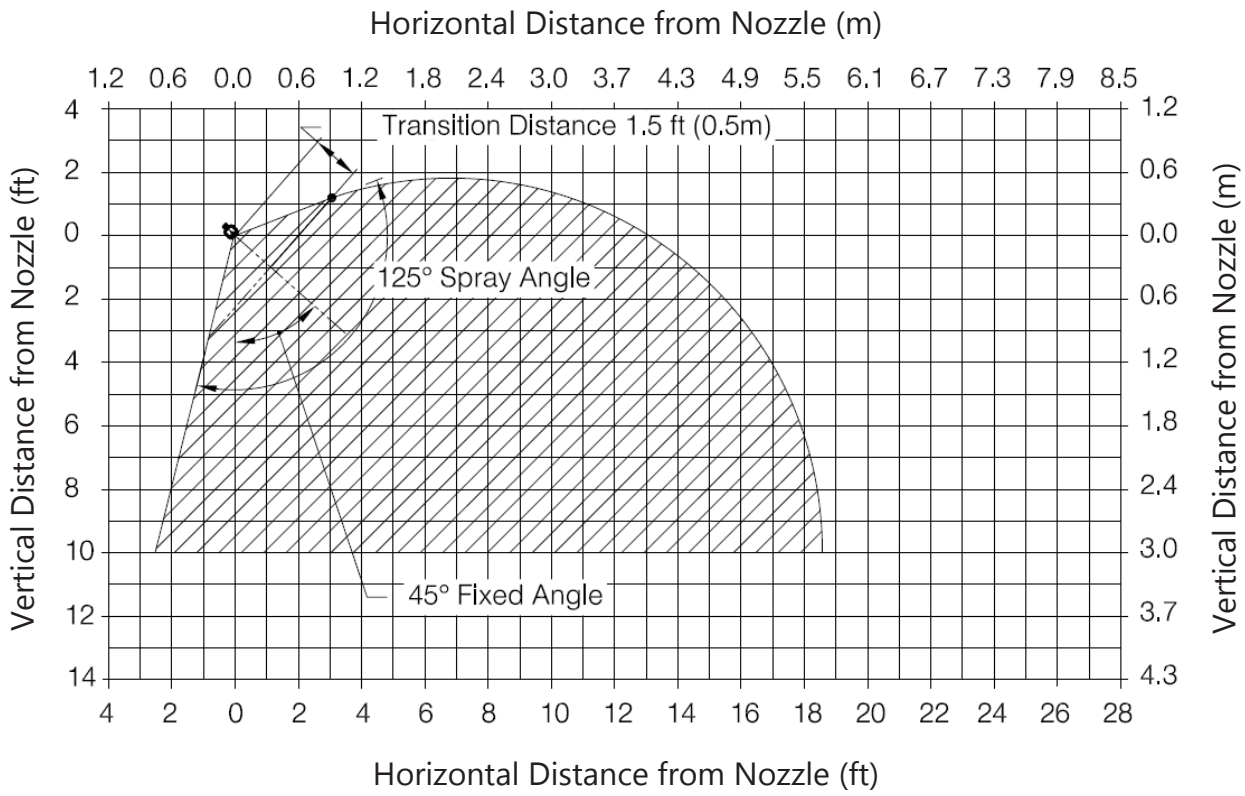


Figure 23 - 140º Spray Nozzle set at 45º Fixed Angle

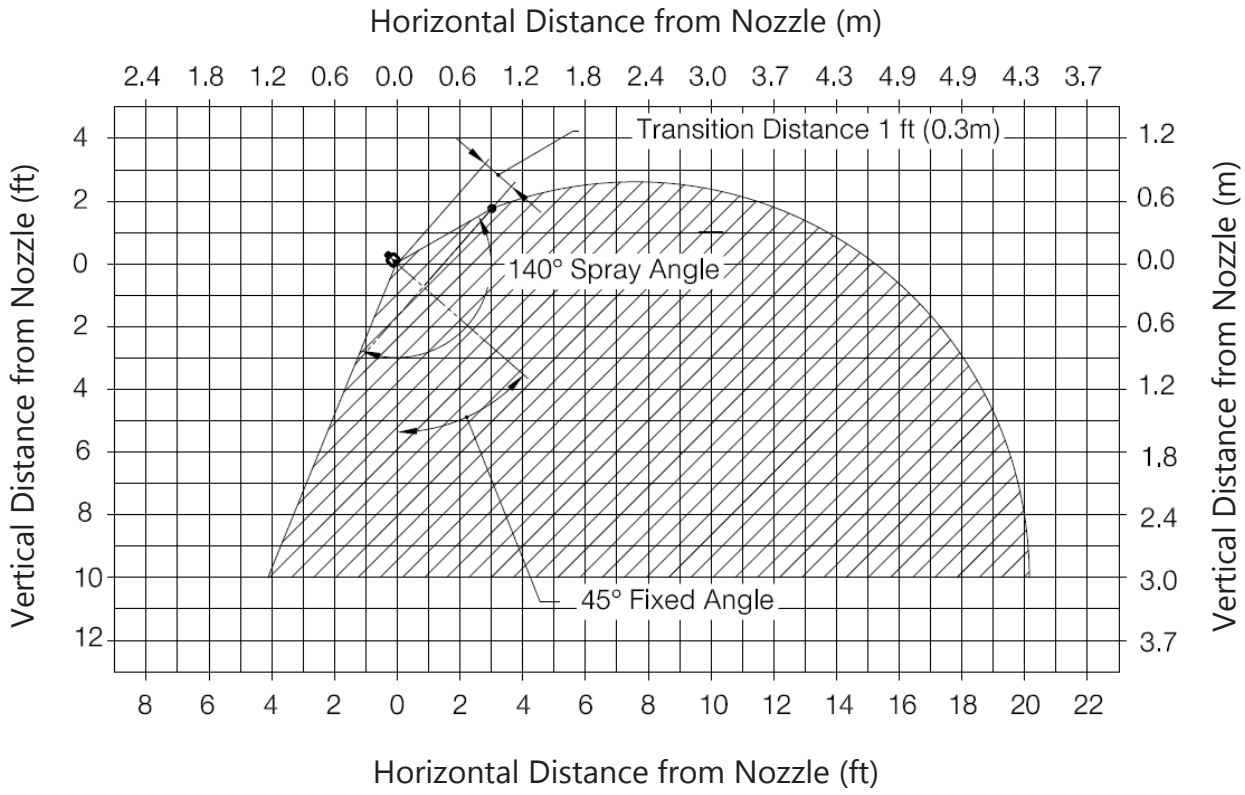


Figure 24 - 160° Spray Nozzle set at 45° Fixed Angle

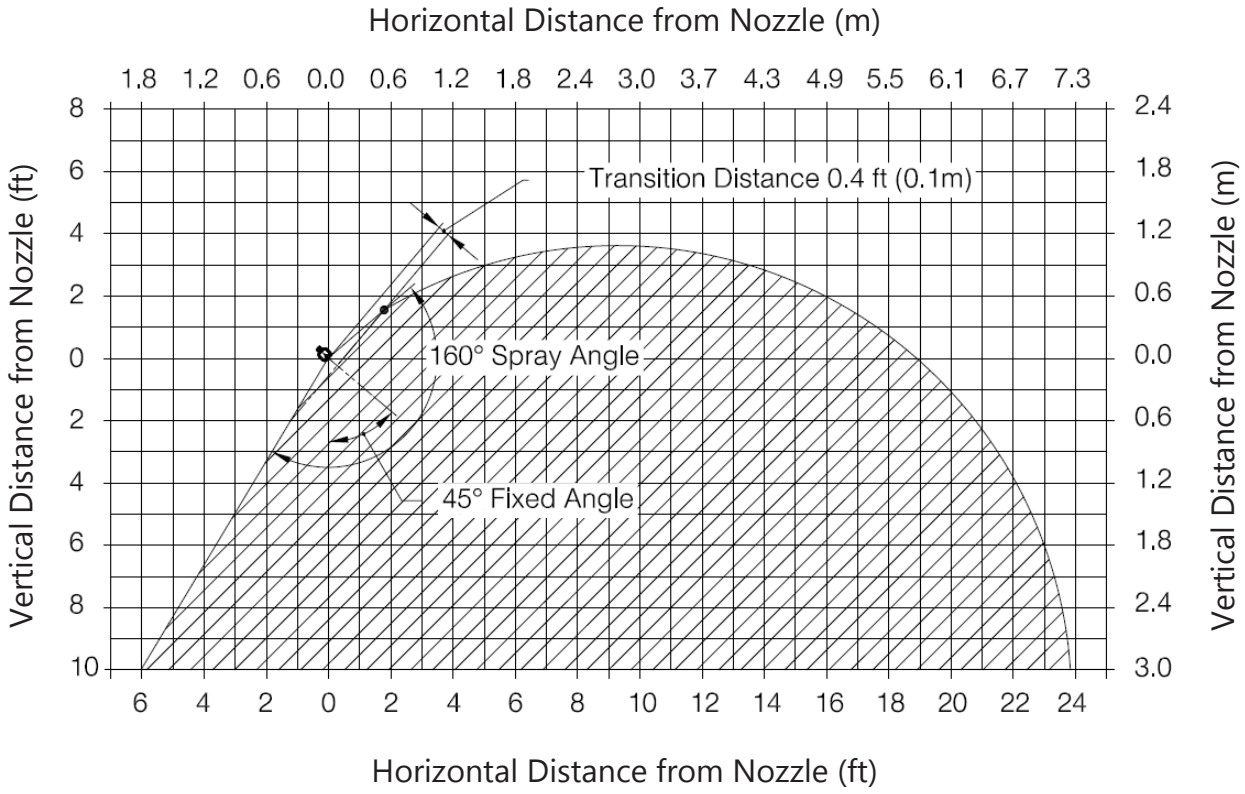


Figure 25 - 180° Spray Nozzle set at 45° Fixed Angle

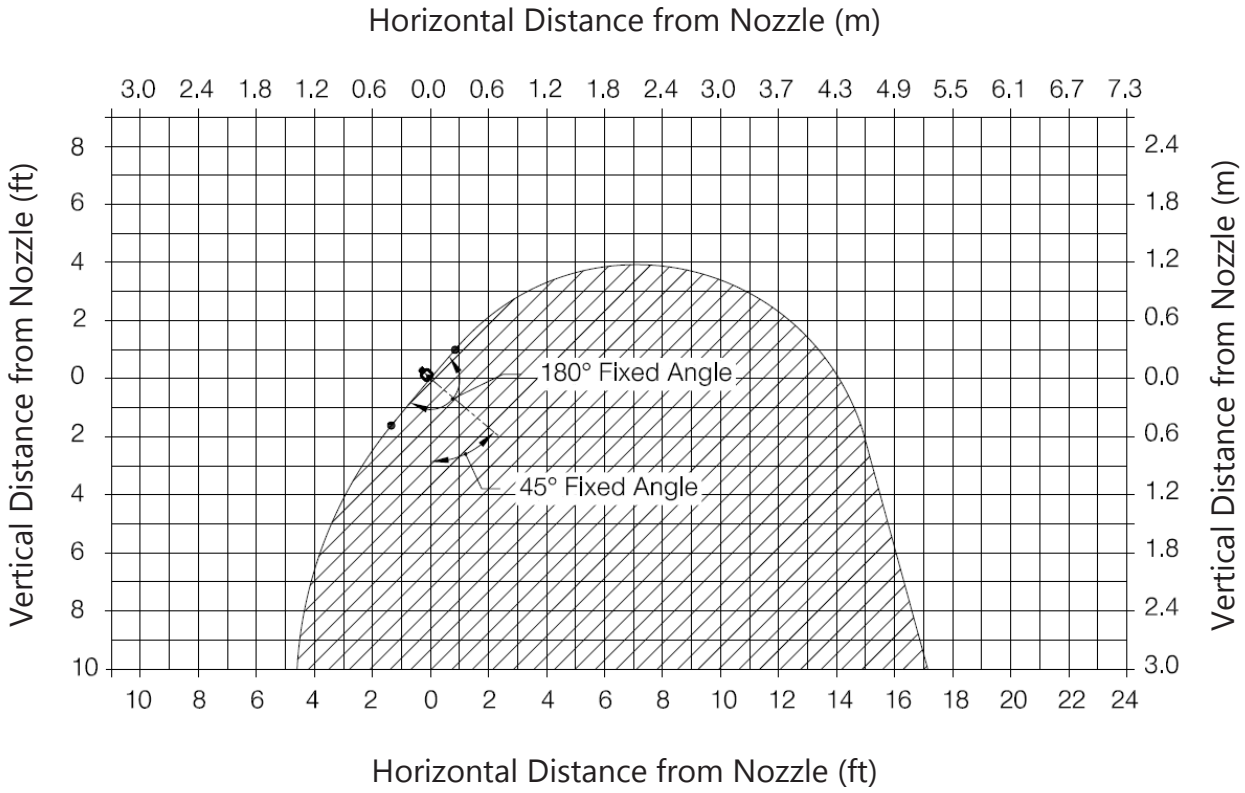


Figure 26 - 65º Spray Nozzle set at 60º Fixed Angle

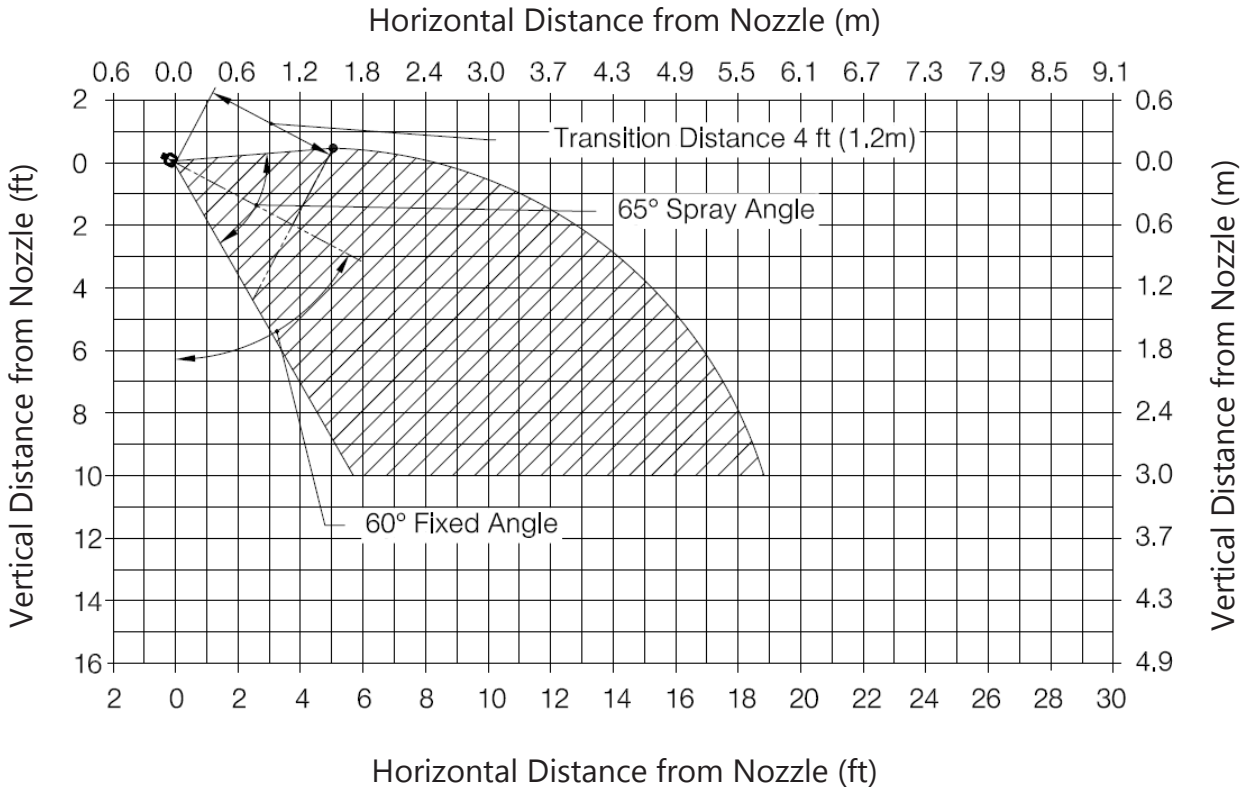


Figure 27 - 80º Spray Nozzle set at 60º Fixed Angle

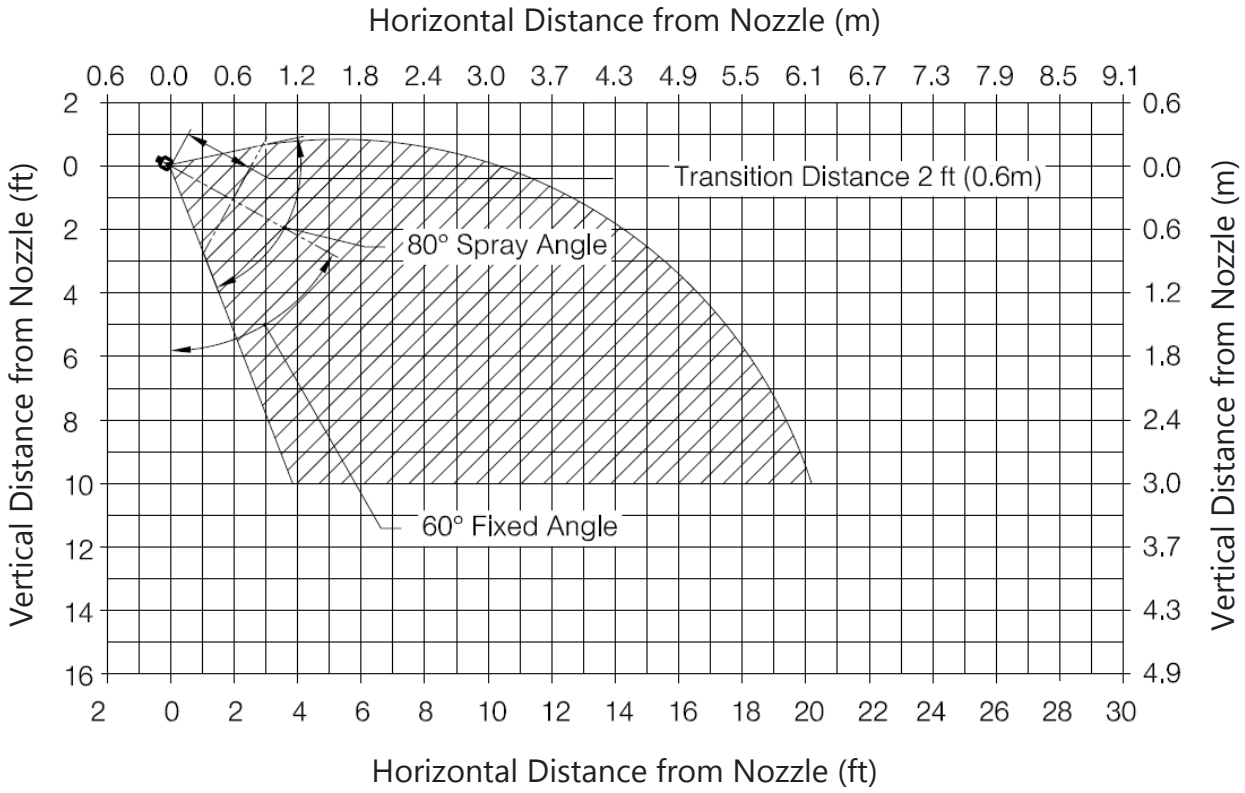


Figure 28 - 95º Spray Nozzle set at 60º Fixed Angle

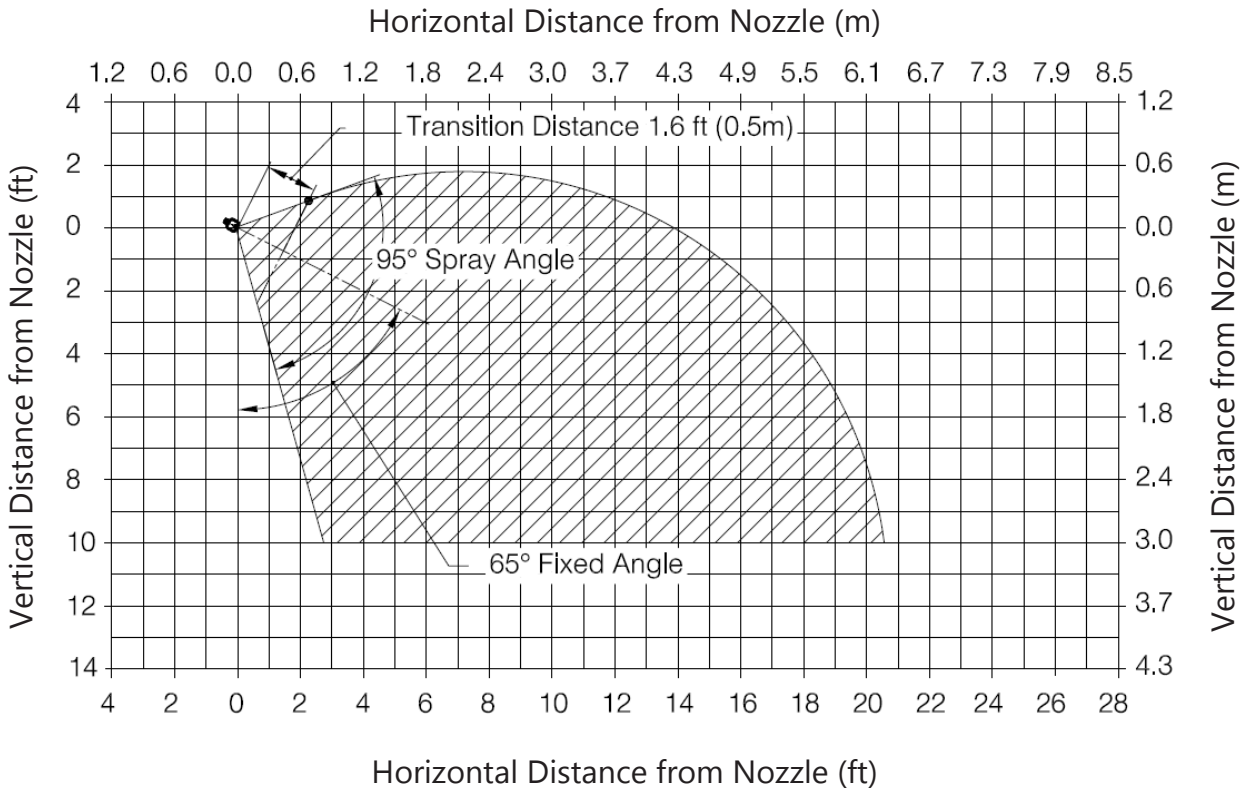


Figure 29 - 110º Spray Nozzle set at 60º Fixed Angle

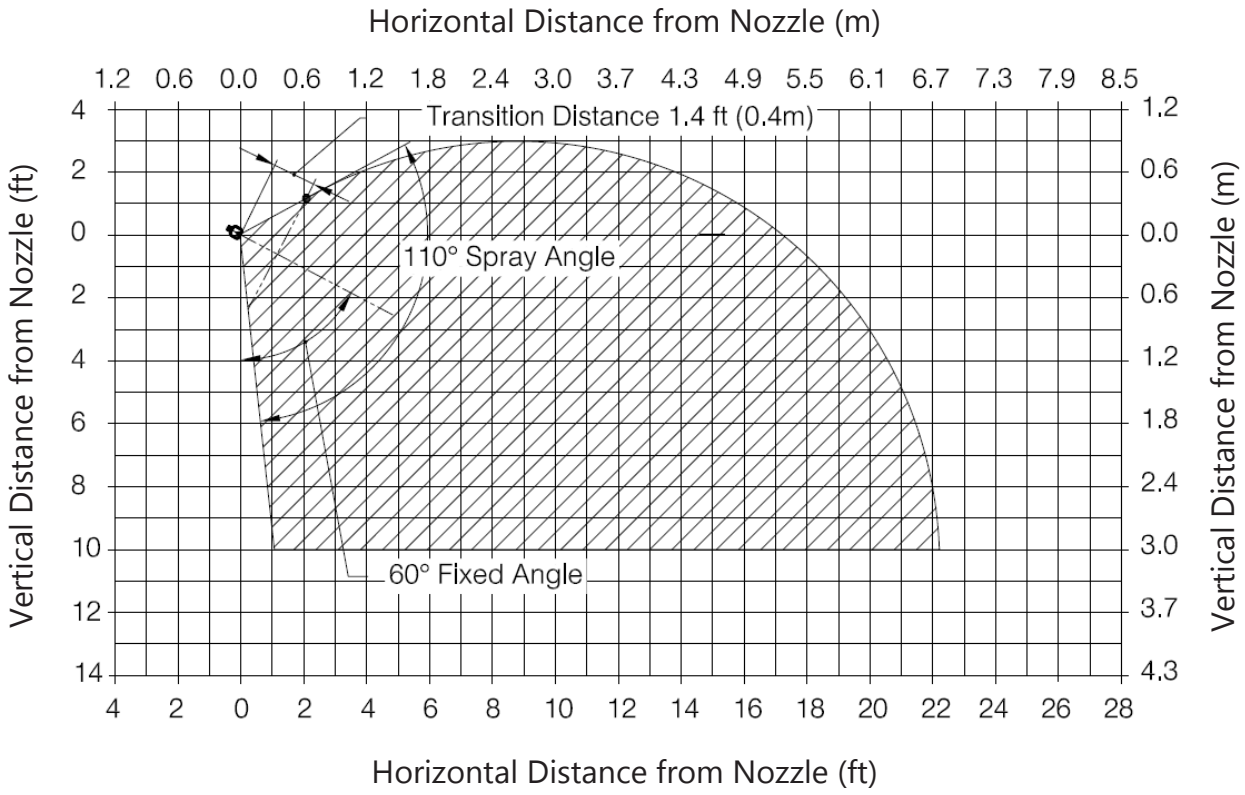


Figure 30 - 125º Spray Nozzle set at 60º Fixed Angle

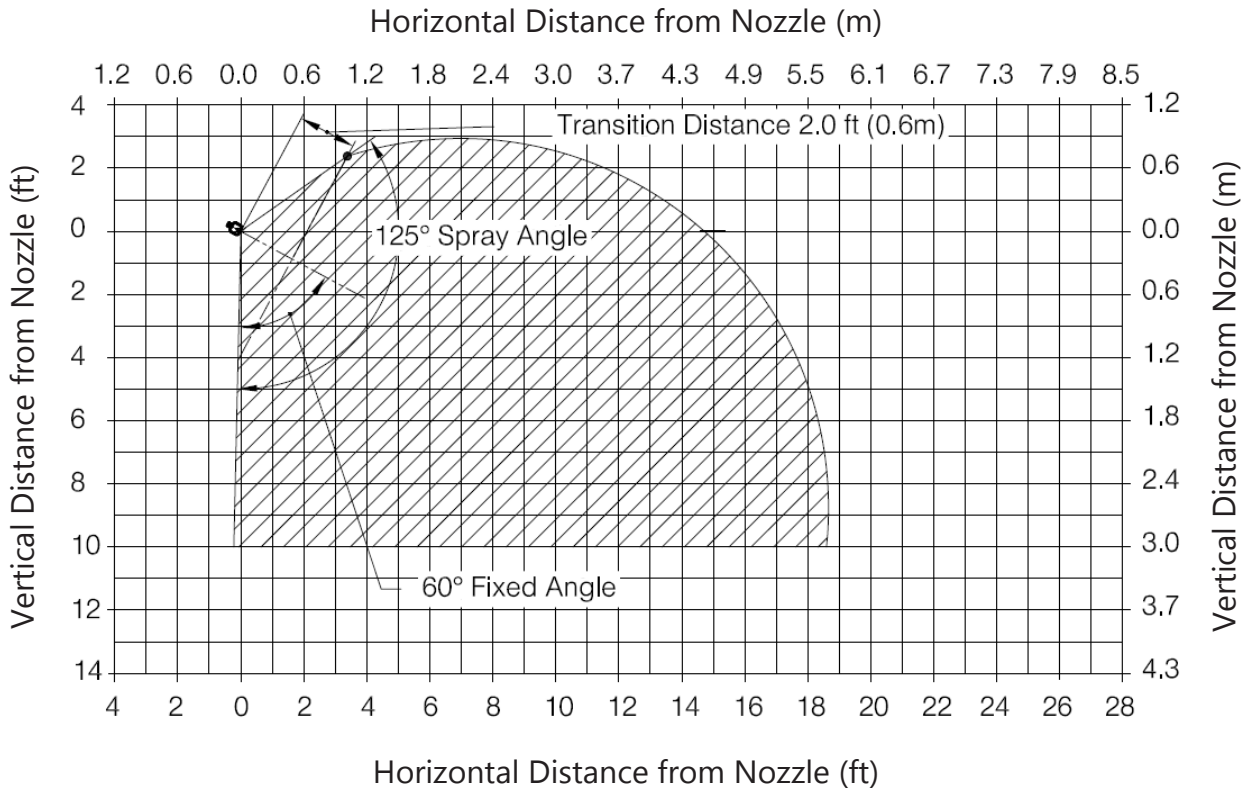


Figure 31 - 140º Spray Nozzle set at 60º Fixed Angle

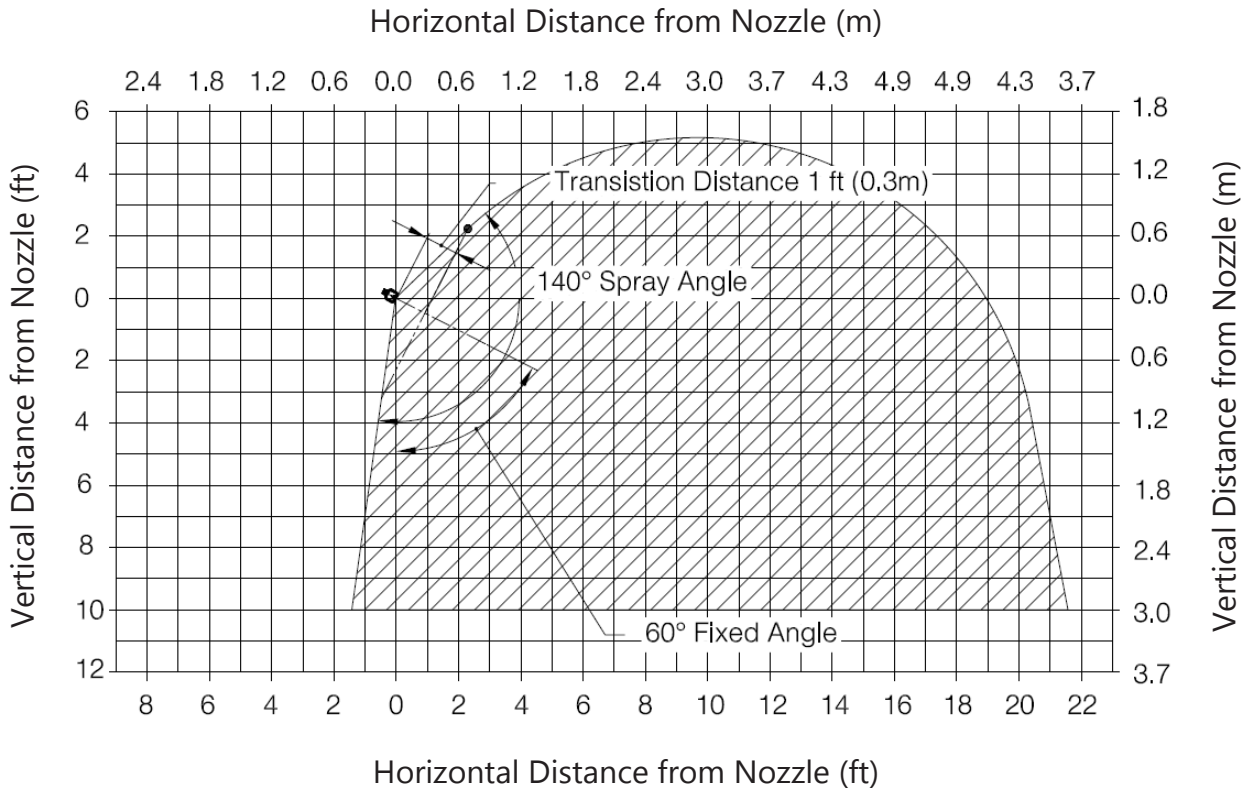


Figure 32 - 160º Spray Nozzle set at 60º Fixed Angle

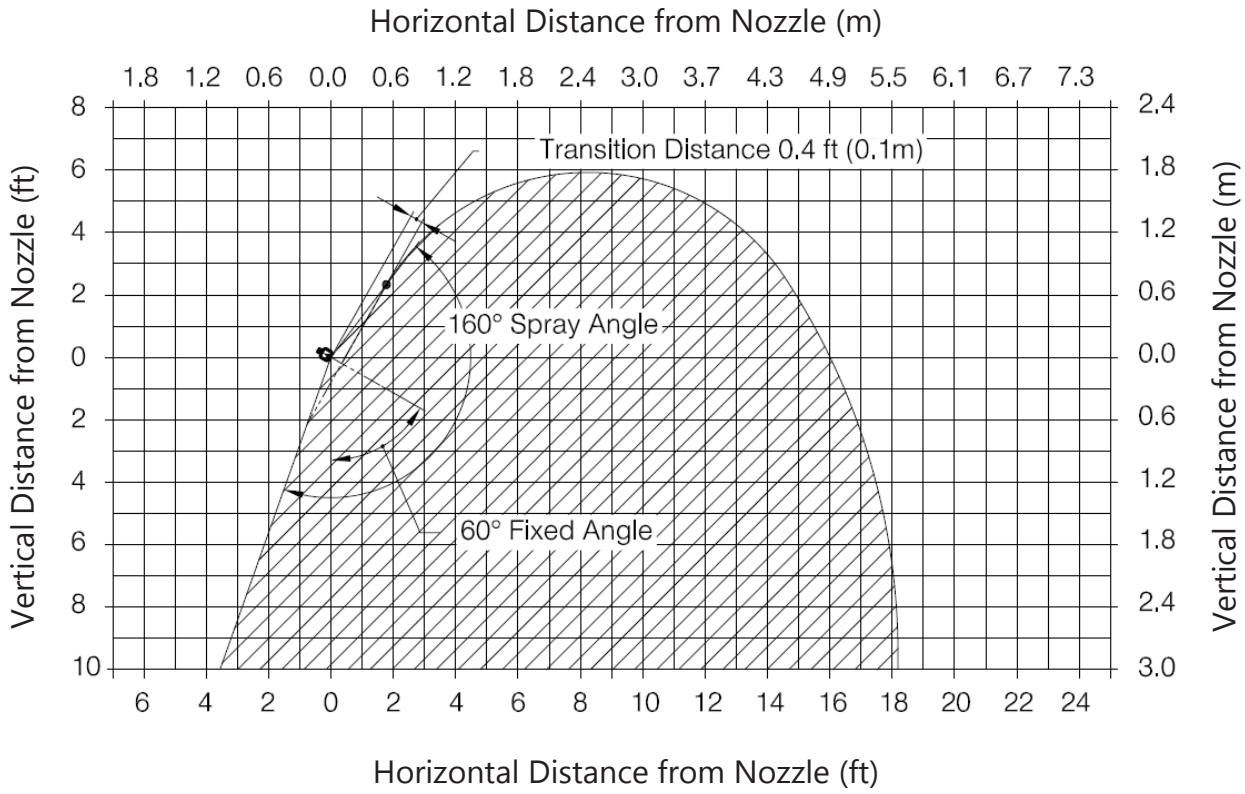


Figure 33 - 180º Spray Nozzle set at 60º Fixed Angle

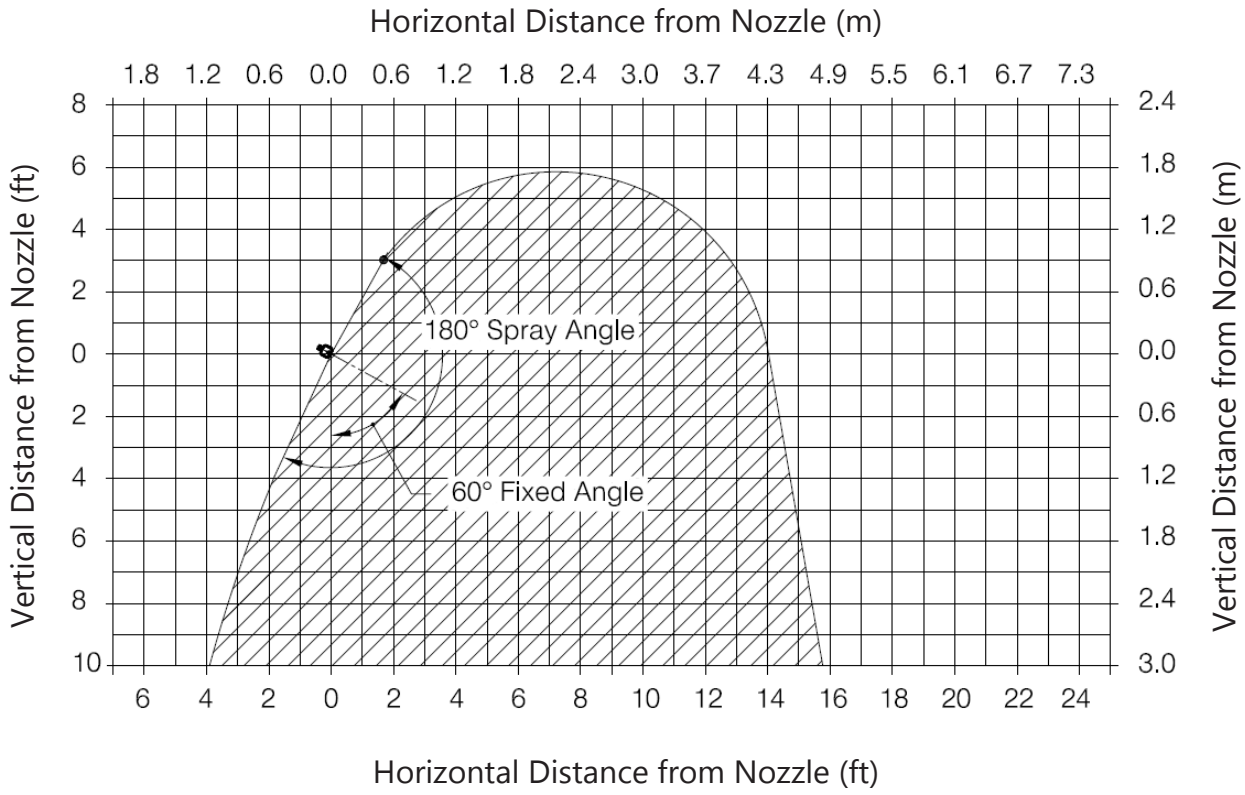


Figure 34 - 65º Spray Nozzle set at 90º Fixed Angle

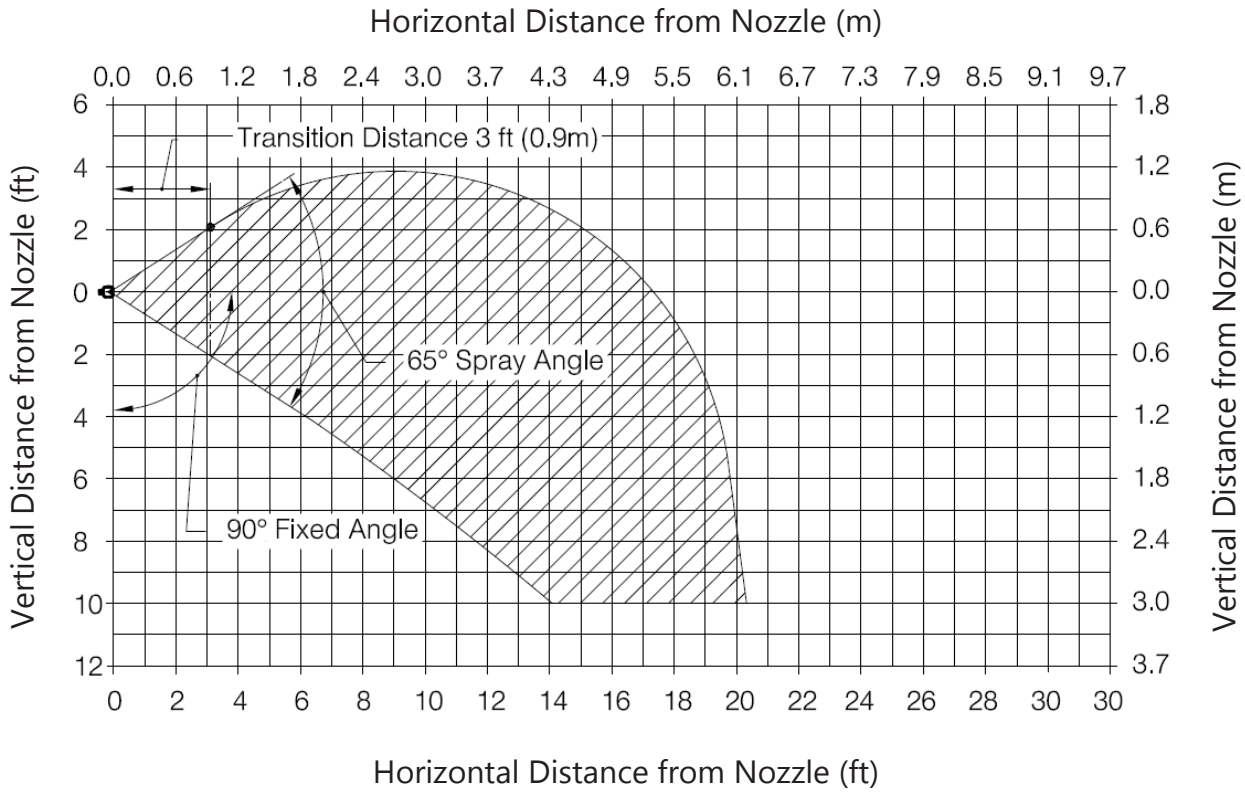


Figure 35 - 80º Spray Nozzle set at 90º Fixed Angle

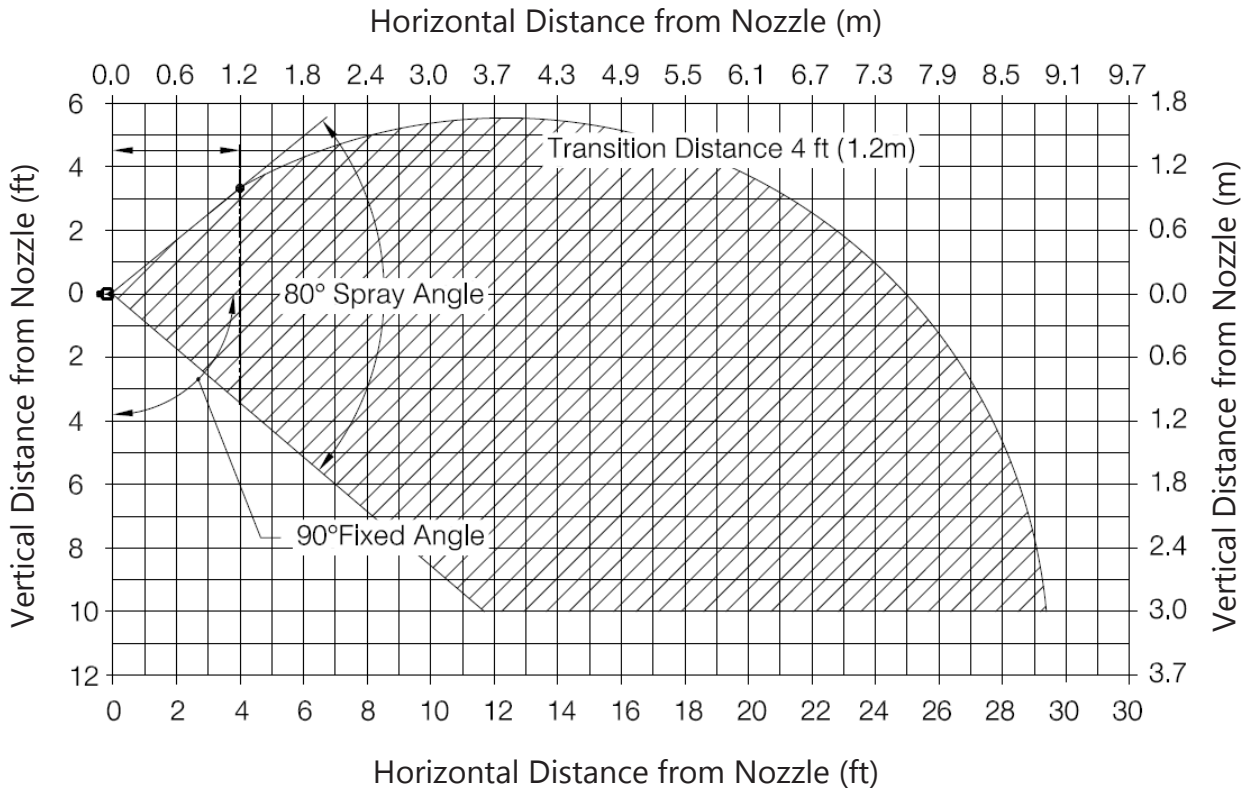


Figure 36 - 95º Spray Nozzle set at 90º Fixed Angle

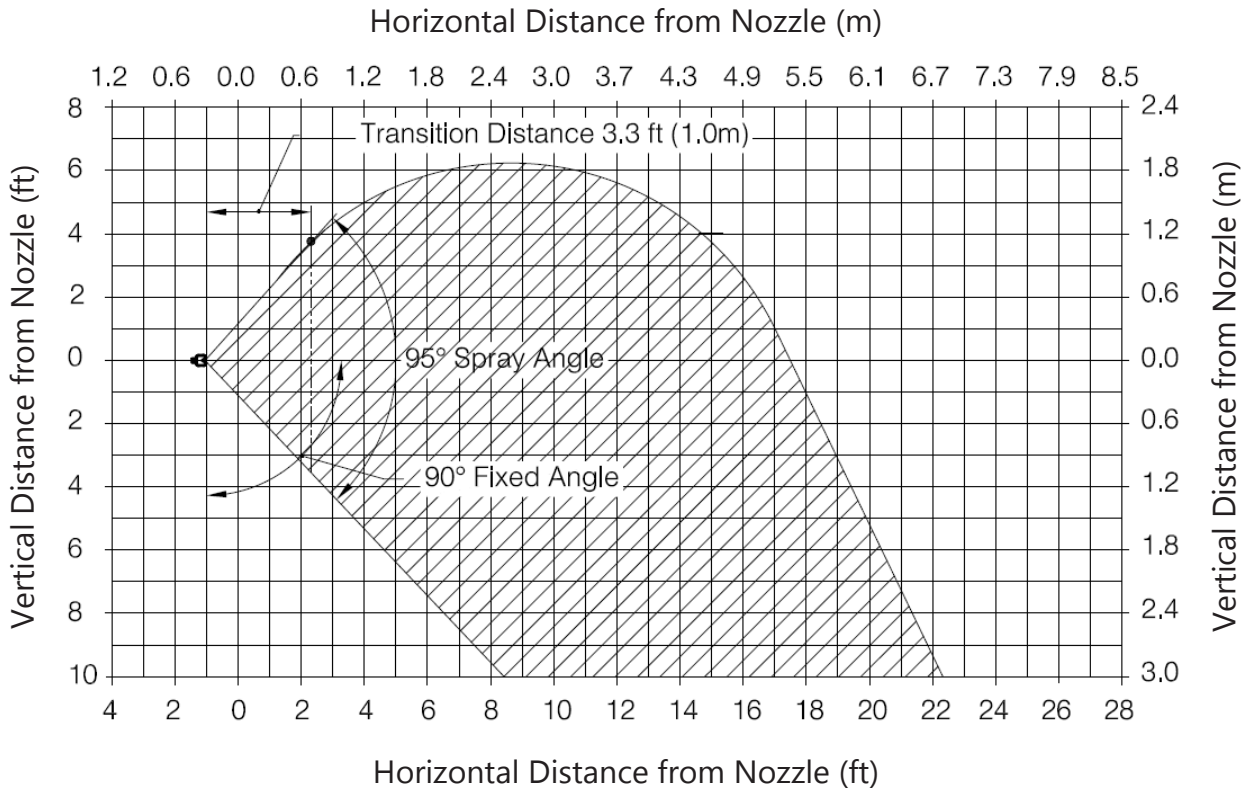


Figure 37 - 110º Spray Nozzle set at 90º Fixed Angle

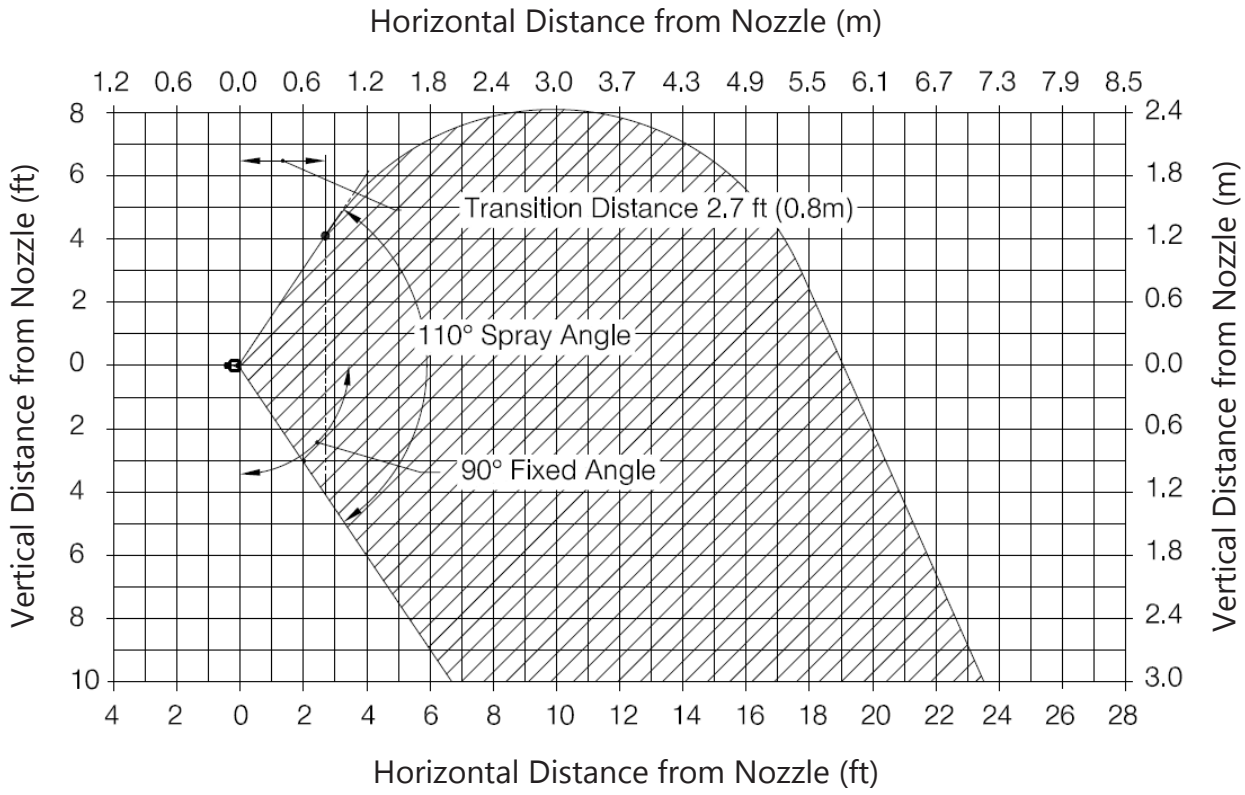


Figure 38 - 125º Spray Nozzle set at 90º Fixed Angle

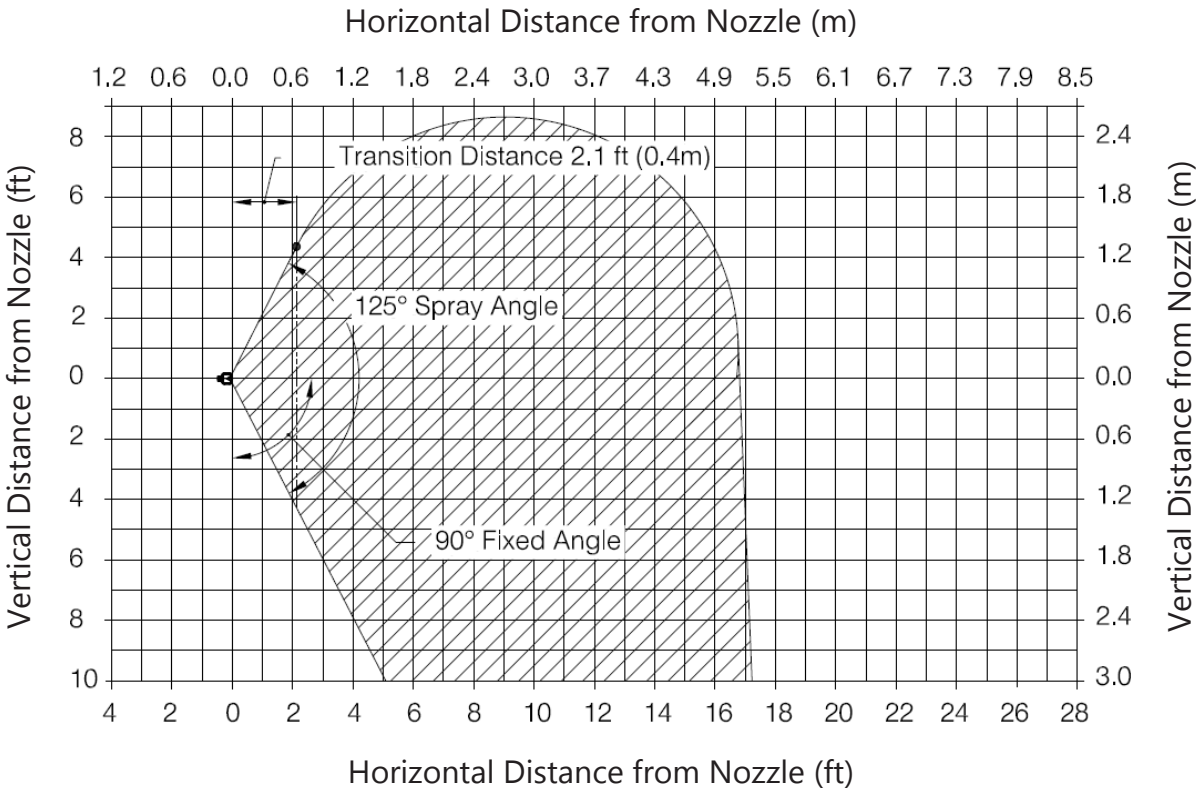


Figure 39 - 140º Spray Nozzle set at 90º Fixed Angle

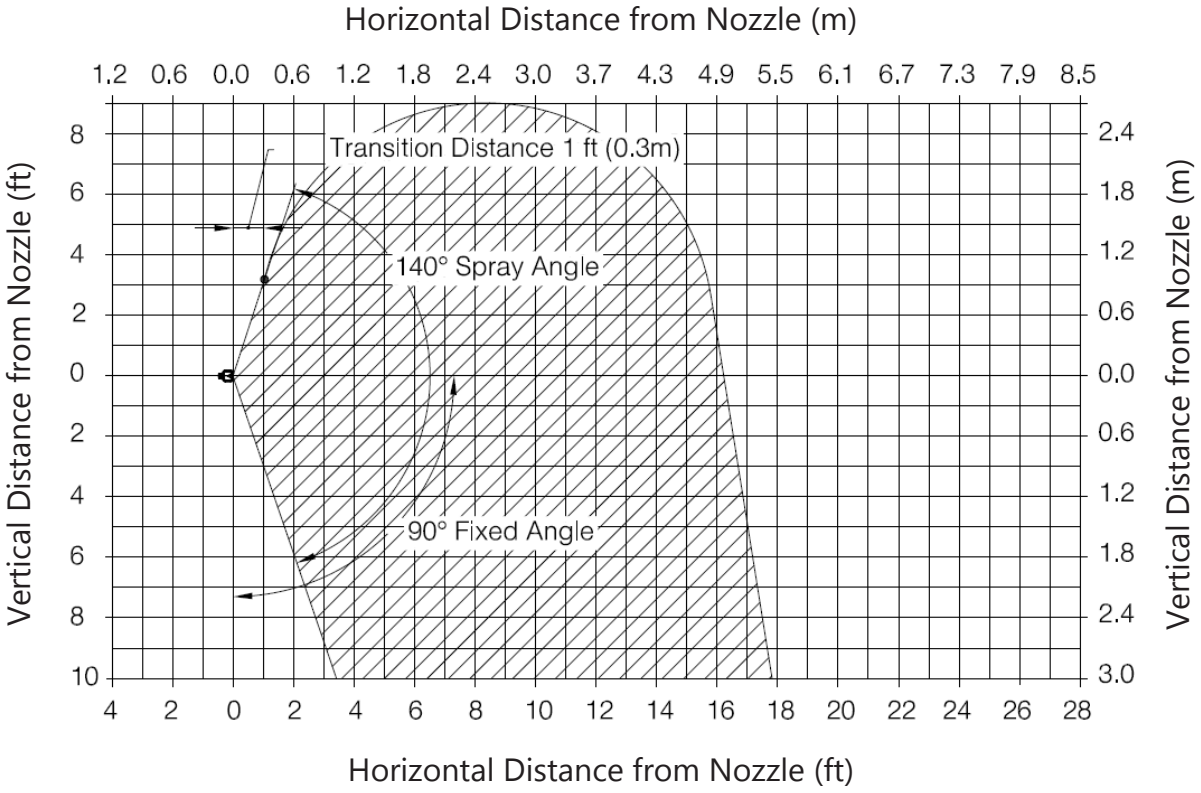


Figure 40 - 160º Spray Nozzle set at 90º Fixed Angle

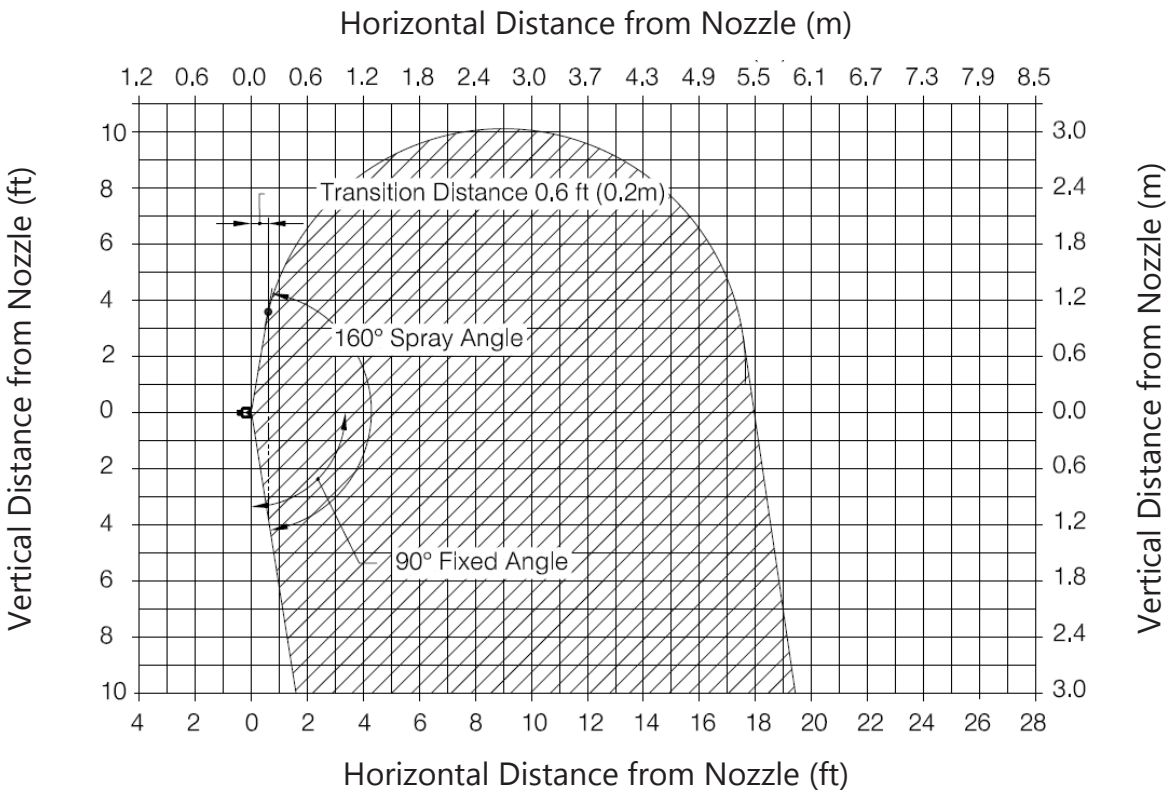


Figure 41 - 180º Spray Nozzle set at 90º Fixed Angle

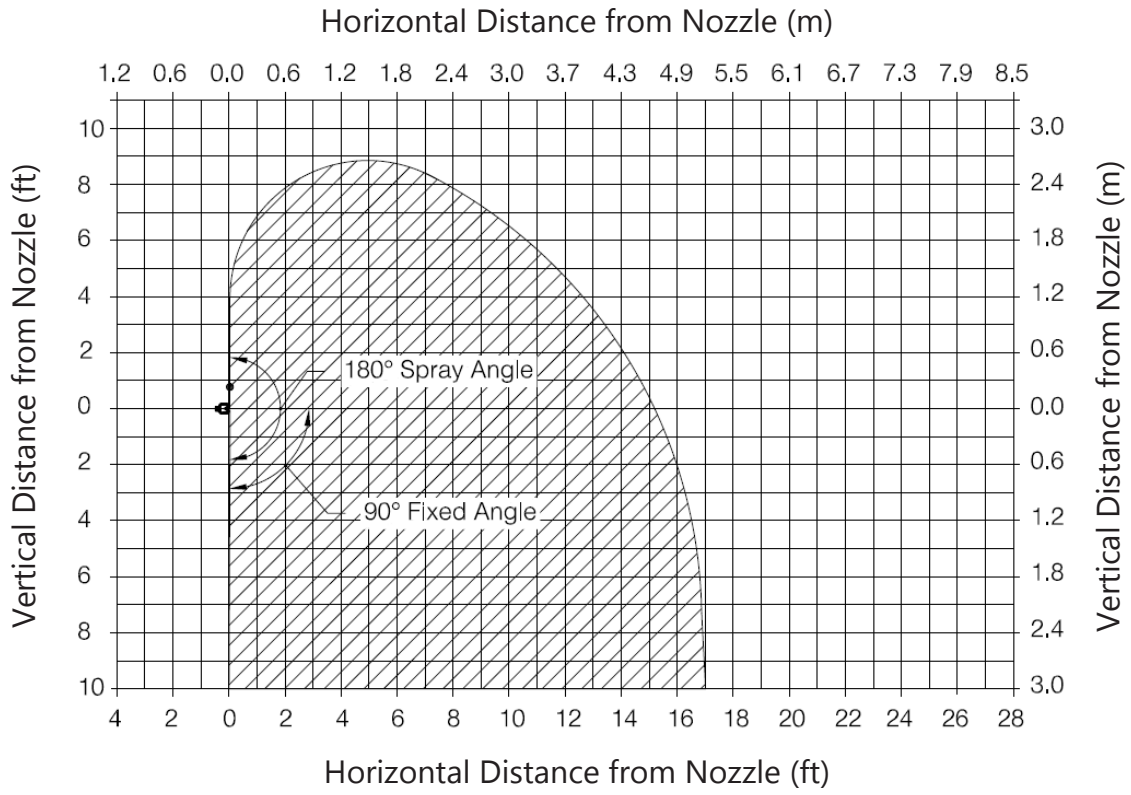


Figure 42 - 65º Spray Nozzle set at 120º Fixed Angle

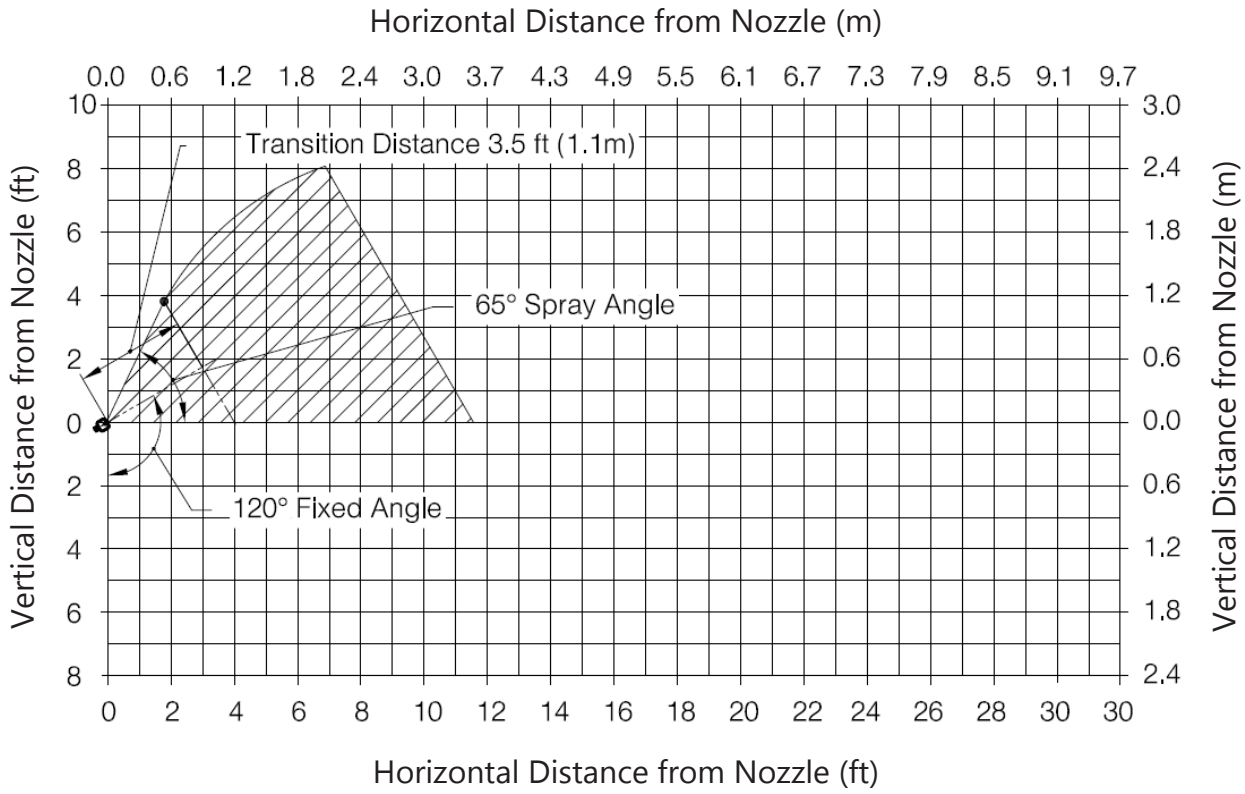


Figure 43 - 80º Spray Nozzle set at 120º Fixed Angle

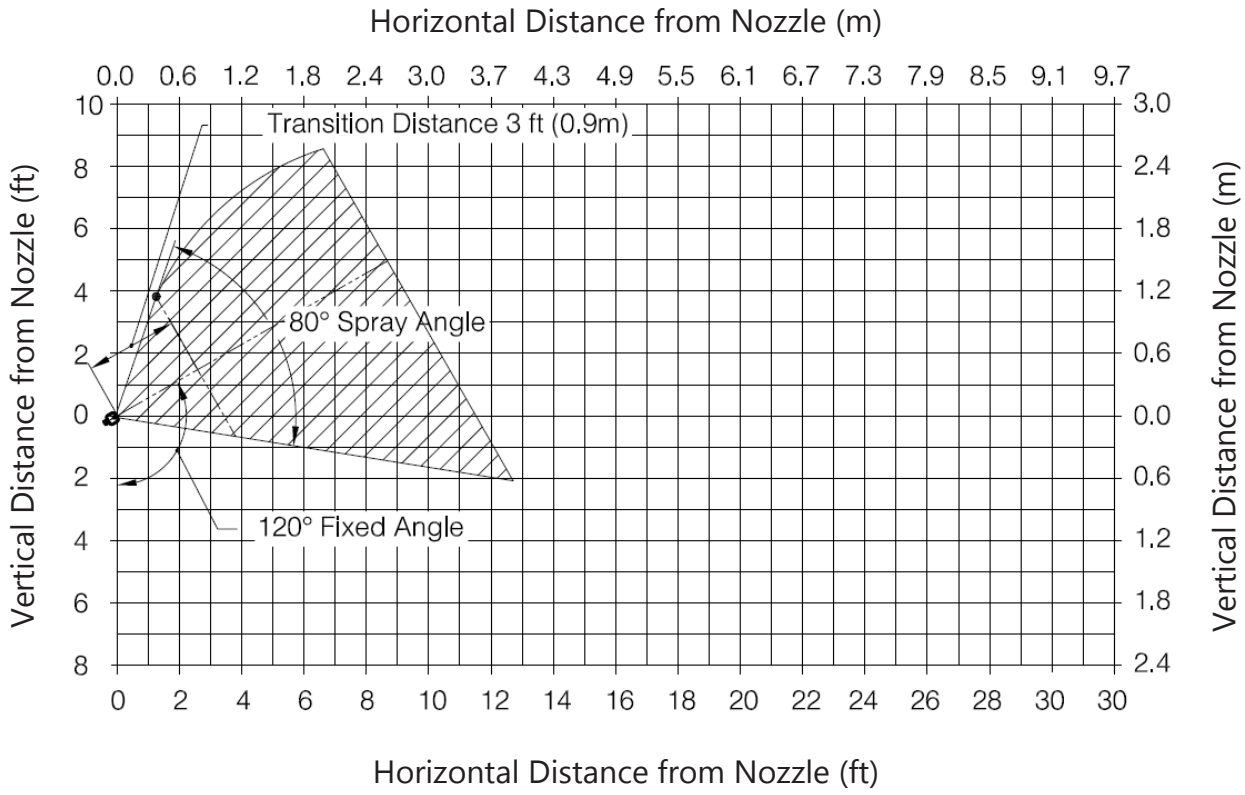


Figure 44 - 95º Spray Nozzle set at 120º Fixed Angle

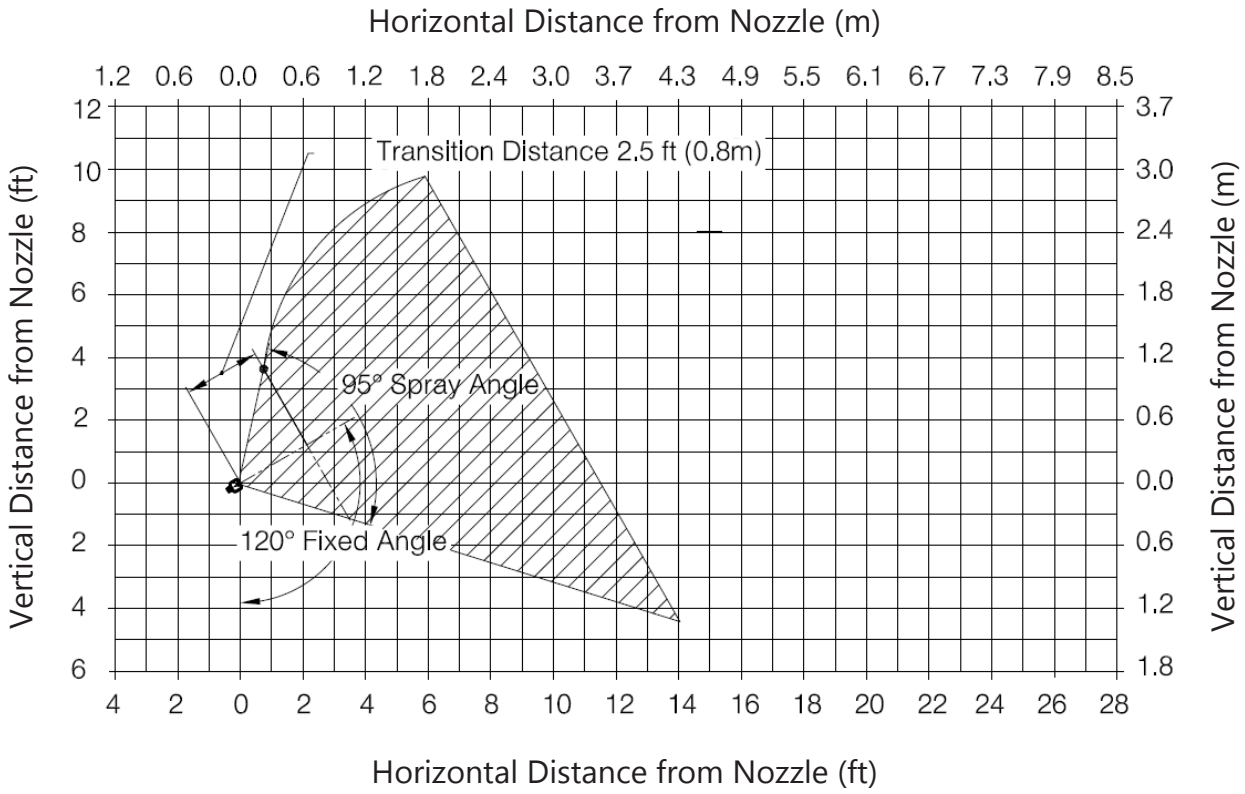


Figure 45 - 110º Spray Nozzle set at 120º Fixed Angle

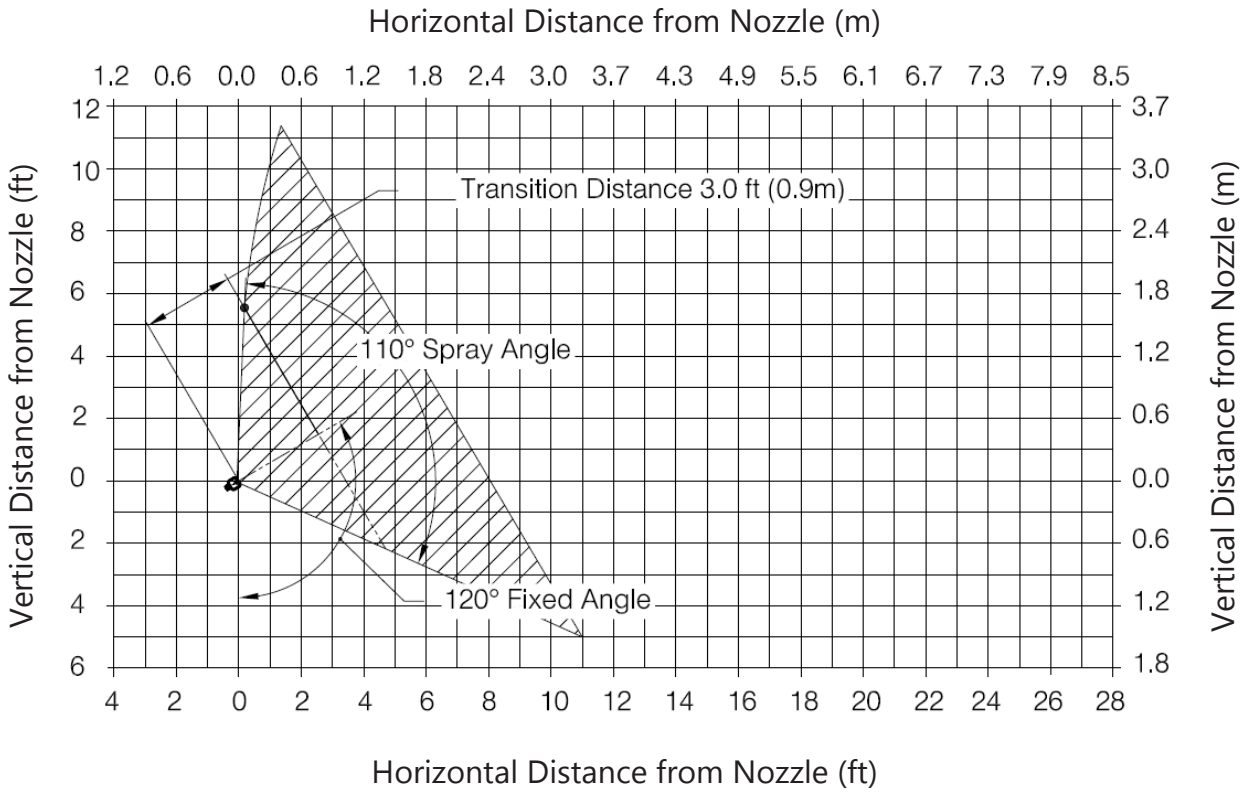


Figure 46 - 125º Spray Nozzle set at 120º Fixed Angle

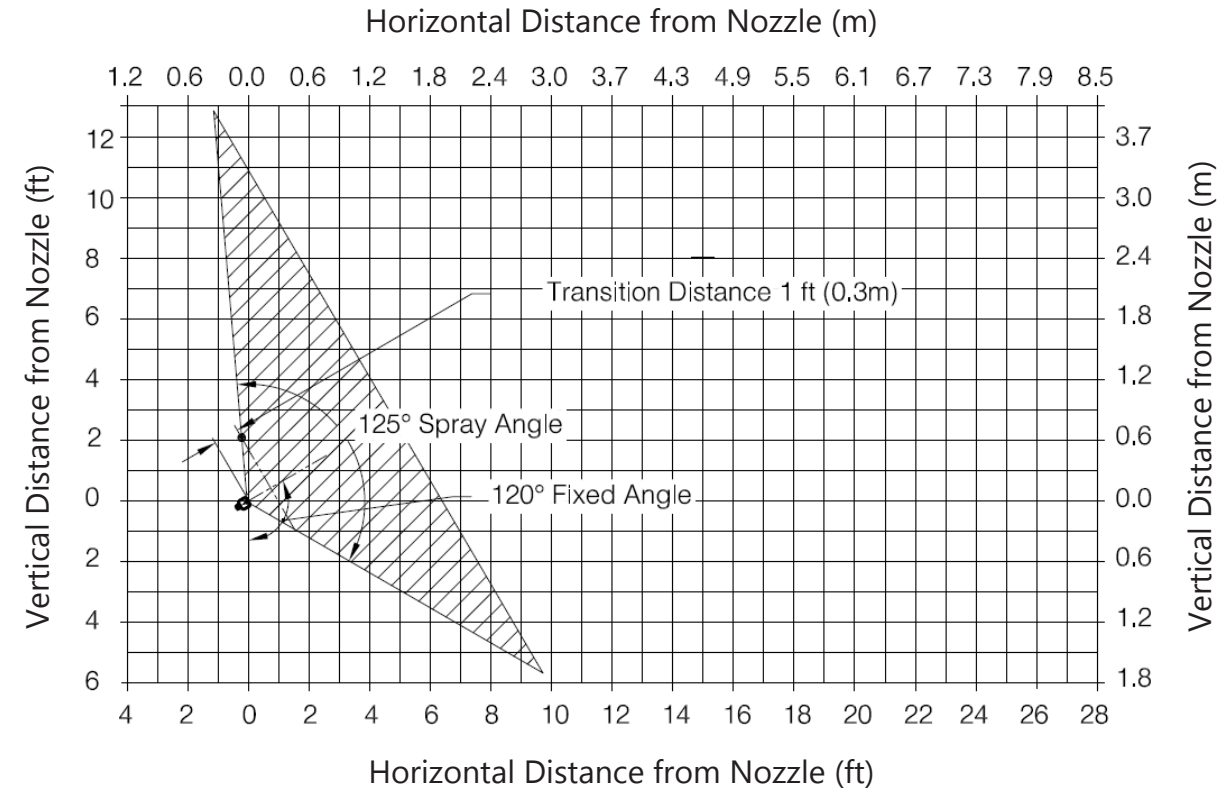


Figure 47 - 140º Spray Nozzle set at 120º Fixed Angle

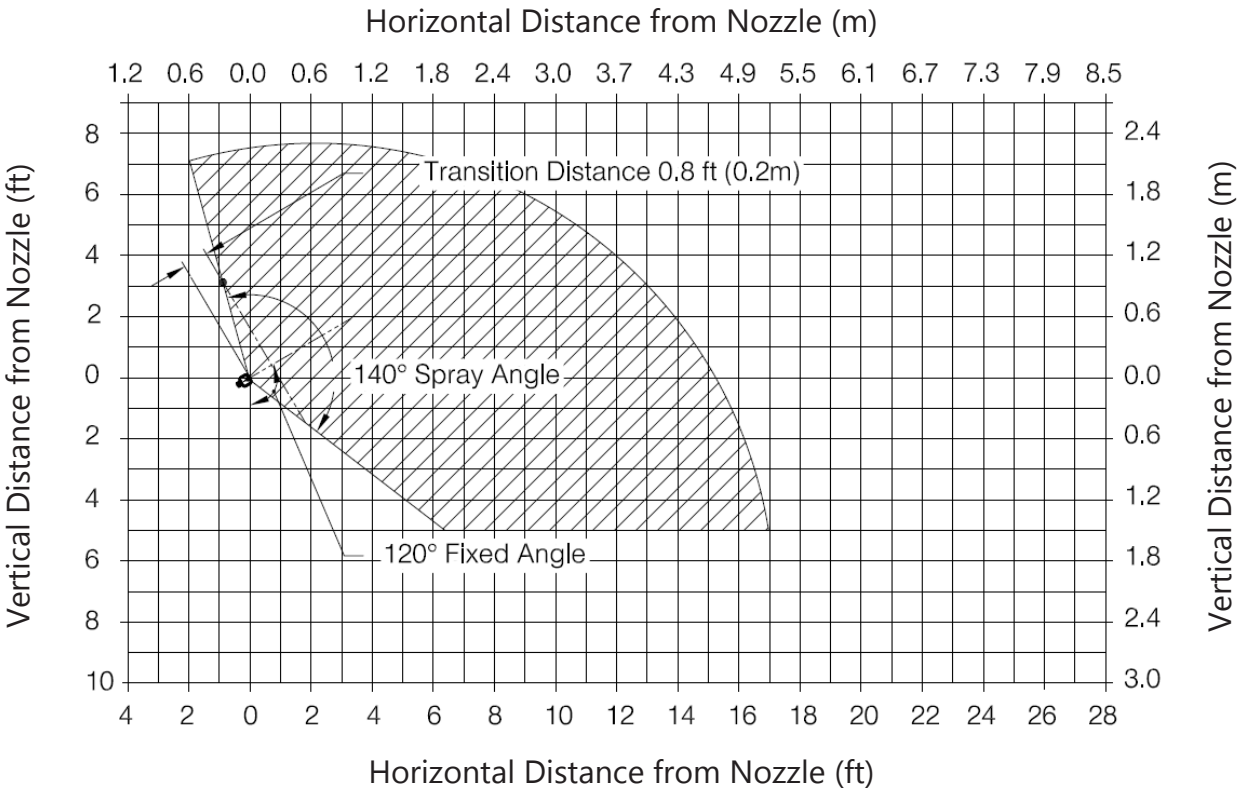


Figure 48 - 160º Spray Nozzle set at 120º Fixed Angle

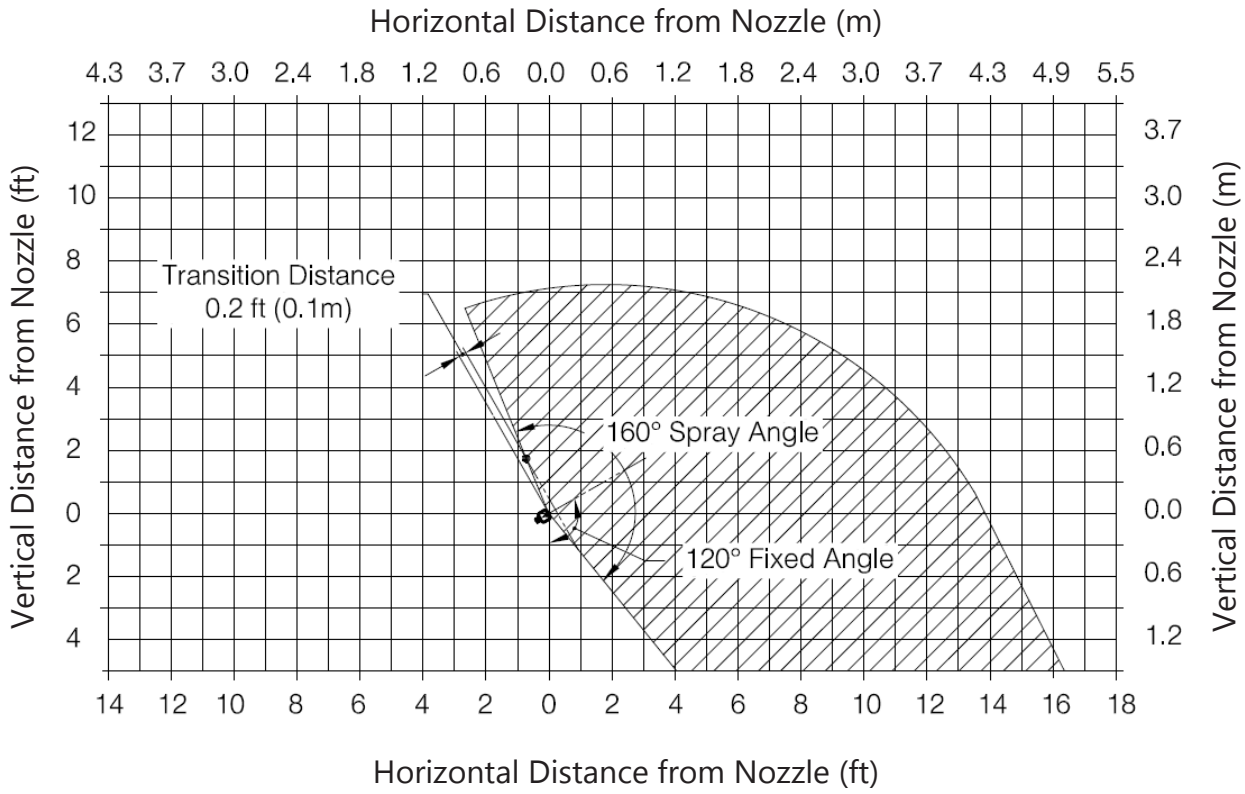


Figure 49 - 180º Spray Nozzle set at 120º Fixed Angle

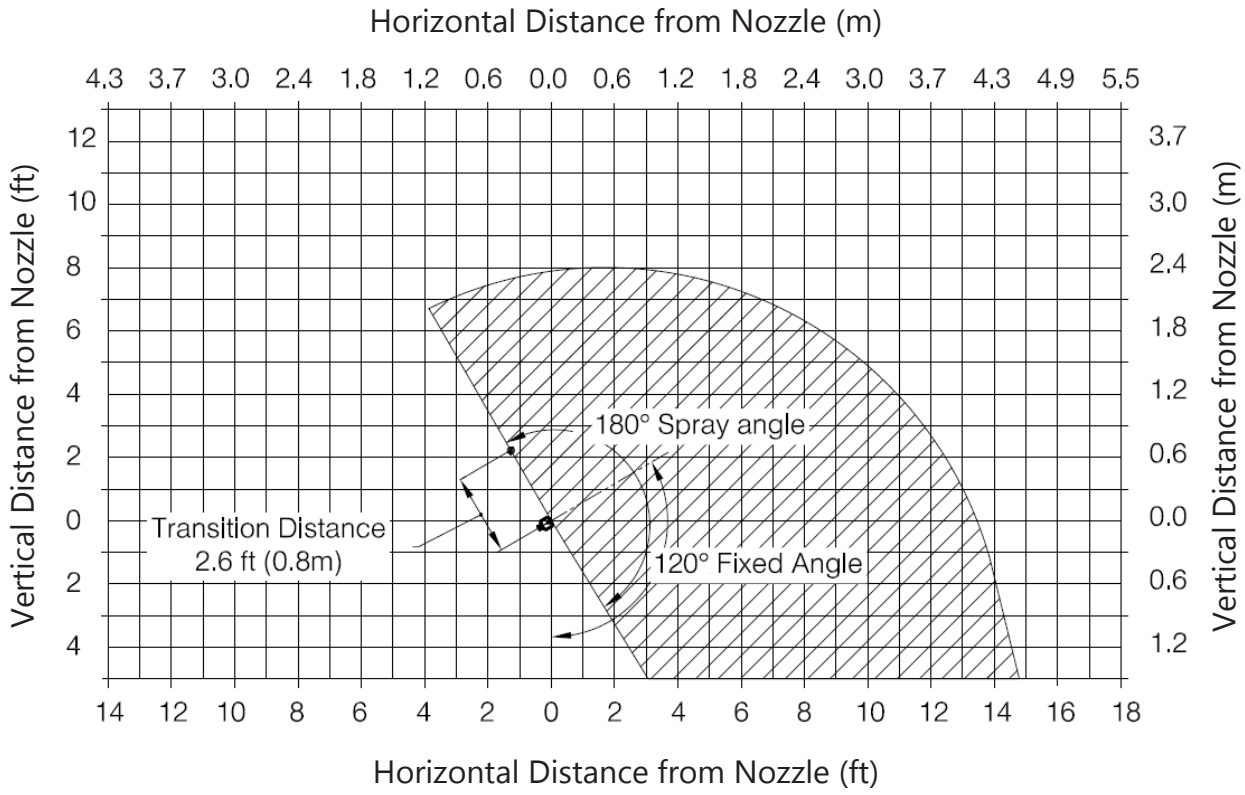


Figure 50 - 65º Spray Nozzle set at 135º Fixed Angle

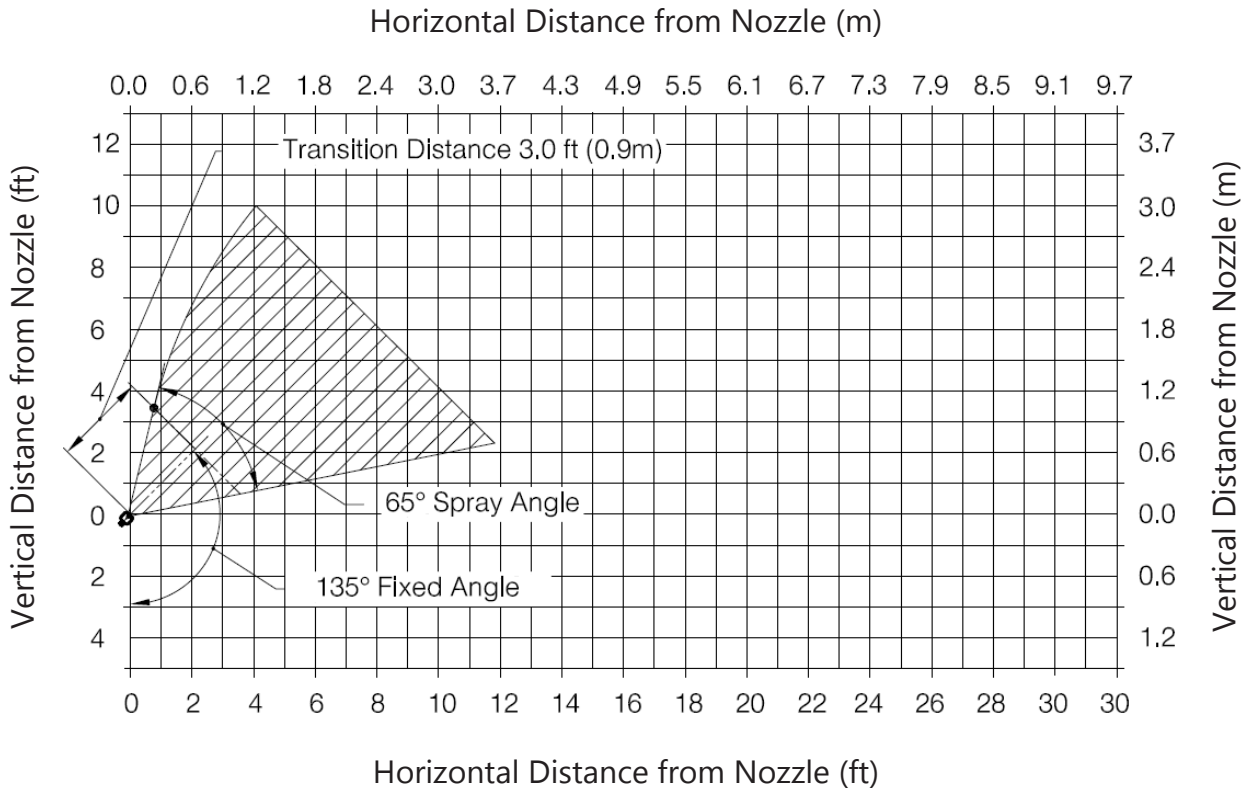


Figure 51 - 80º Spray Nozzle set at 135º Fixed Angle

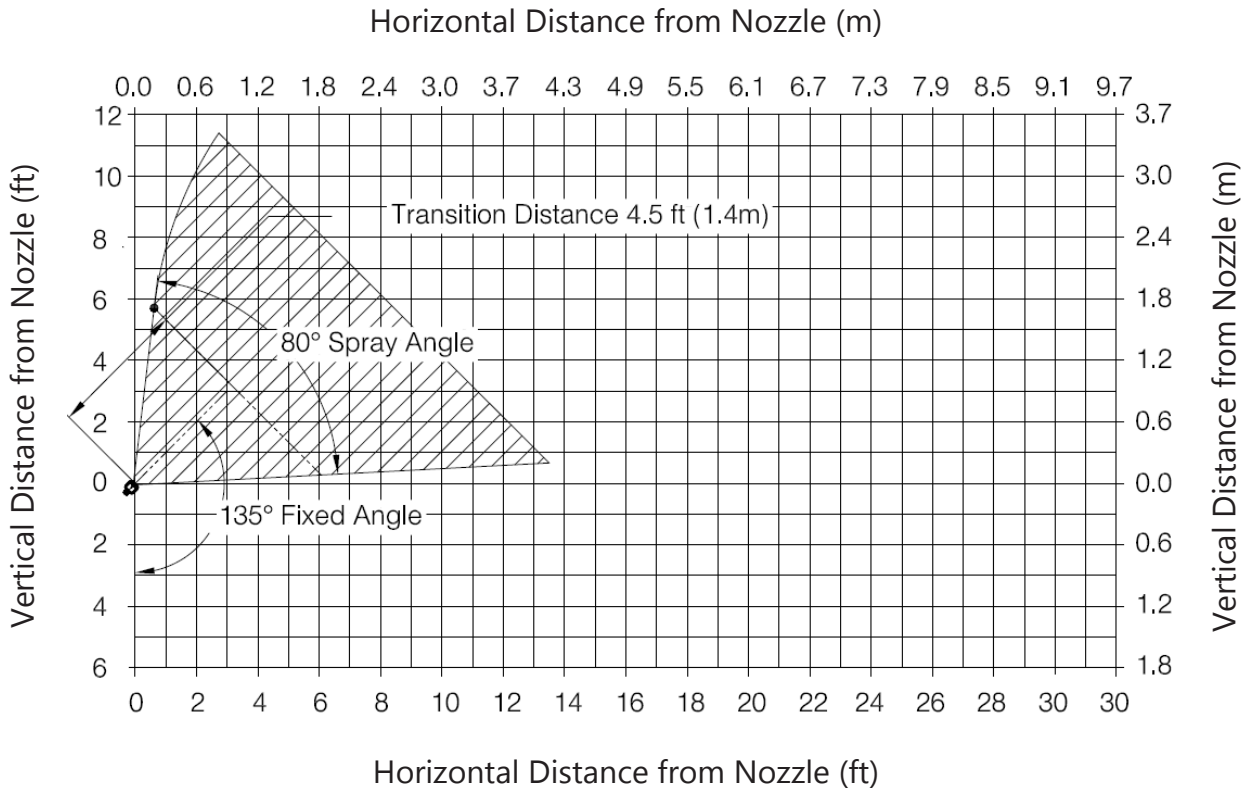


Figure 52 - 95º Spray Nozzle set at 135º Fixed Angle

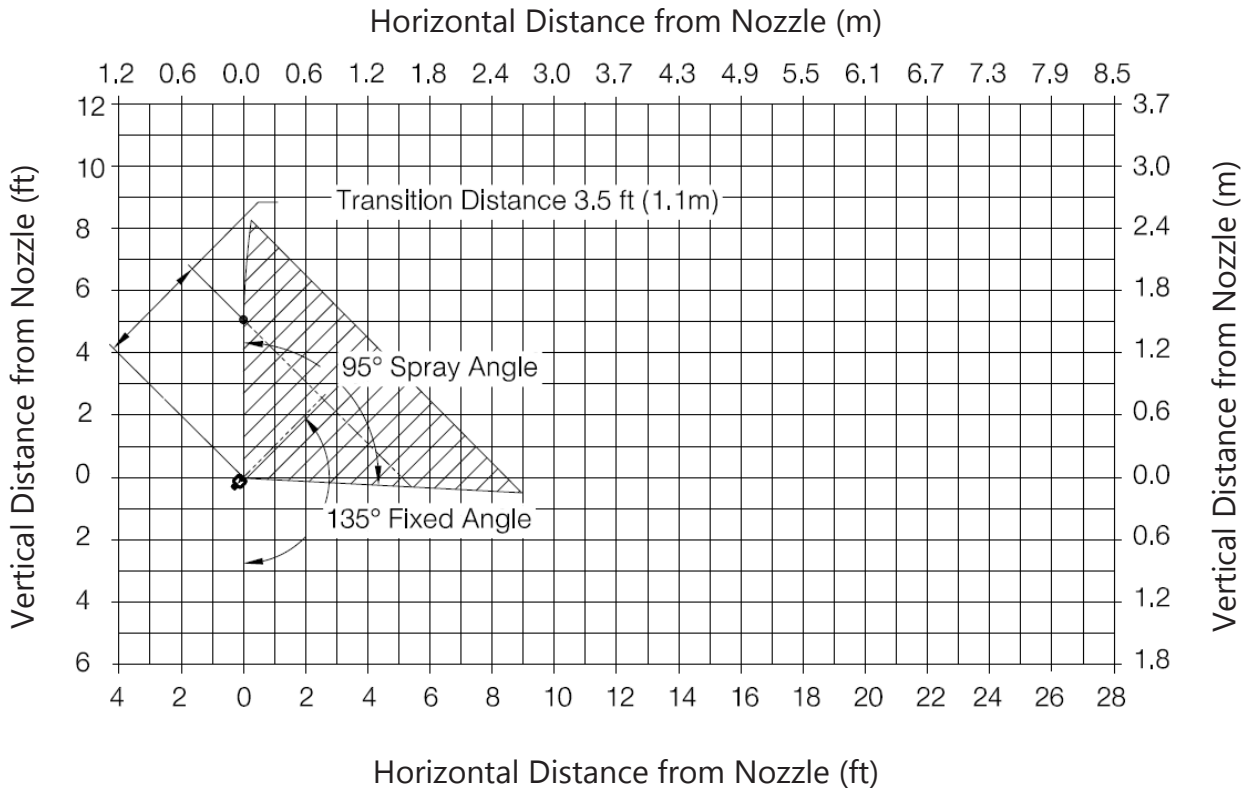


Figure 53 - 110º Spray Nozzle set at 135º Fixed Angle

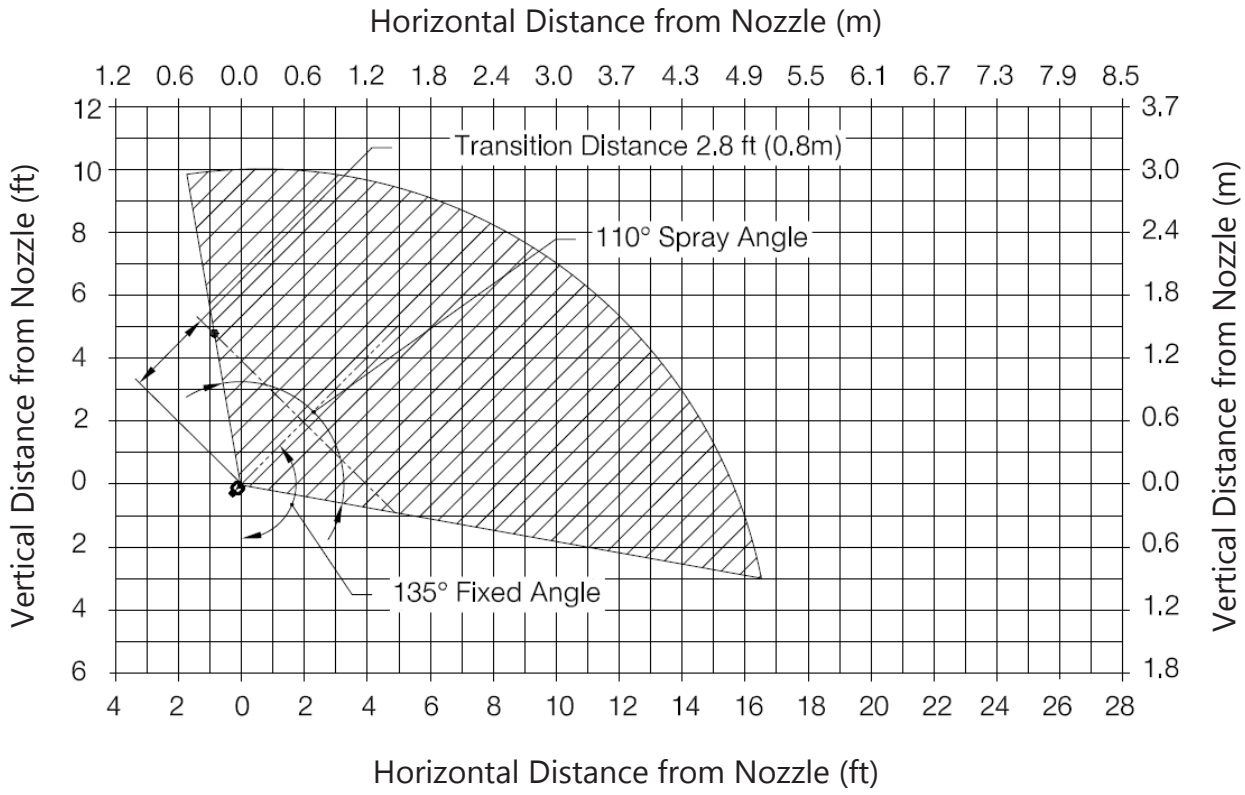


Figure 54 - 125º Spray Nozzle set at 135º Fixed Angle

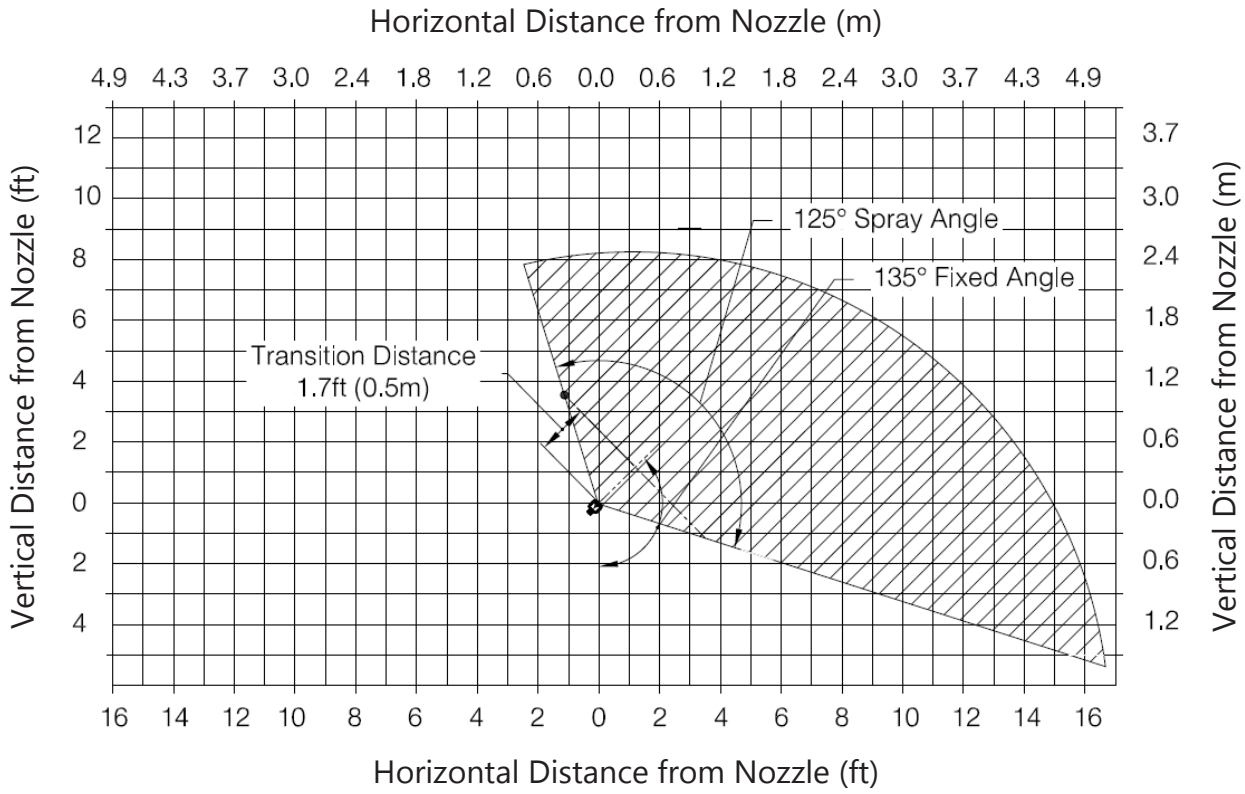


Figure 55 - 140º Spray Nozzle set at 135º Fixed Angle

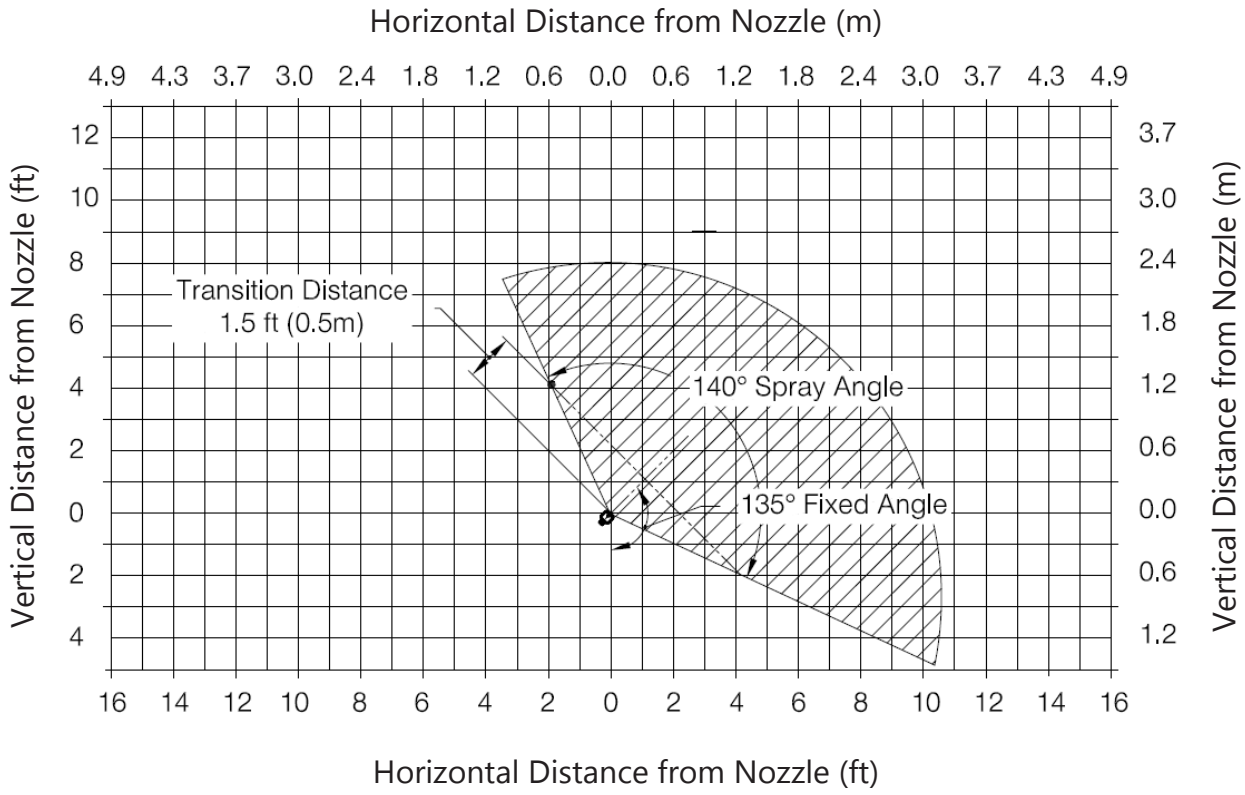


Figure 56 - 160° Spray Nozzle set at 135° Fixed Angle

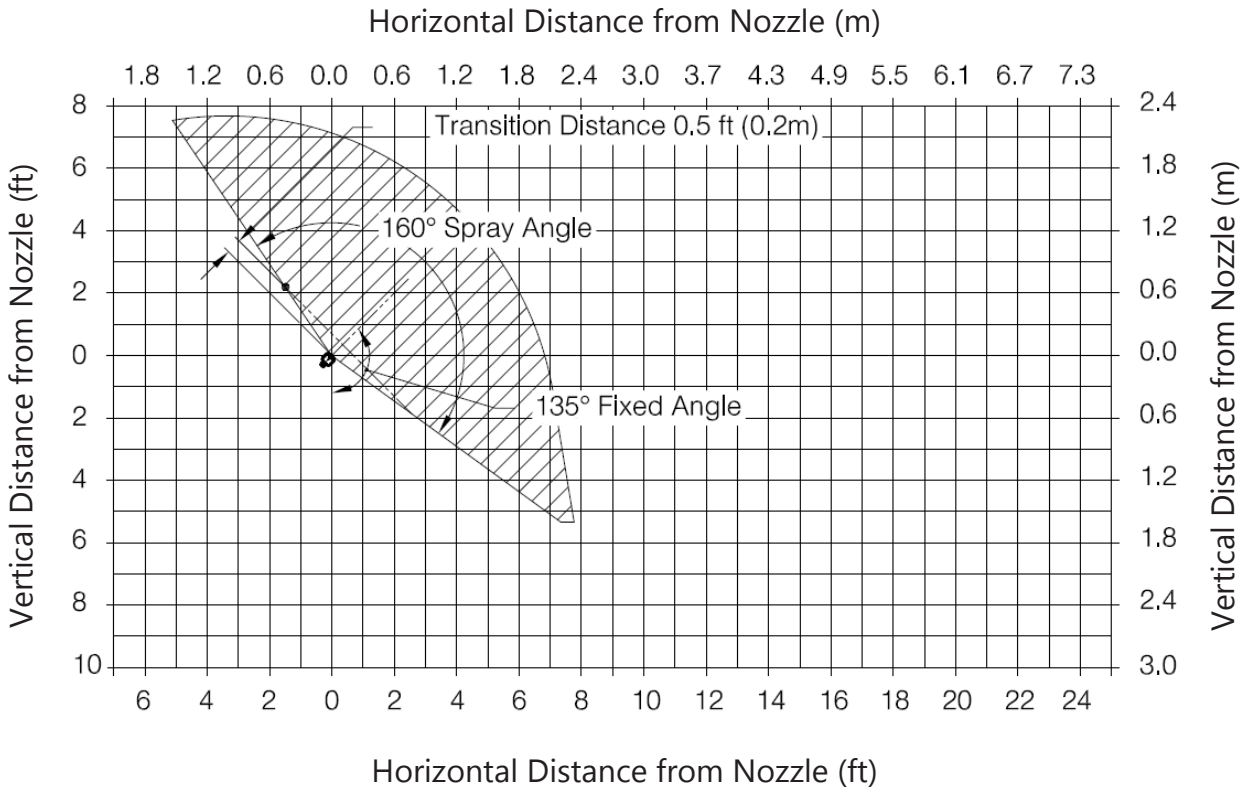


Figure 57 - 180° Spray Nozzle set at 135° Fixed Angle

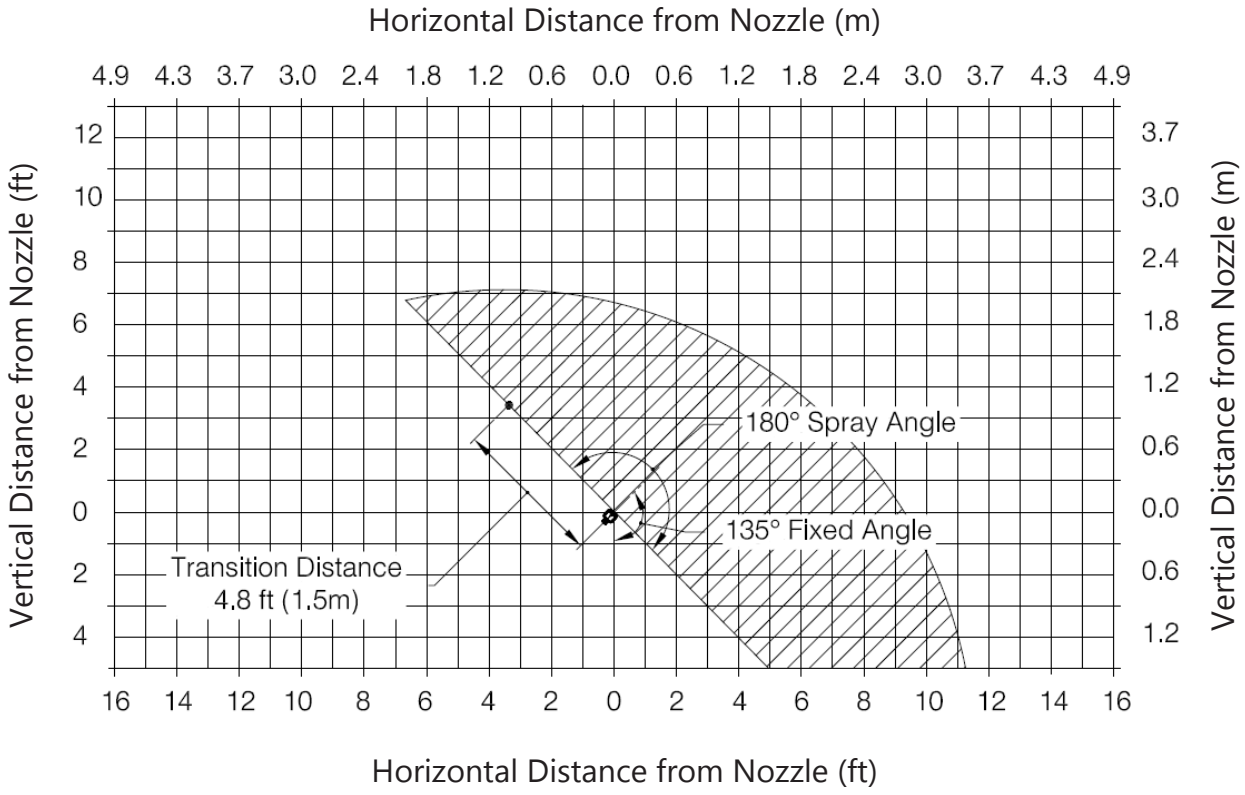


Figure 58 - 65º Spray Nozzle set at 150º Fixed Angle

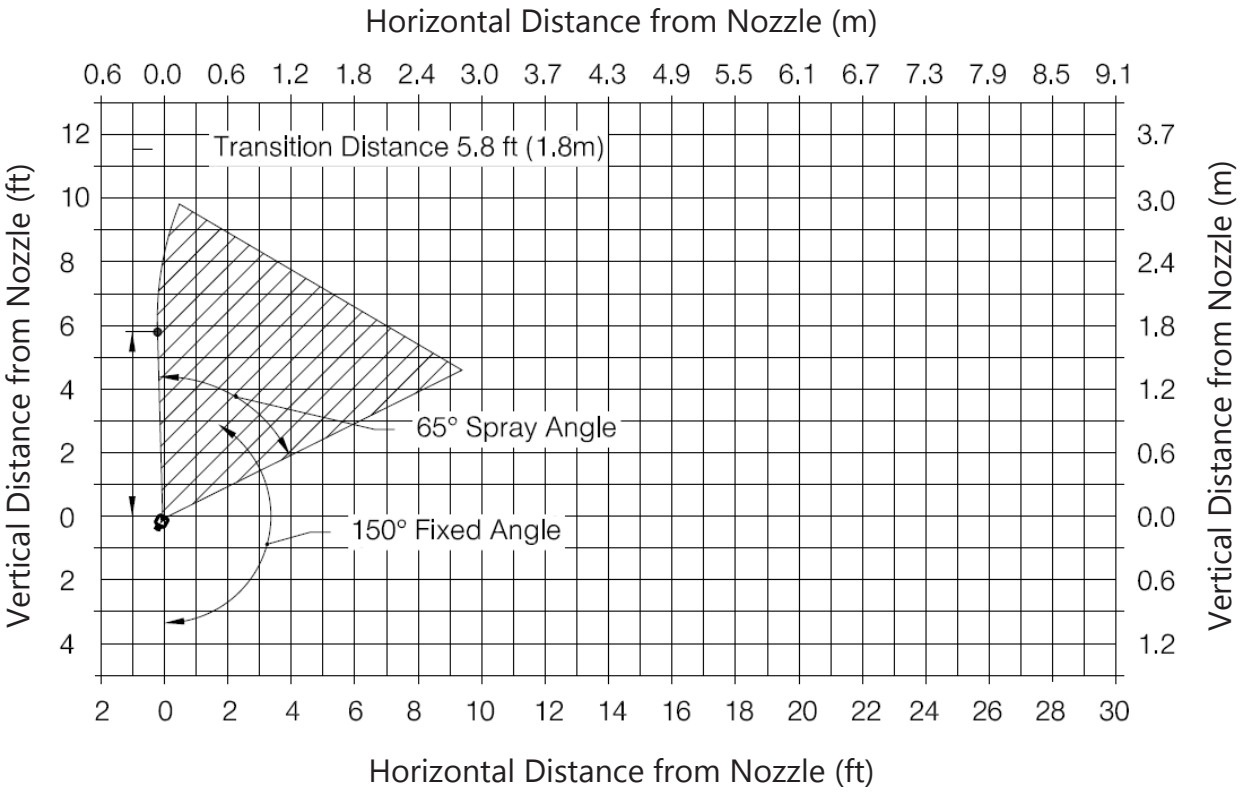


Figure 59 - 80º Spray Nozzle set at 150º Fixed Angle

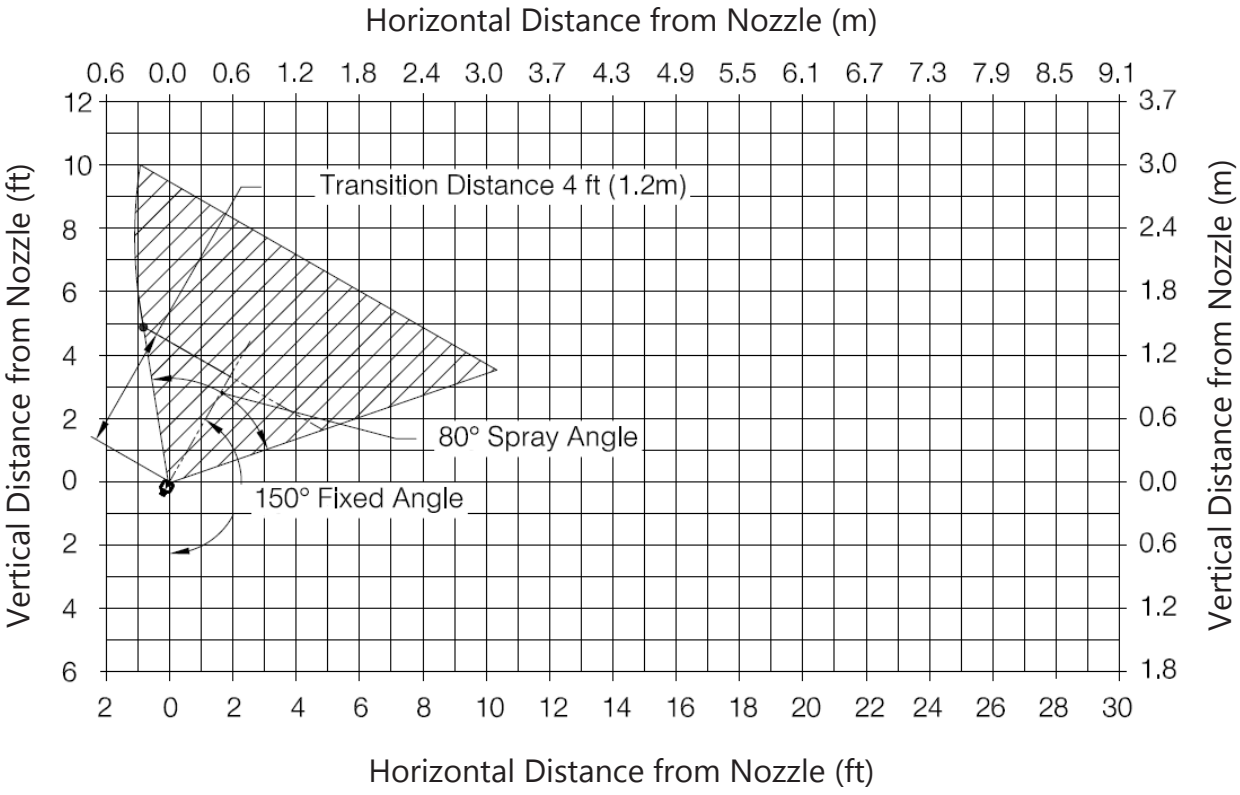


Figure 60 - 95º Spray Nozzle set at 150º Fixed Angle

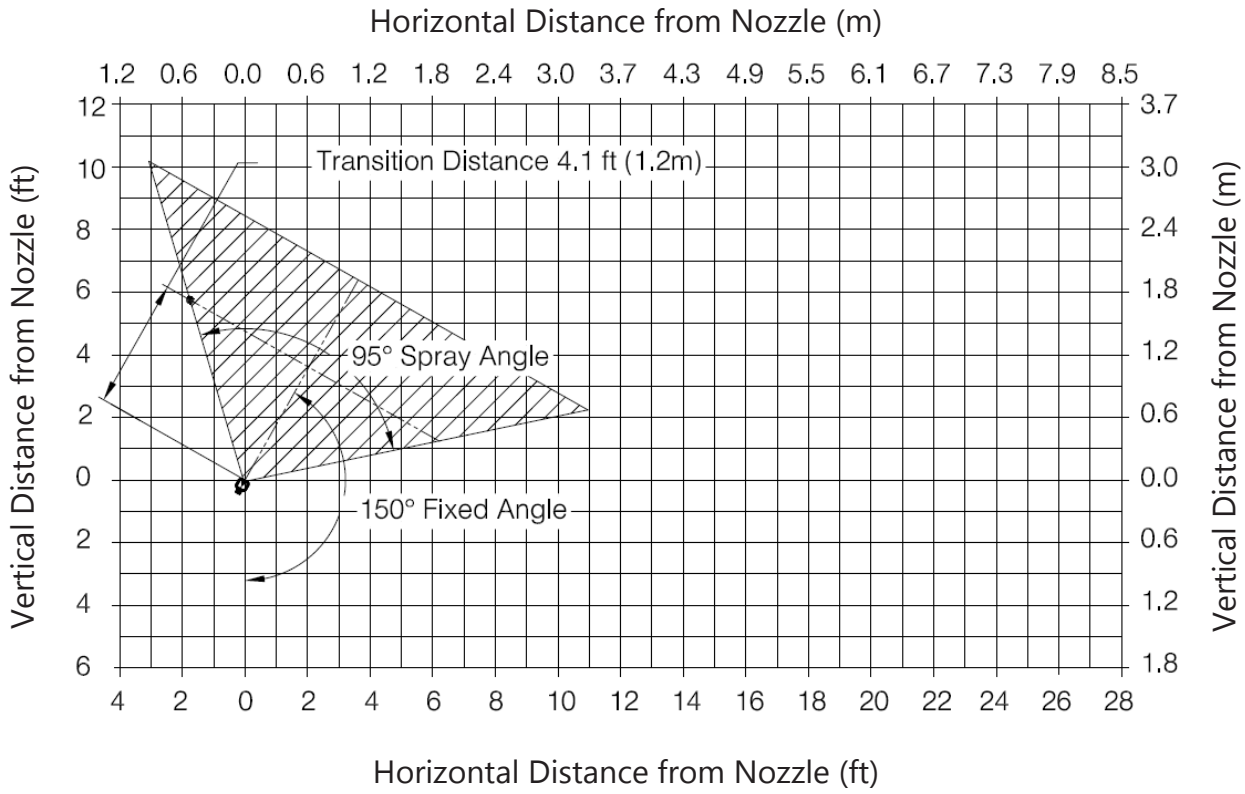


Figure 61 - 110º Spray Nozzle set at 150º Fixed Angle

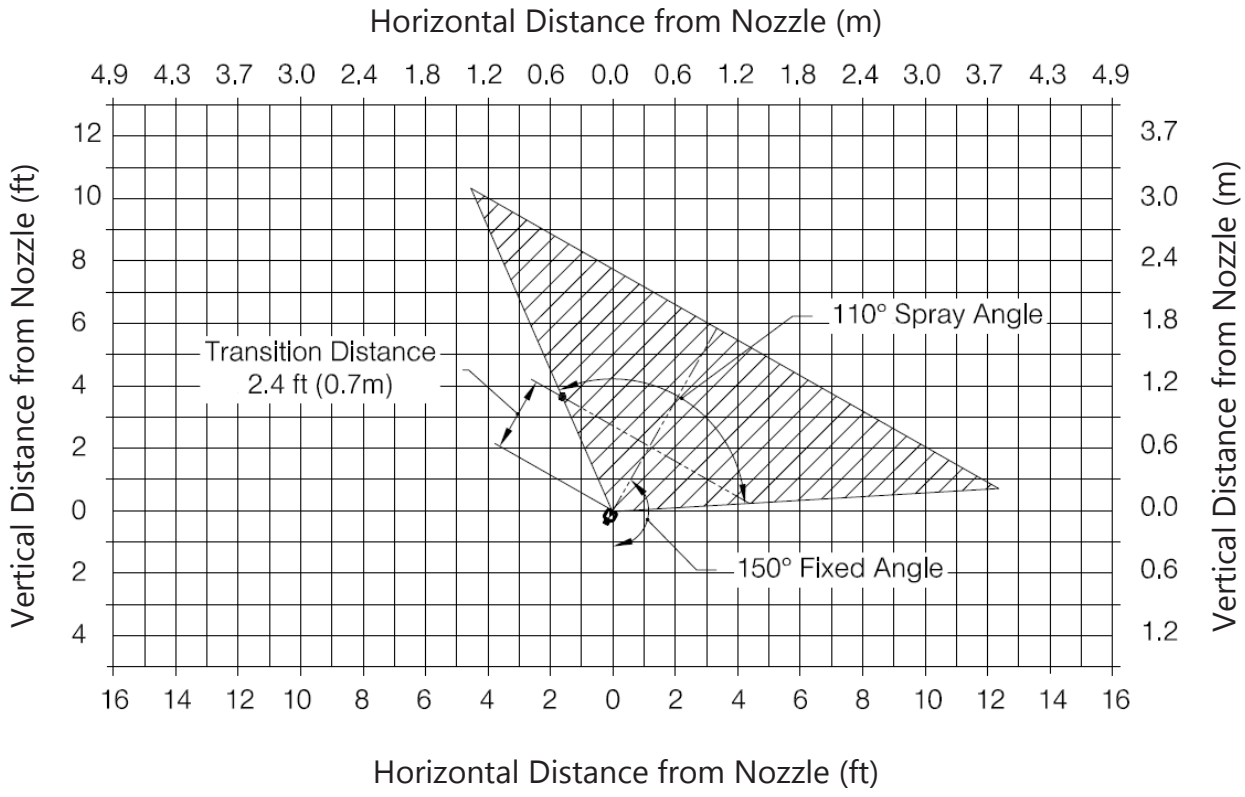


Figure 62 - 125º Spray Nozzle set at 150º Fixed Angle

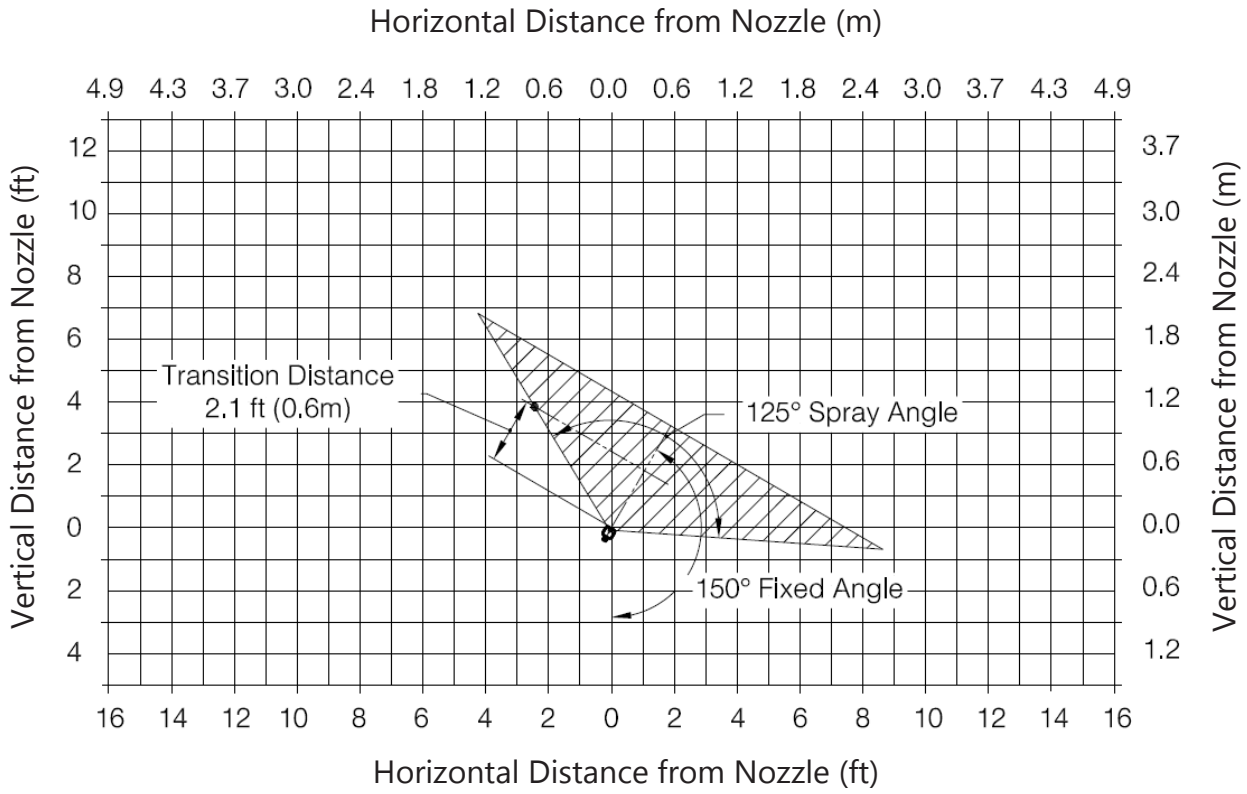


Figure 63 - 140º Spray Nozzle set at 150º Fixed Angle

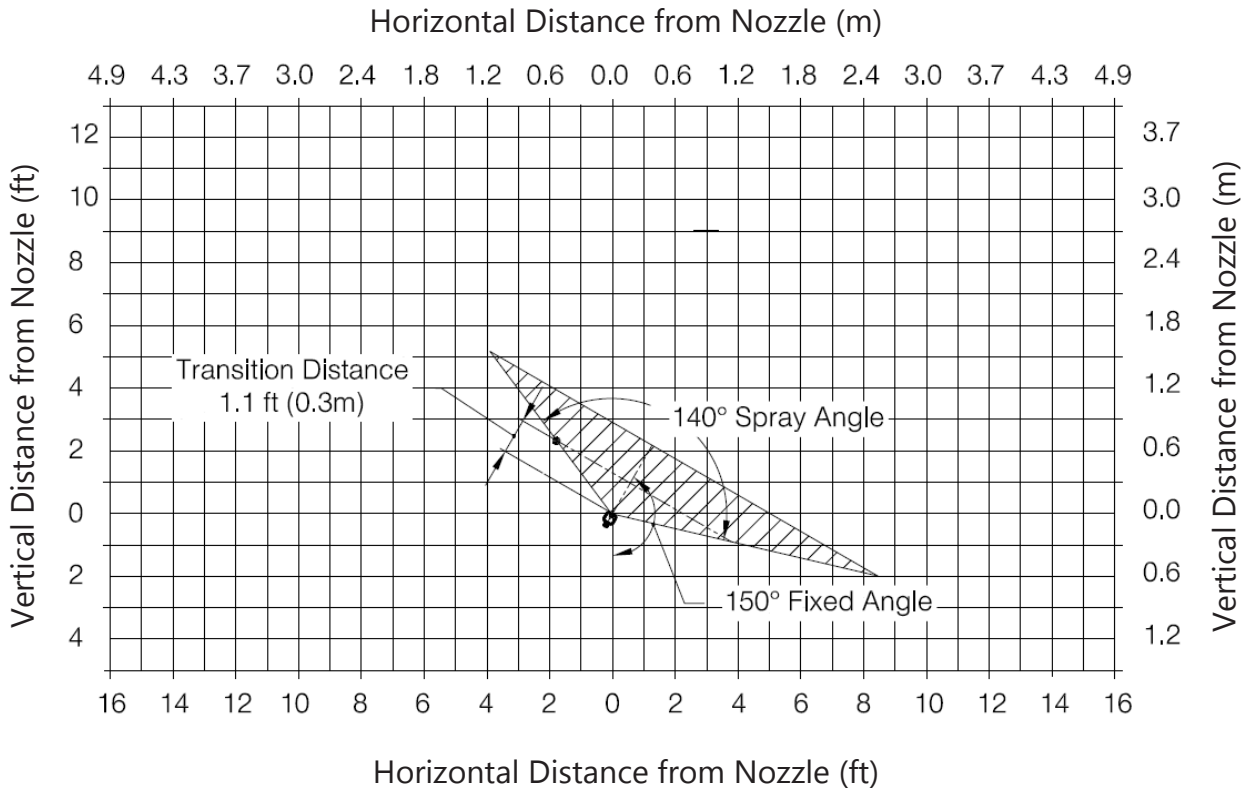


Figure 64 - 160° Spray Nozzle set at 150° Fixed Angle

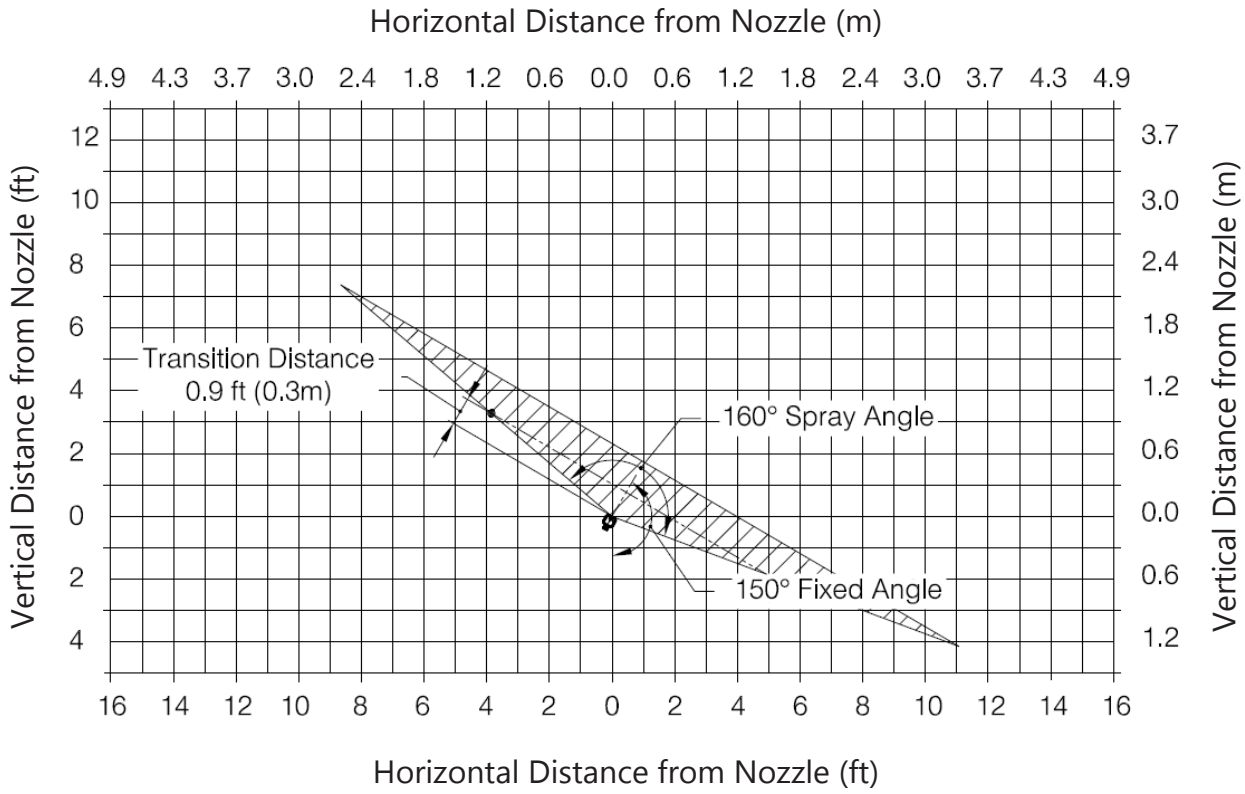


Figure 65 - 180° Spray Nozzle set at 150° Fixed Angle

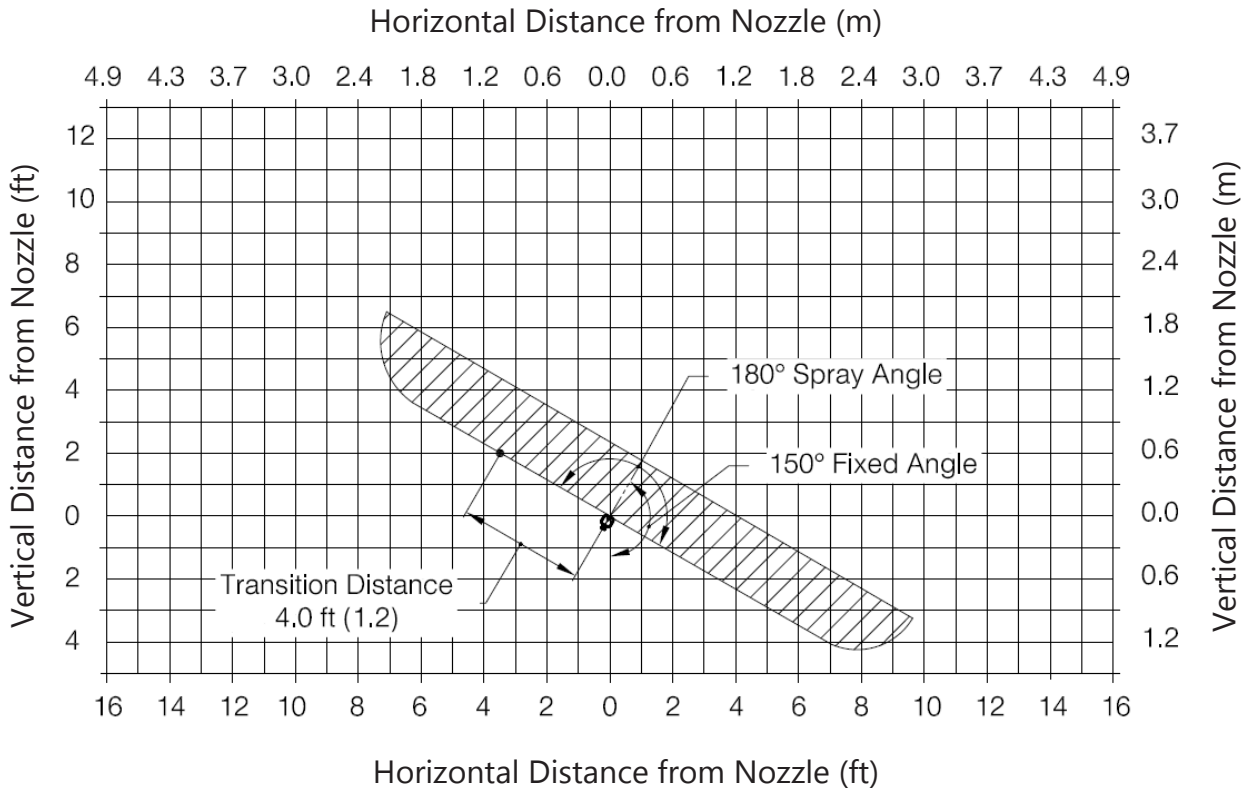


Figure 66 - 65º Spray Nozzle set at 180º Fixed Angle

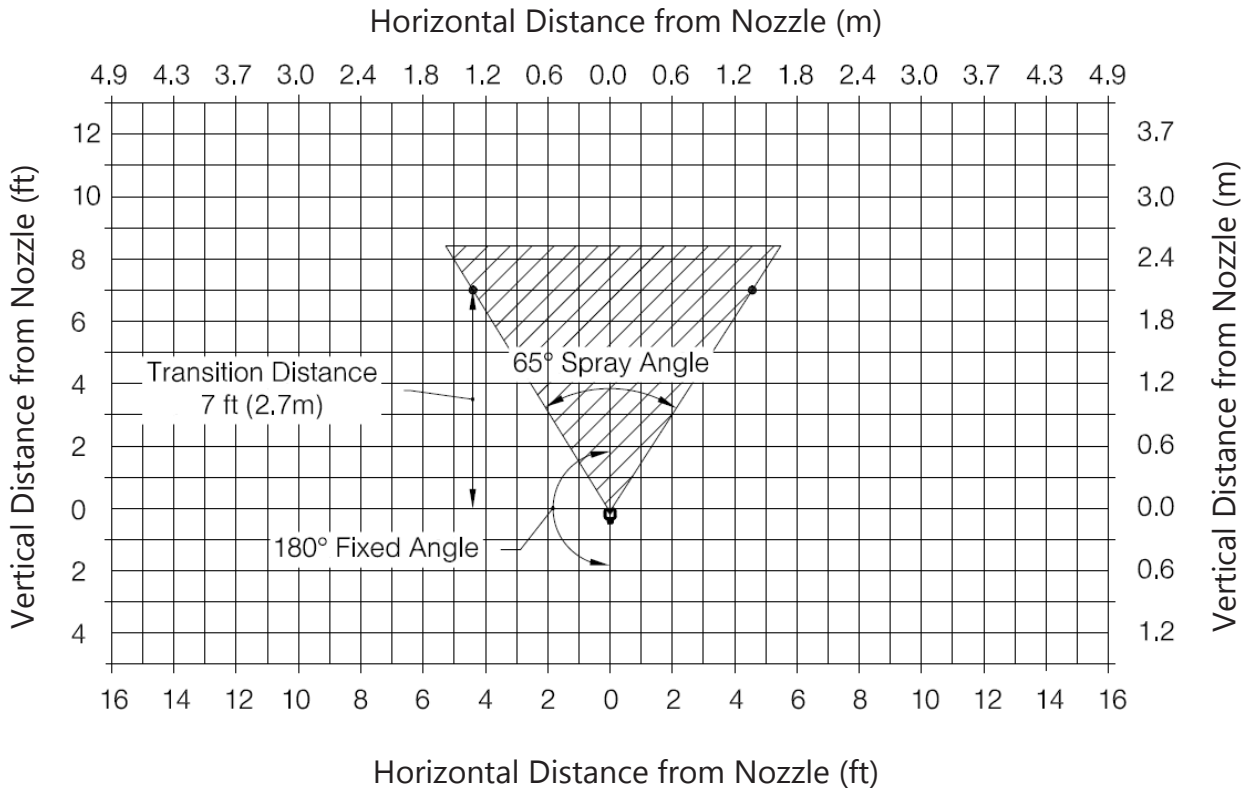


Figure 67 - 80º Spray Nozzle set at 180º Fixed Angle

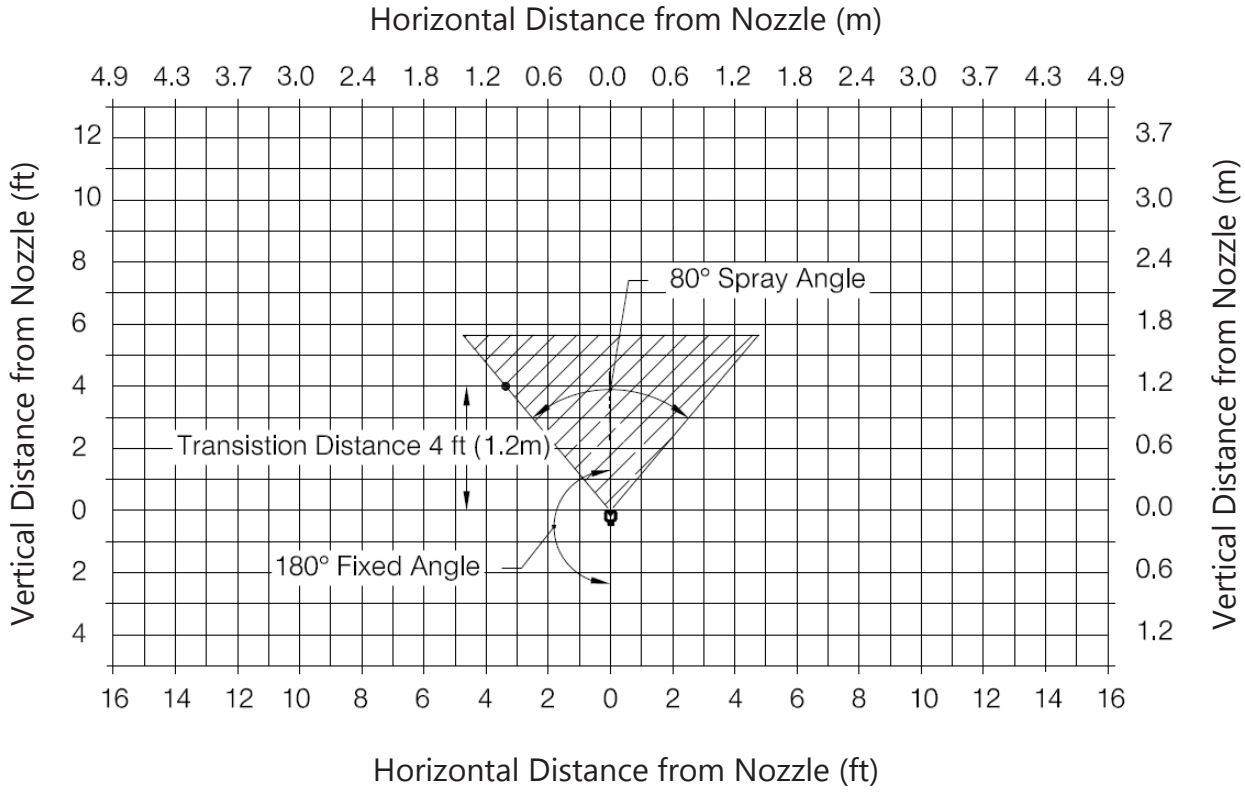


Figure 68 - 95° Spray Nozzle set at 180° Fixed Angle

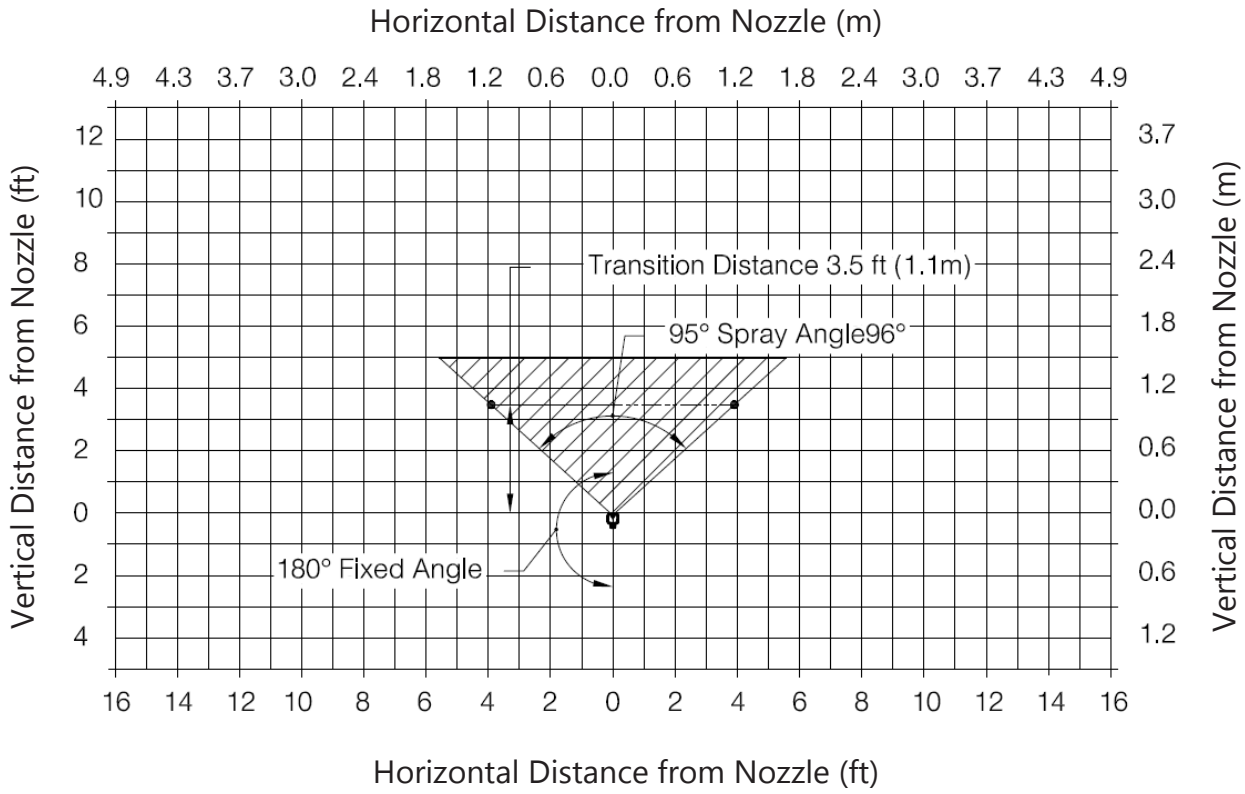


Figure 69 - 110° Spray Nozzle set at 180° Fixed Angle

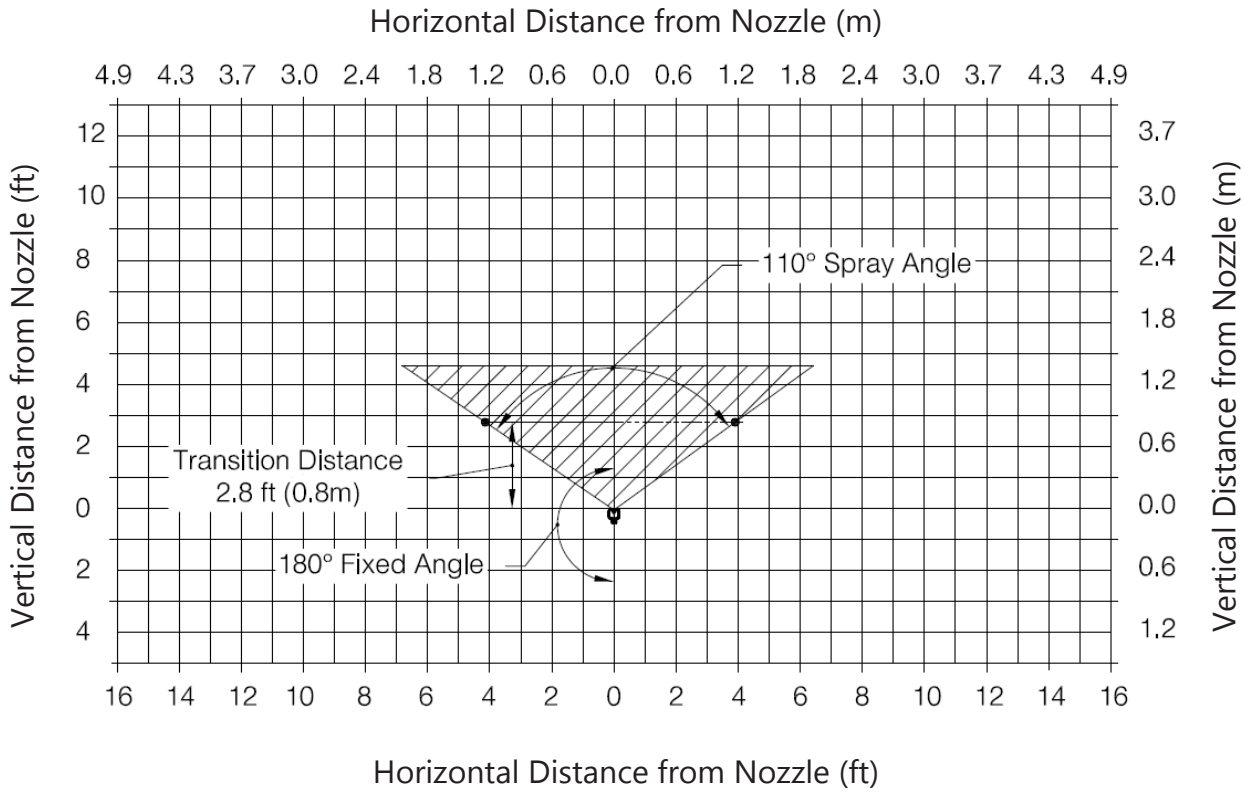


Figure 70 - 125º Spray Nozzle set at 180º Fixed Angle

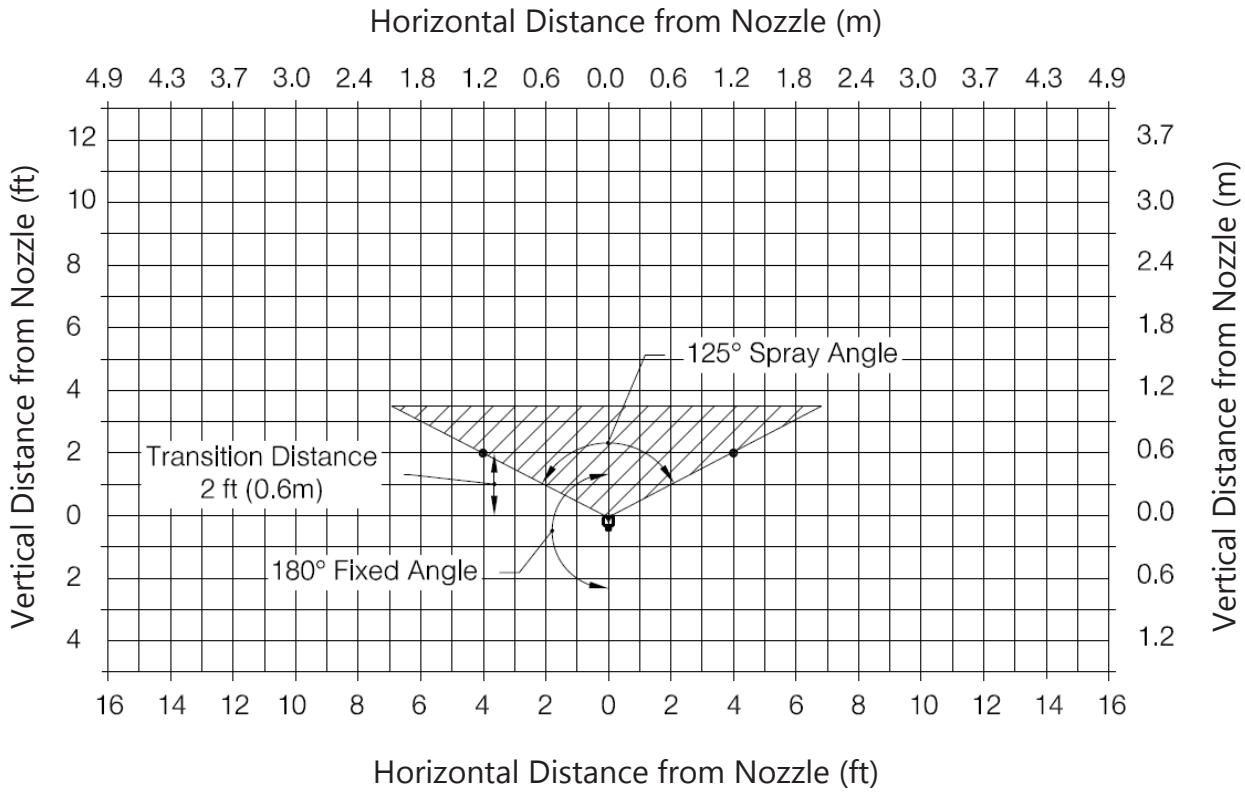


Figure 71 - 140º Spray Nozzle set at 180º Fixed Angle

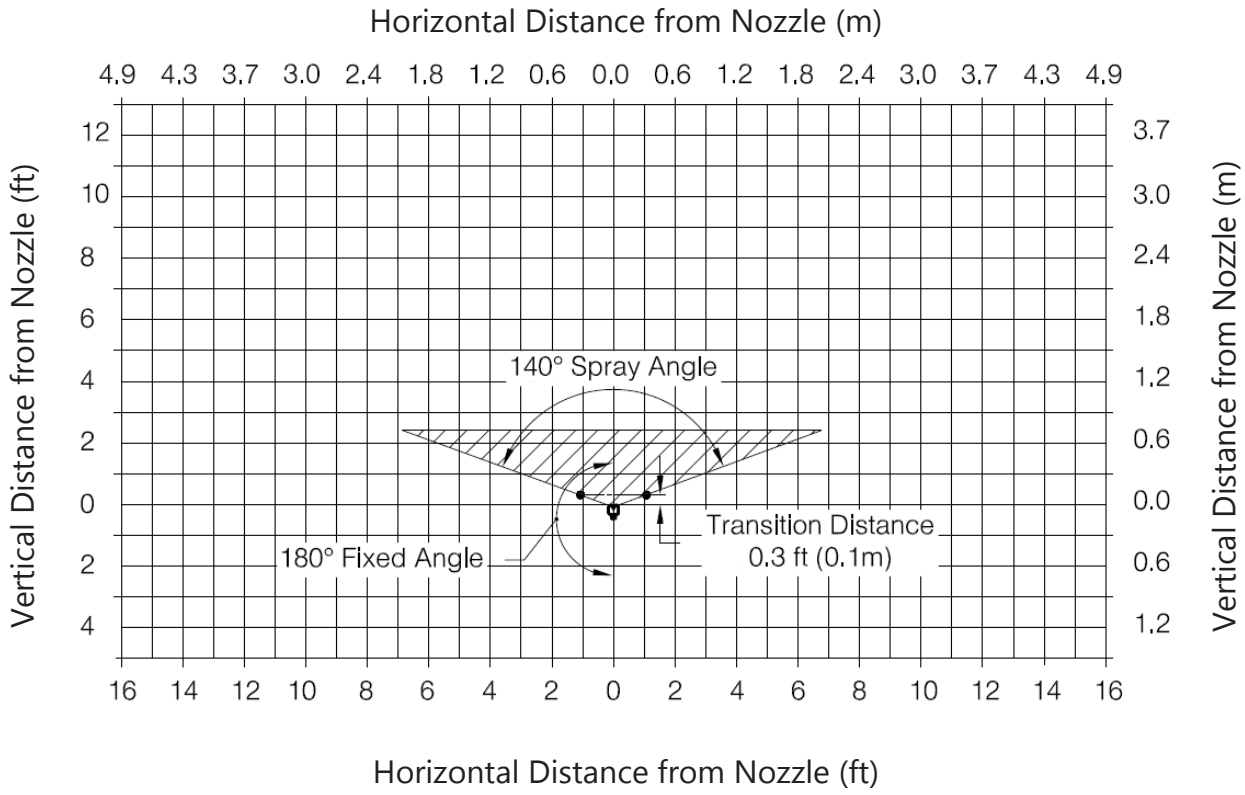


Figure 72 - 160° Spray Nozzle set at 180° Fixed Angle

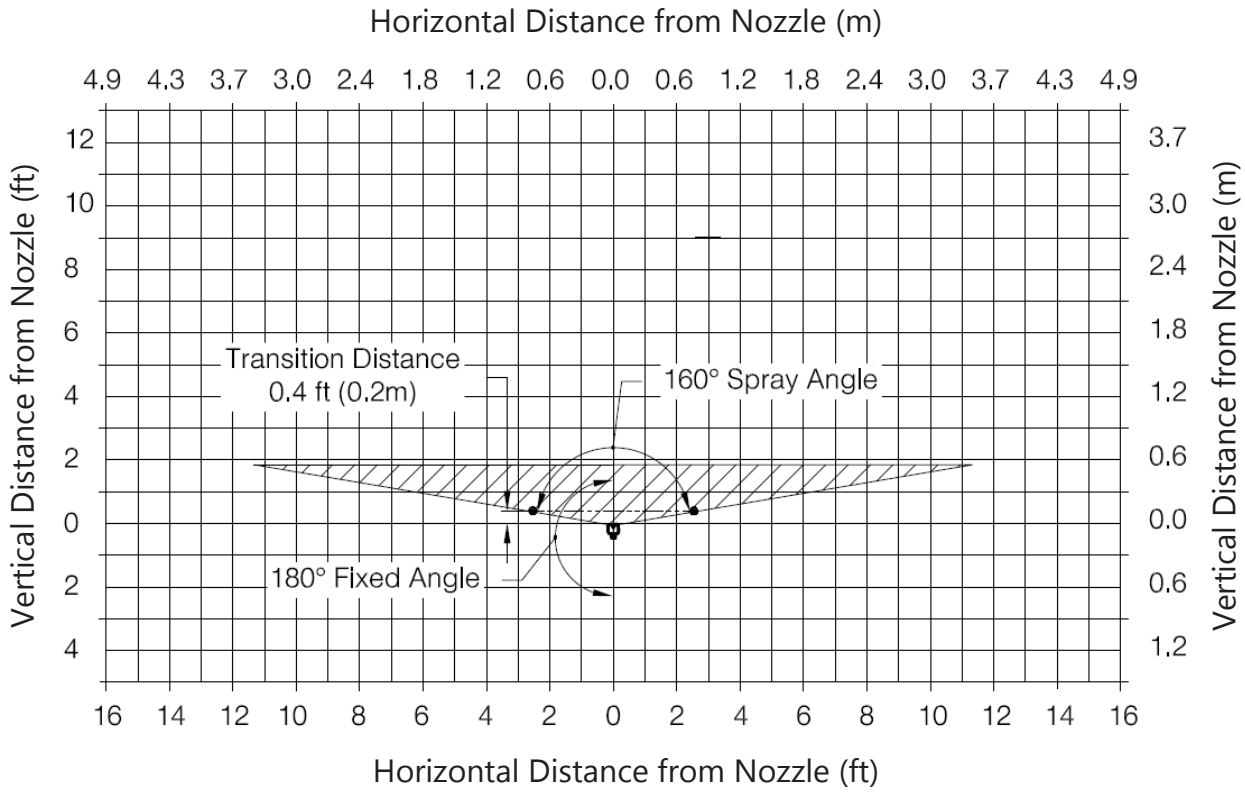
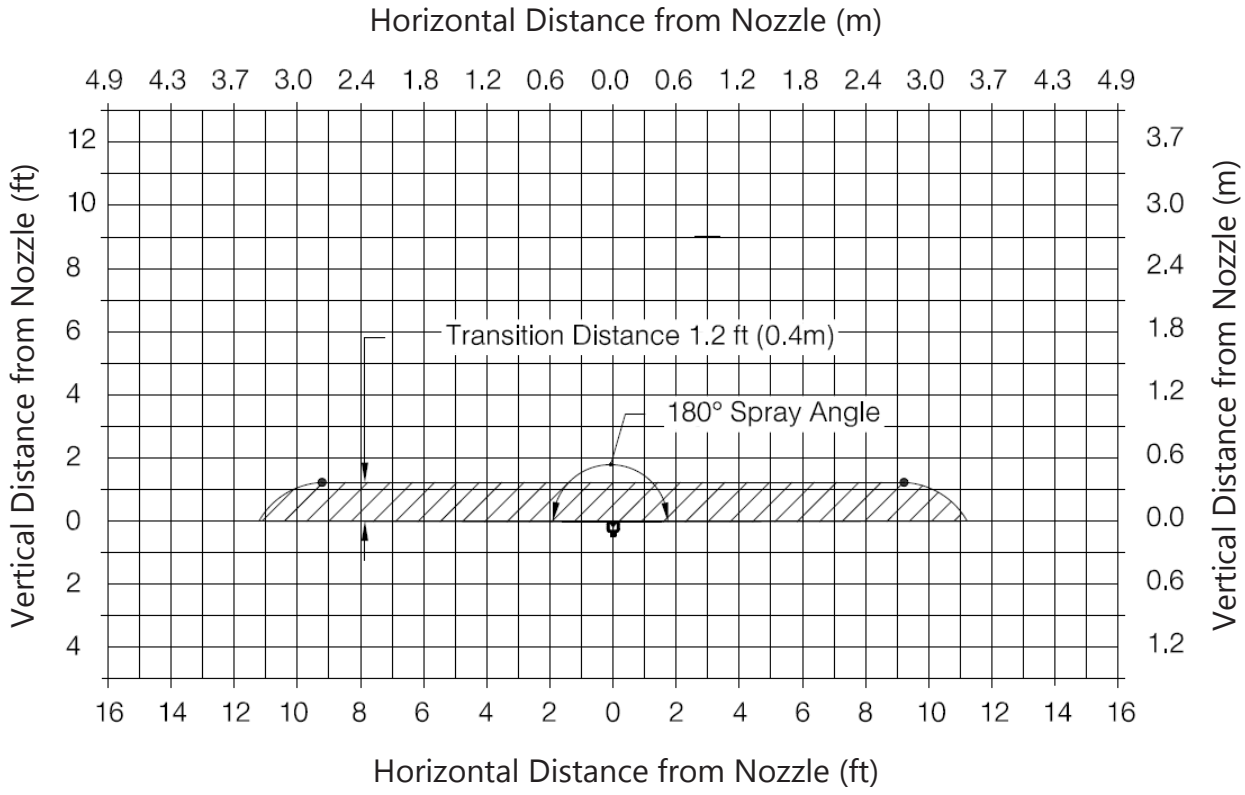


Figure 73 - 180° Spray Nozzle set at 180° Fixed Angle



INSTALLATION

Model MV Medium Velocity series spray nozzles are intended to be installed in accordance with NFPA standards and the requirements of applicable authorities having jurisdiction.

Model MV series spray nozzles must be installed with the Reliable Model W2 installation wrench. Any other wrench may damage the nozzle. Recommended installation torque is 11 to 24 N·m. Do not tighten nozzles over the maximum recommended installation torque may cause impairment of the nozzle.
Note: NFPA 15 requires a main pipeline strainer for all systems utilizing nozzles with waterways less than 9,5mm and for any system where the water is likely to contain obstructive material.

MAINTENANCE

Reliable Model MV series nozzles should be inspected and the sprinkler system maintained in accordance with NFPA 25, as well as the requirements of any Authorities Having Jurisdiction.

Any system maintenance or testing that involves placing a system out of service may eliminate the fire protection system. Notify any required authorities having jurisdiction and implement appropriate precautions prior to proceeding.

Prior to installation, nozzles should remain in the original cartons and packaging until used. This will minimize the potential for damage to nozzles that could cause improper operation or non-operation.

A stock of spare nozzles should be maintained to allow quick replacement of damaged nozzles. Failure to properly maintain nozzles may result in improper or impaired water distribution during a fire event.

Model W2 Wrench



Ordering Information: Model MV Medium Velocity Series Spray Nozzles

Specify:

Nozzle:
Model MV Nozzle.
Finish.
K-factor.
Nozzle Angle.
Blow-off Plug (optional).

Wrench
Model W2.

4EØ YY KK AAA

Finish YY	K-factor l/min/bar$^{1/2}$	Nozzle Angle AAA
11 = Brass	12 = 17	065 = 65°
43 = ENT	18 = 26	080 = 85°
	23 = 33	095 = 95°
	30 = 43	110 = 110°
	41 = 59	125 = 125°
	56 = 80	140 = 140°
	72 =104	160 = 160°
		180 = 180°

GUARANTEE