

Reliable®

Model MV Medium Velocity Directional Spray Nozzles

cULus Listed

Features

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

Product Description

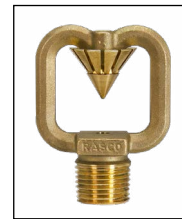
The Reliable Model MV Medium Velocity Water Spray Nozzles are cULus Listed non-automatic, open nozzles, designed for directional spray applications in fixed fire protection systems. The nozzle has an internal deflector that discharges water in a directional cone shaped pattern and produces a small droplet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

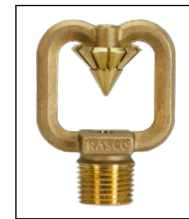
Model MV nozzles are available in unfinished brass or Electroless Nickel PTFE (ENT) plating. The nozzles are cULus Listed as corrosion resistant when ordered with ENT finish. Optional blow-off plugs can be used to prevent foreign materials from entering the water way of the nozzle. Blow-off plugs have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

Document Guide

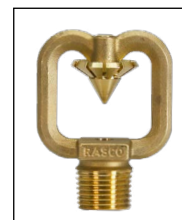
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65° Spray Nozzle



80° Spray Nozzle



95° Spray Nozzle



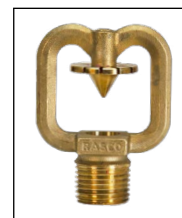
110° Spray Nozzle



125° Spray Nozzle



140° Spray Nozzle



160° Spray Nozzle



180° Spray Nozzle

Model MV Summary

Table A

Model	Material	Finish	Available K-factor (Nominal) gpm/psi ^{1/2} (L/min/bar ^{1/2})	Orifice Diameter in. (mm)	Available Nozzle Angle
MV	Brass	Brass (Unfinished) ENT	1.2 (17)	.202 (5.13)	65°
			1.8 (26)	.250 (6.35)	80°
			2.3 (33)	.282 (7.16)	95°
			3.0 (43)	.325 (8.26)	110°
			4.1 (59)	.380 (9.65)	125°
			5.6 (80)	.446 (11.32)	140°
			7.2 (104)	.503 (12.78)	160°
					180°

Note: Each nozzle size (K-factor) is available in all nozzle deflector angles.

Model MV Medium Velocity Water Spray Nozzle

Technical Specifications

Style: Open Nozzle

Threads: ½" NPT or ISO 7-1 R1/2

Max. Working Pressure: 175psi (12bar)

Nominal K-factor, gpm/psi^{1/2} (L/min/bar^{1/2})

1.2 (17), 1.8 (26), 2.3 (33), 3.0 (43), 4.1 (59), 5.6 (80), 7.2 (104)

Nozzle Angle

65°, 80°, 95°, 110°, 125°, 140°, 160°, 180°

Material Specifications

Frame: Brass

Deflector Pin: Brass

Deflector: Brass

Blow-off Plug: Elastomer

Finish

Brass (Unfinished), ENT

Accessories

Blow-off Plug

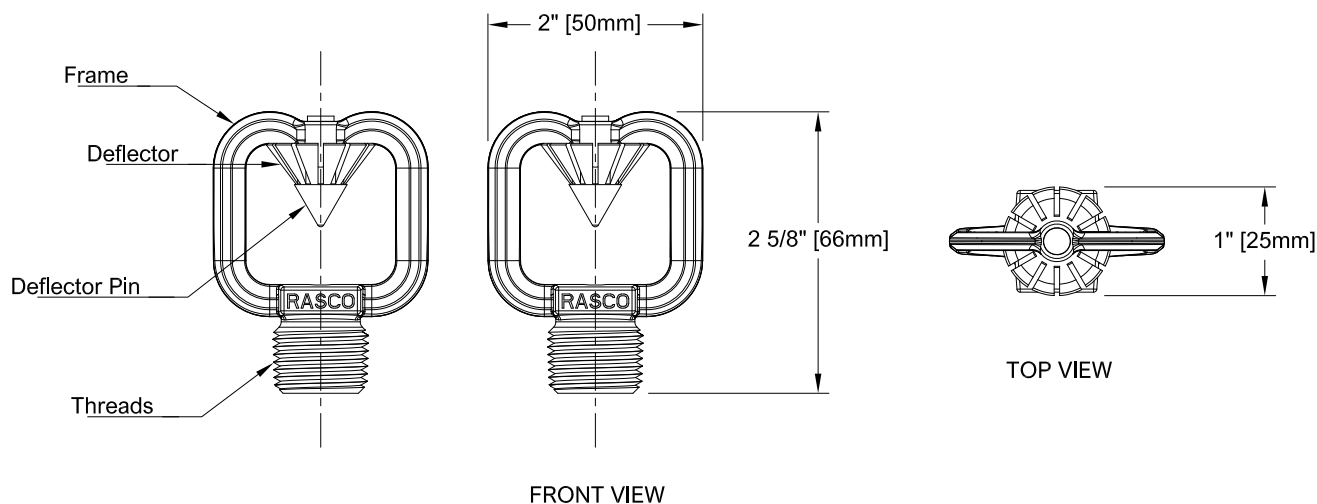
Listings & Approvals

UL Listed



Model MV Nozzle Components and Dimensions

Figure 1

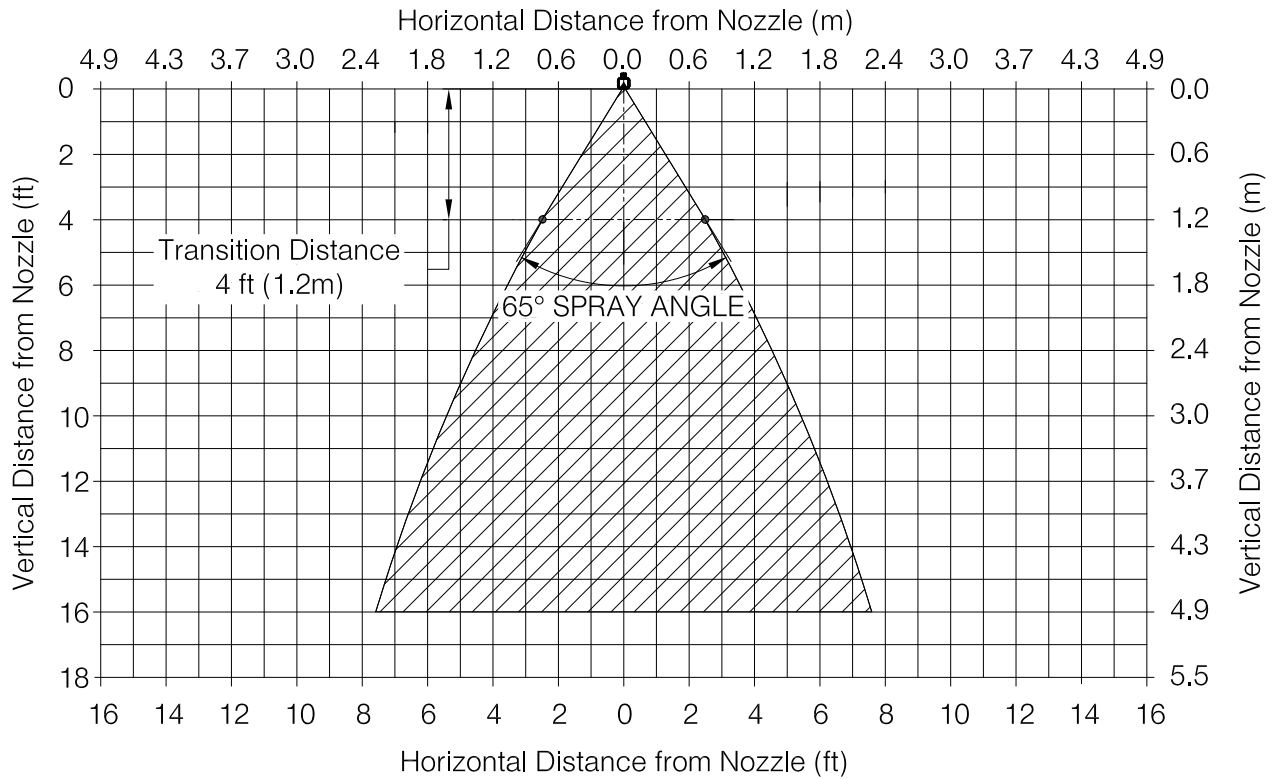


Notes for Figures 2 through 73 on the following pages:

- Nozzles may be oriented in any position necessary to protect the hazard.
- The graphs depict the spray pattern of eight (8) different nozzle angles when installed at nine (9) different fixed angles, with 0° fixed angle being straight down, 90° being horizontal, and 180° being straight up. It is assumed that the user will select the fixed angle first, and then select the appropriate nozzle angle.
- The spray pattern shown is for discharge pressures between 20 and 60 psi (1.4 and 4.1 bar) for all nozzle orifice sizes.
- 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.
- Use of the nozzle beyond the transition distance is permitted provided the shape of the coverage area is considered.
- 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.
- Obstructions affecting the spray pattern of the nozzle must also be considered.

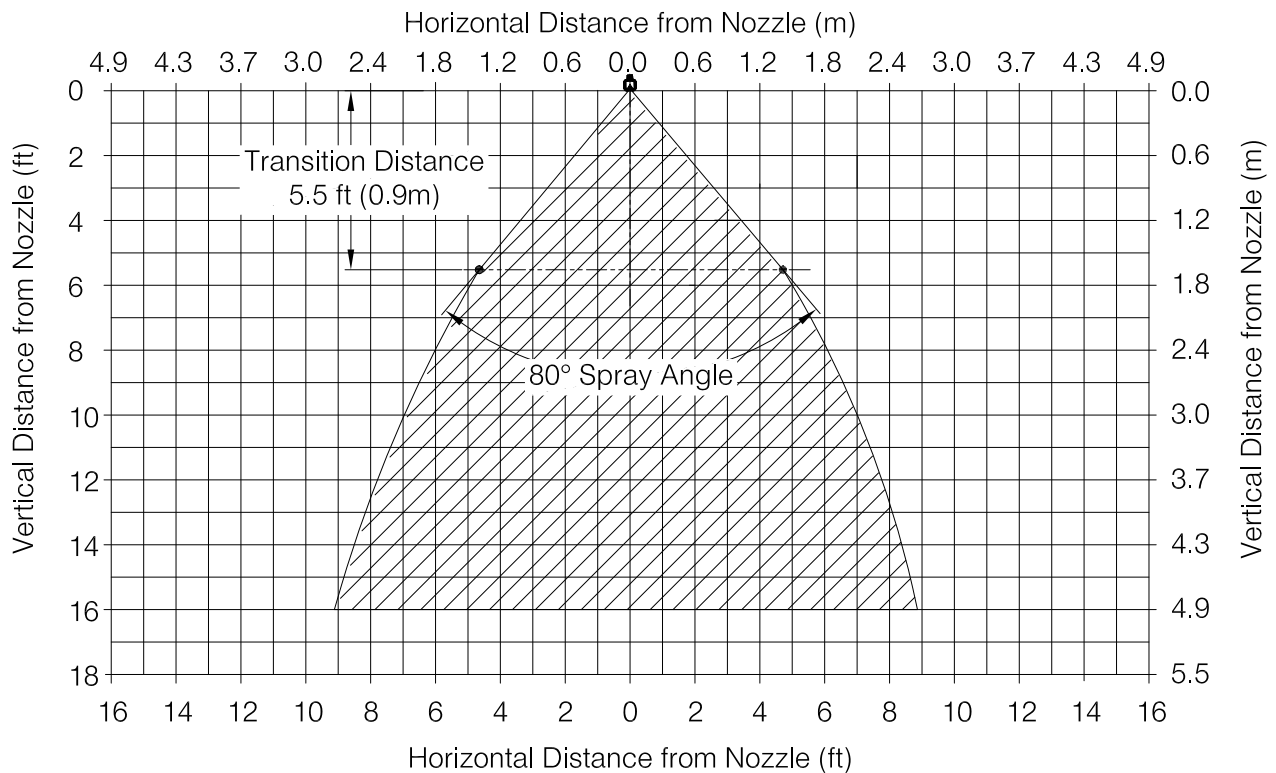
65° Spray Nozzle set at 0° Fixed Angle

Figure 2



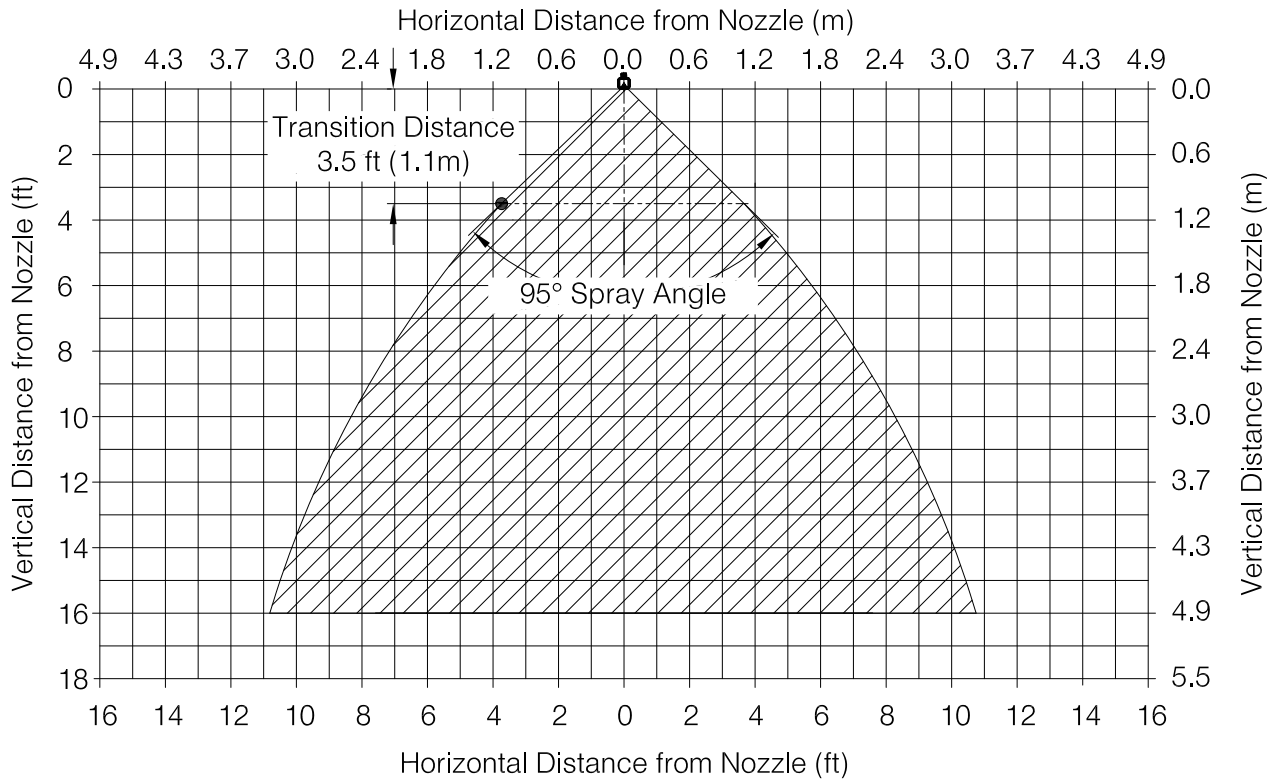
80° Spray Nozzle set at 0° Fixed Angle

Figure 3



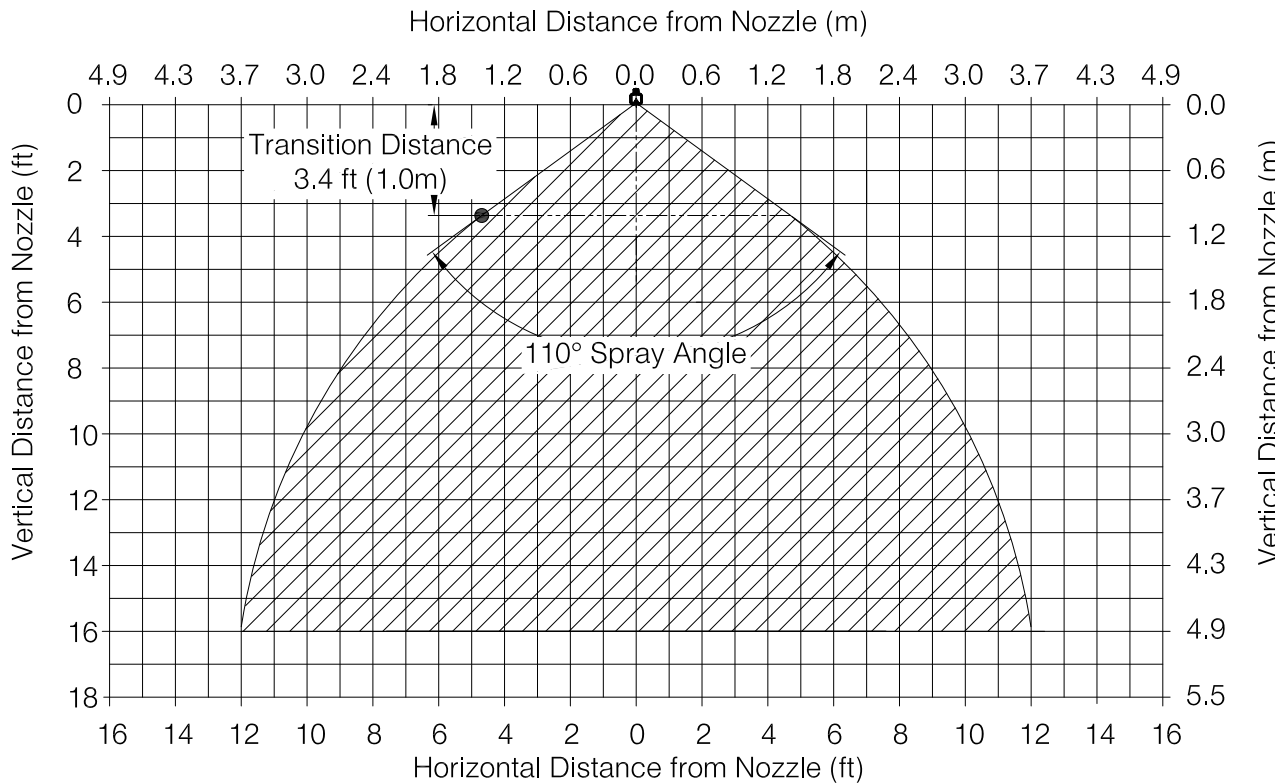
95° Spray Nozzle set at 0° Fixed Angle

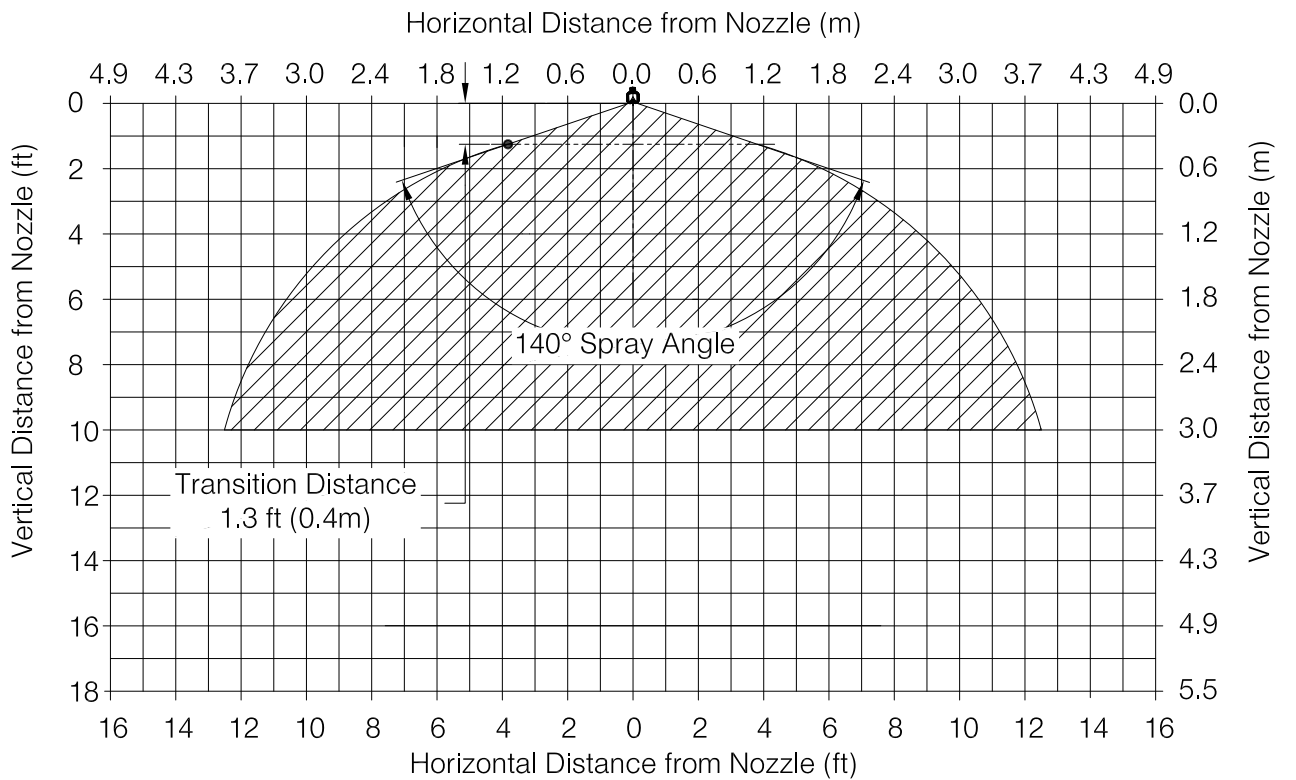
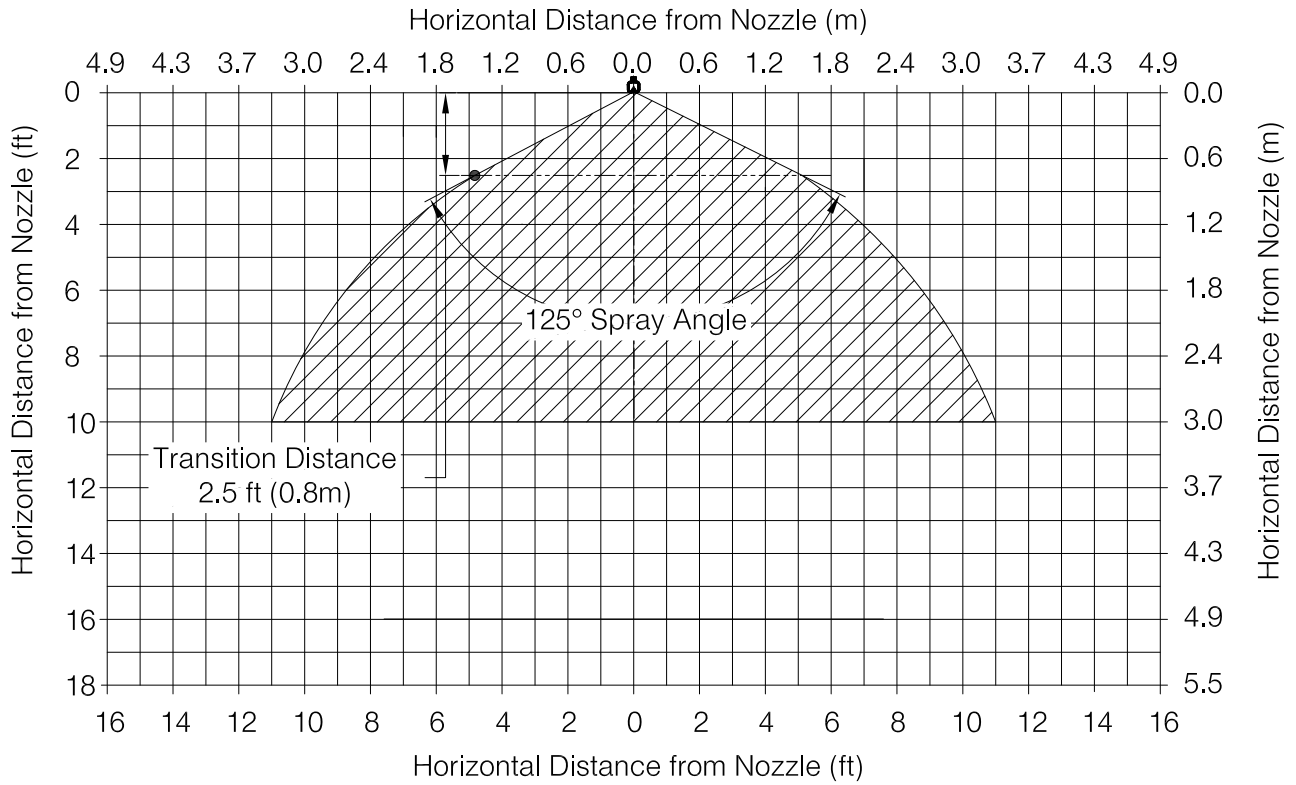
Figure 4

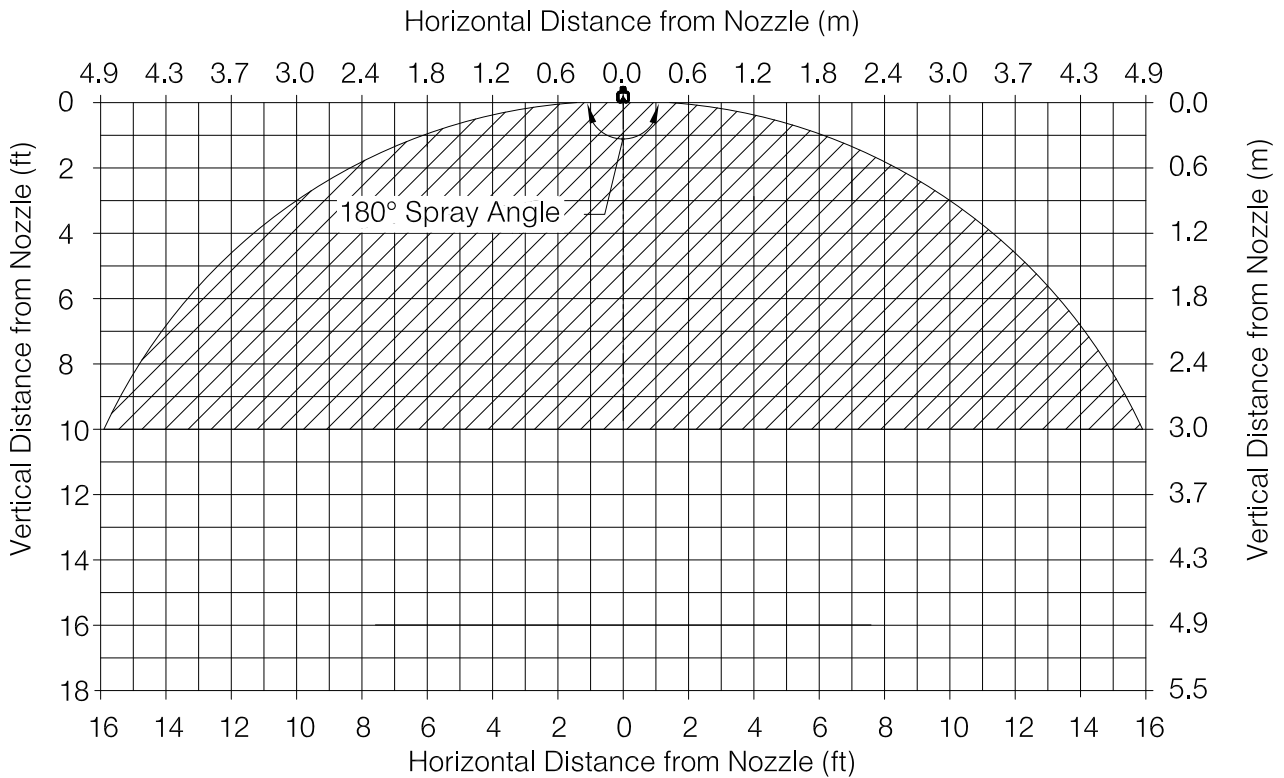
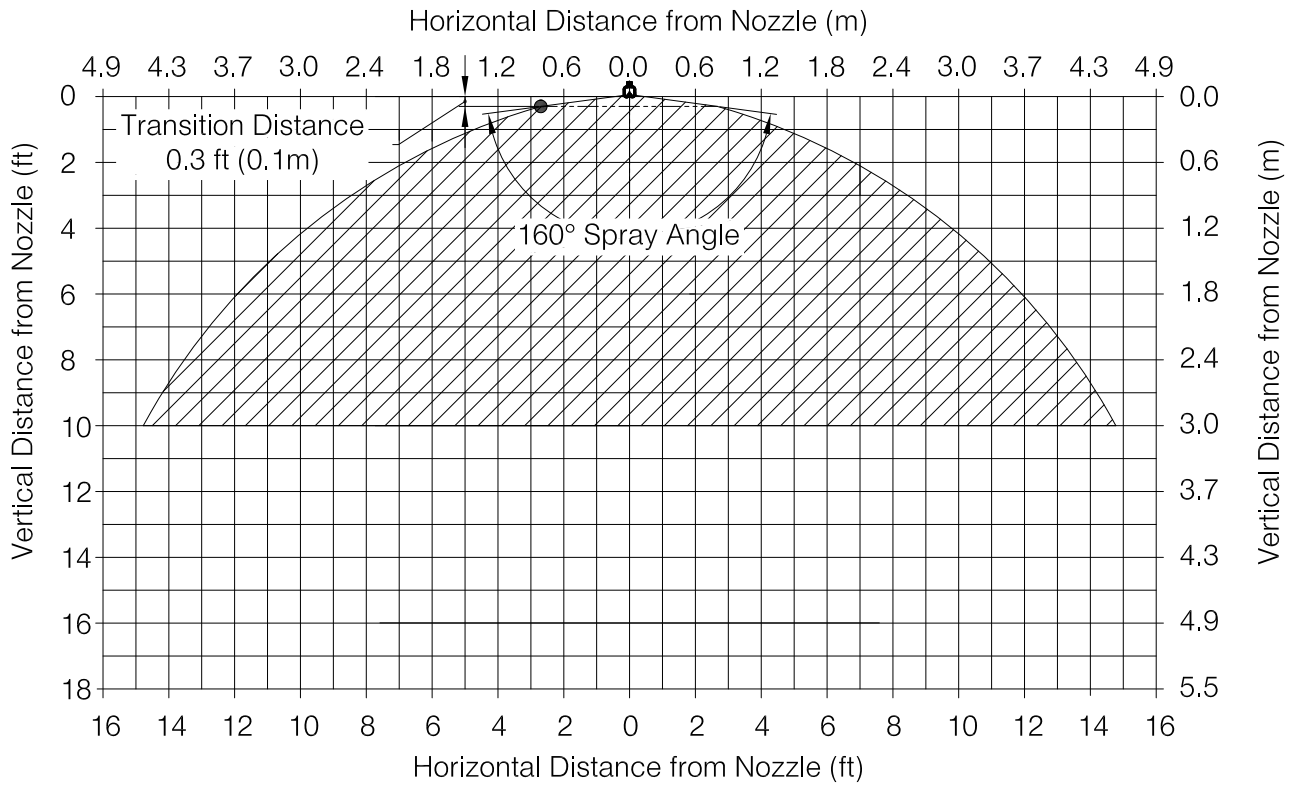


110° Spray Nozzle set at 0° Fixed Angle

Figure 5

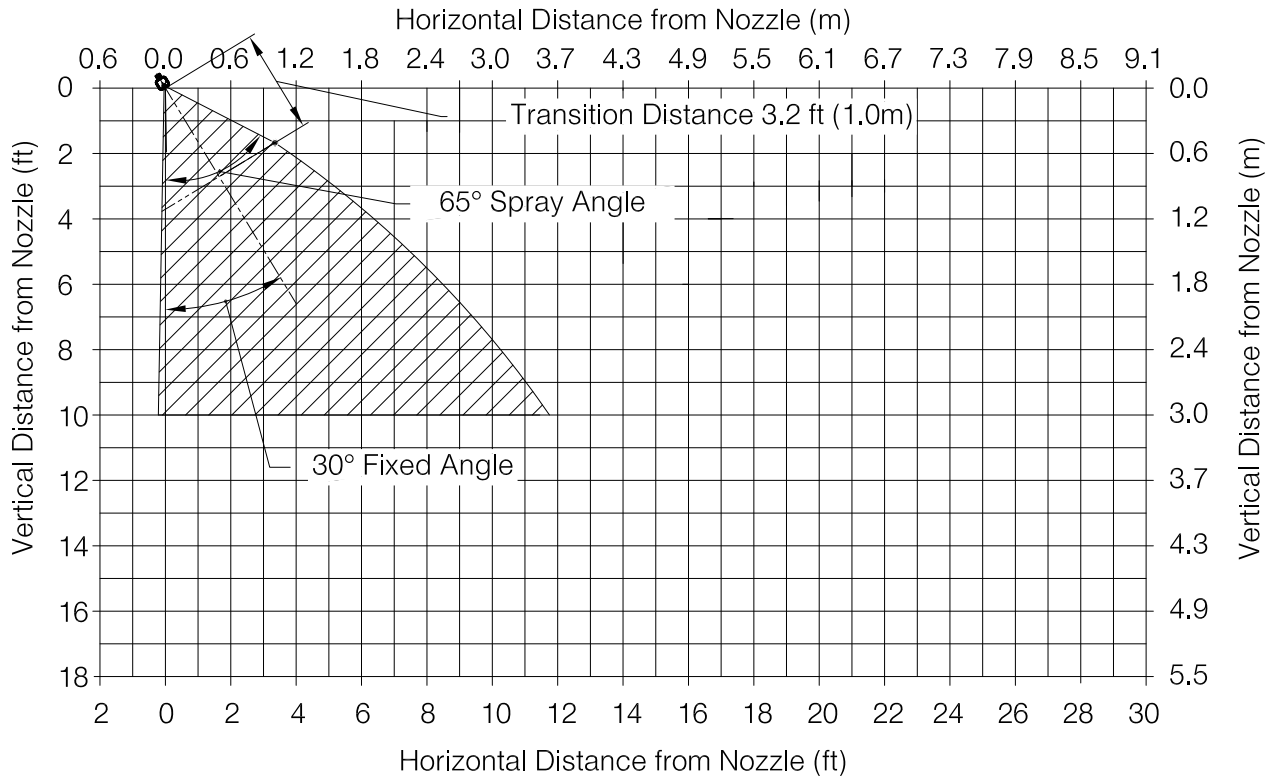






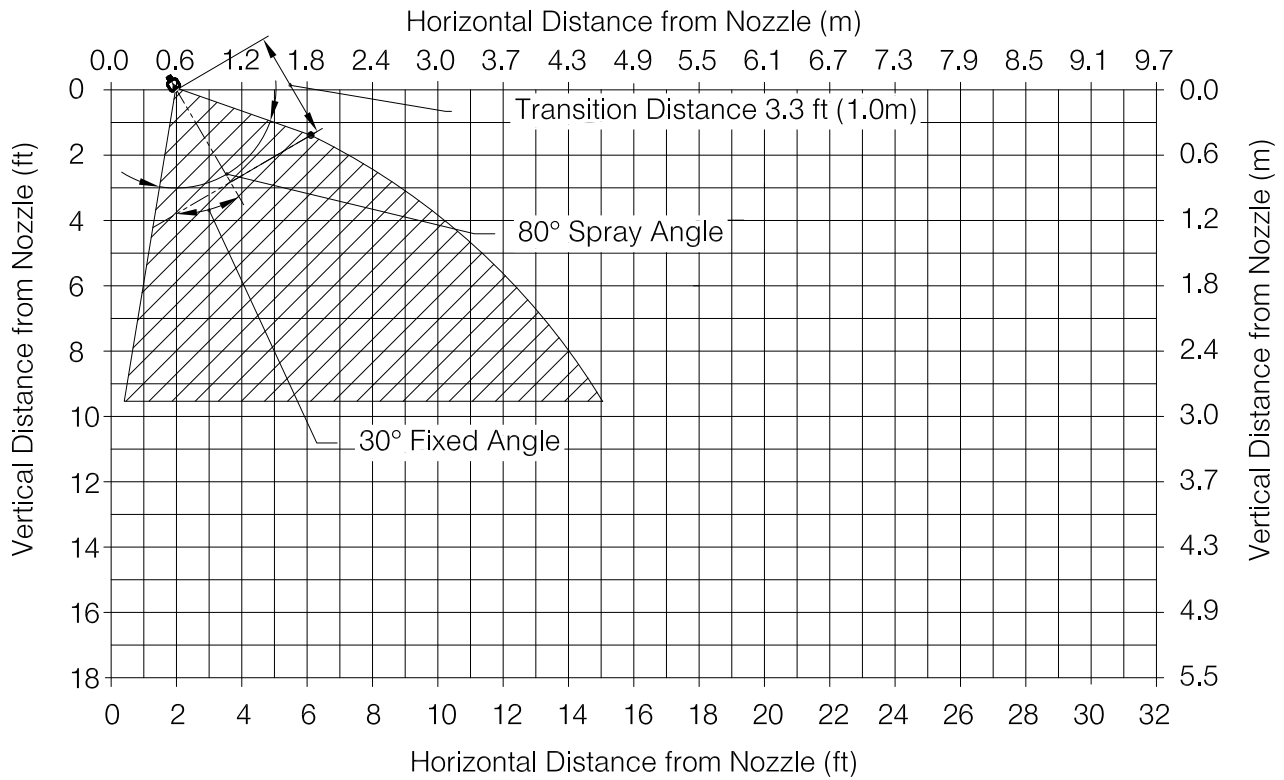
65° Spray Nozzle set at 30° Fixed Angle

Figure 10



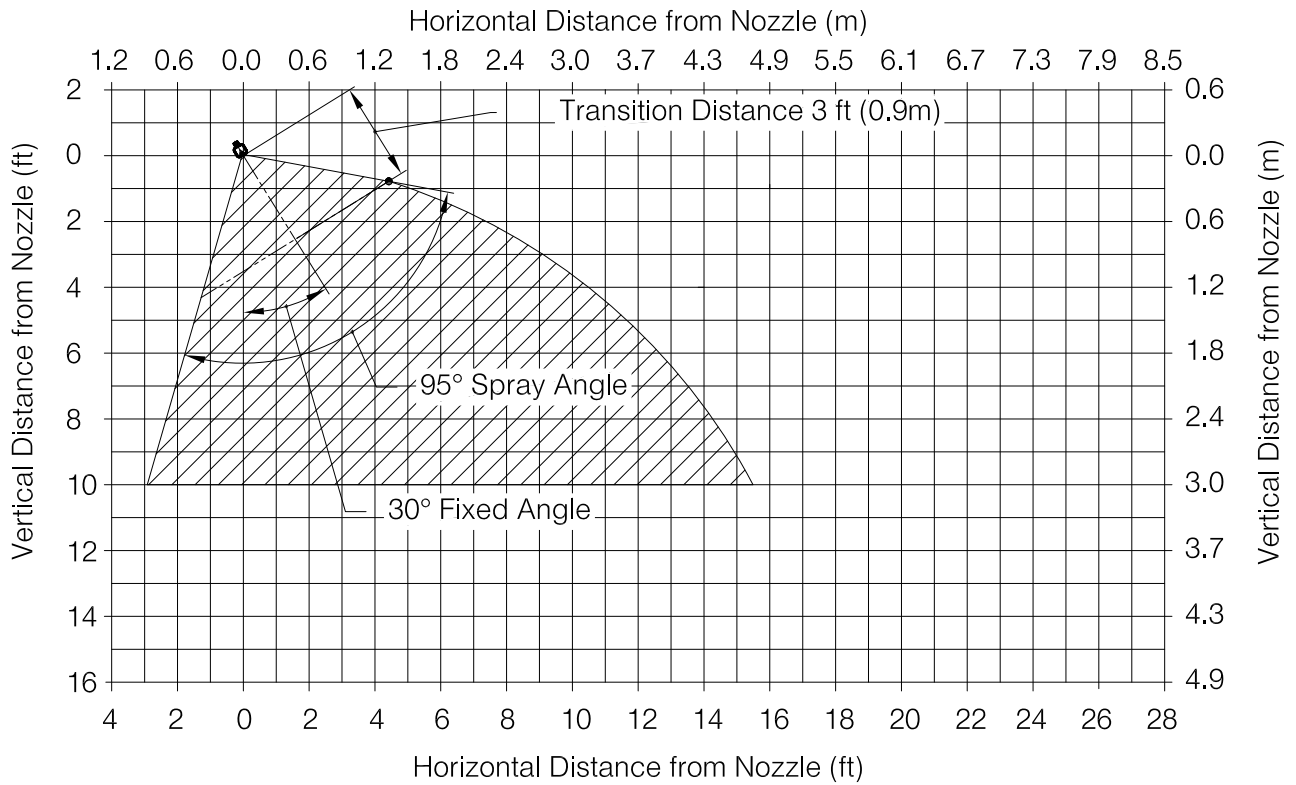
80° Spray Nozzle set at 30° Fixed Angle

Figure 11



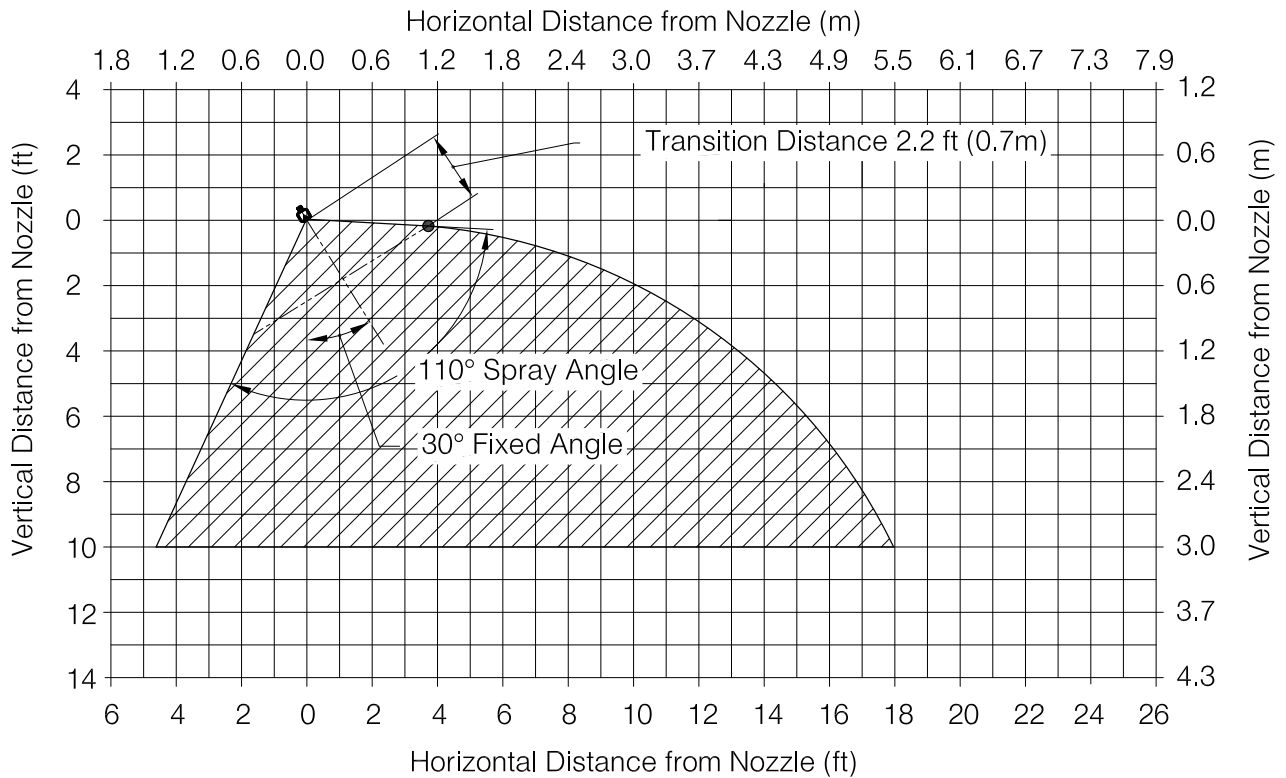
95° Spray Nozzle set at 30° Fixed Angle

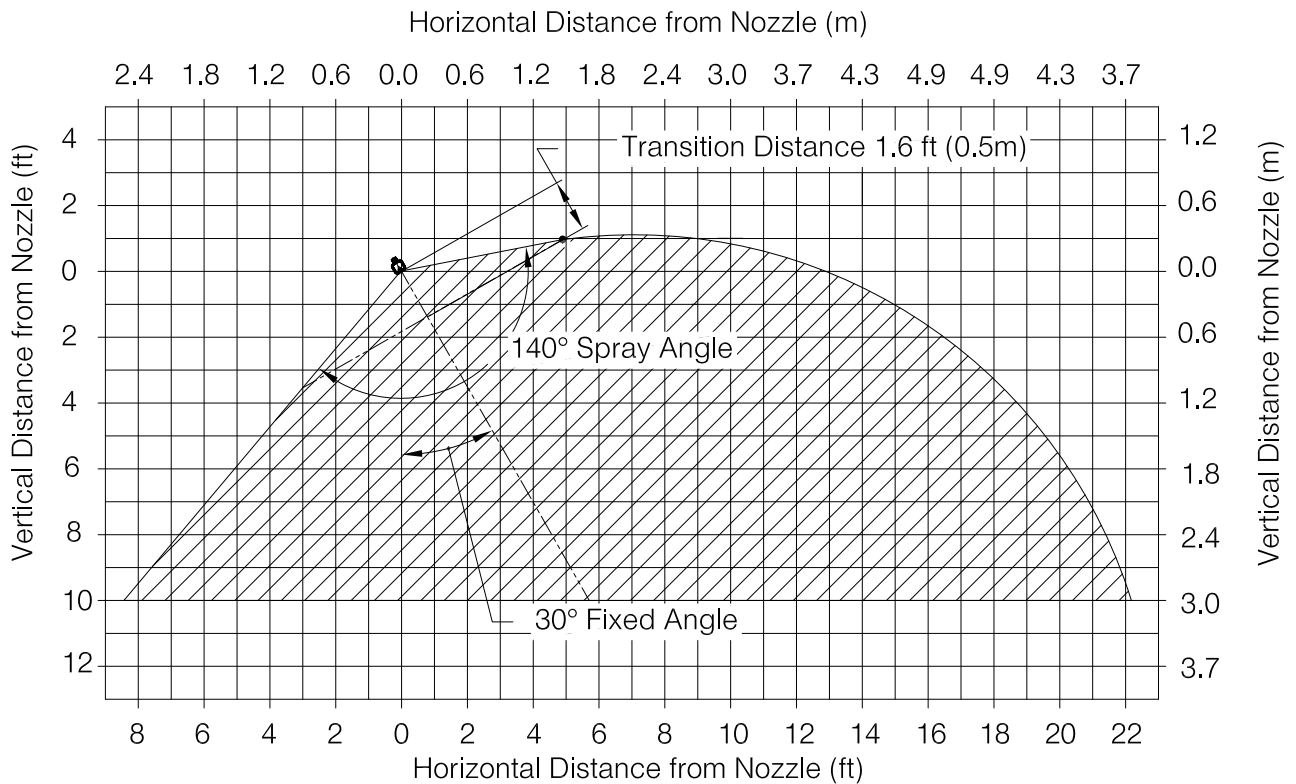
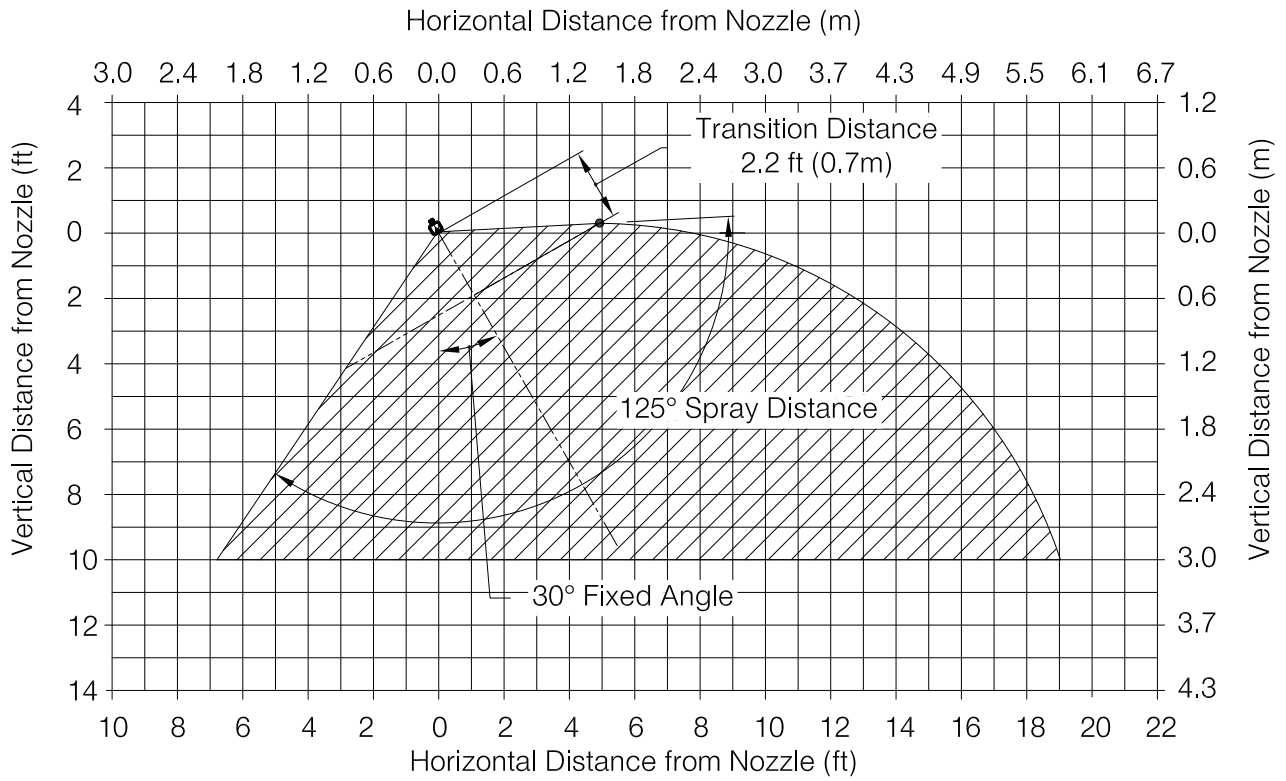
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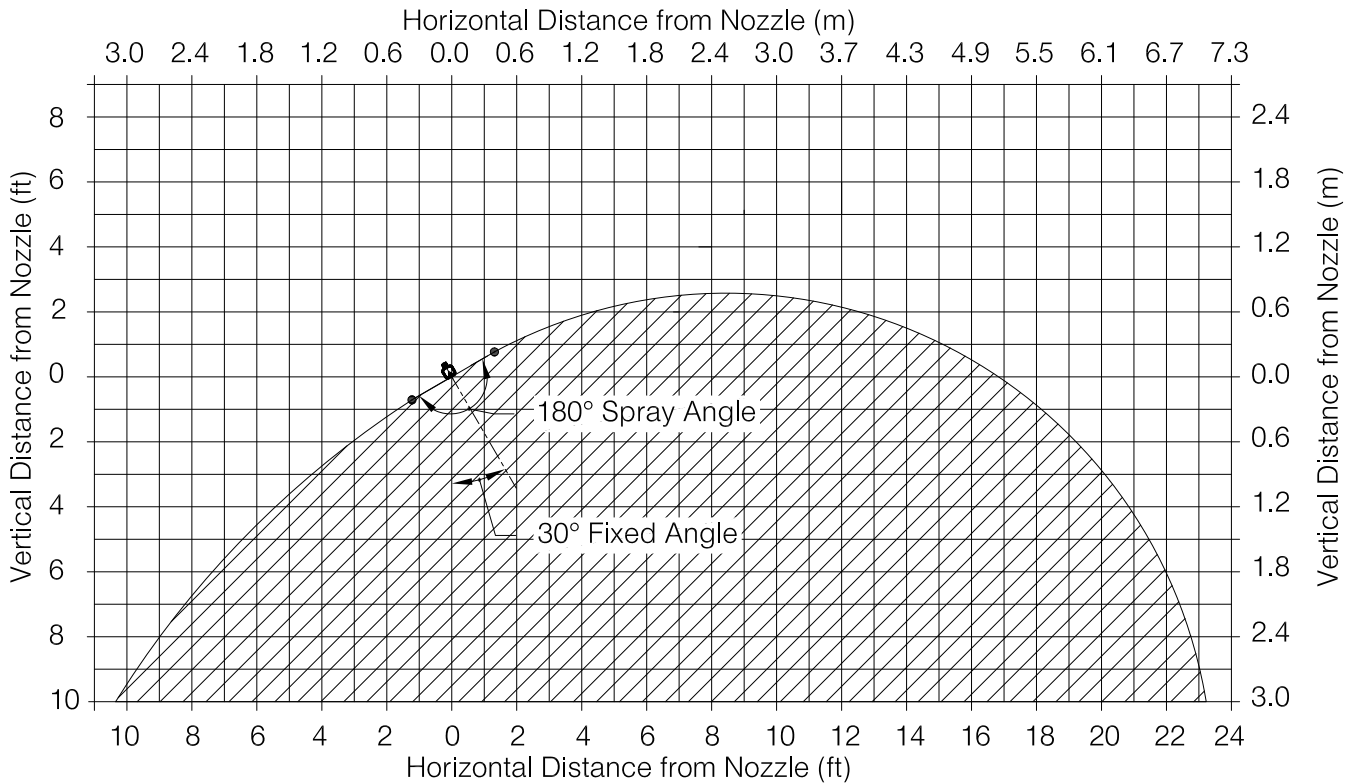
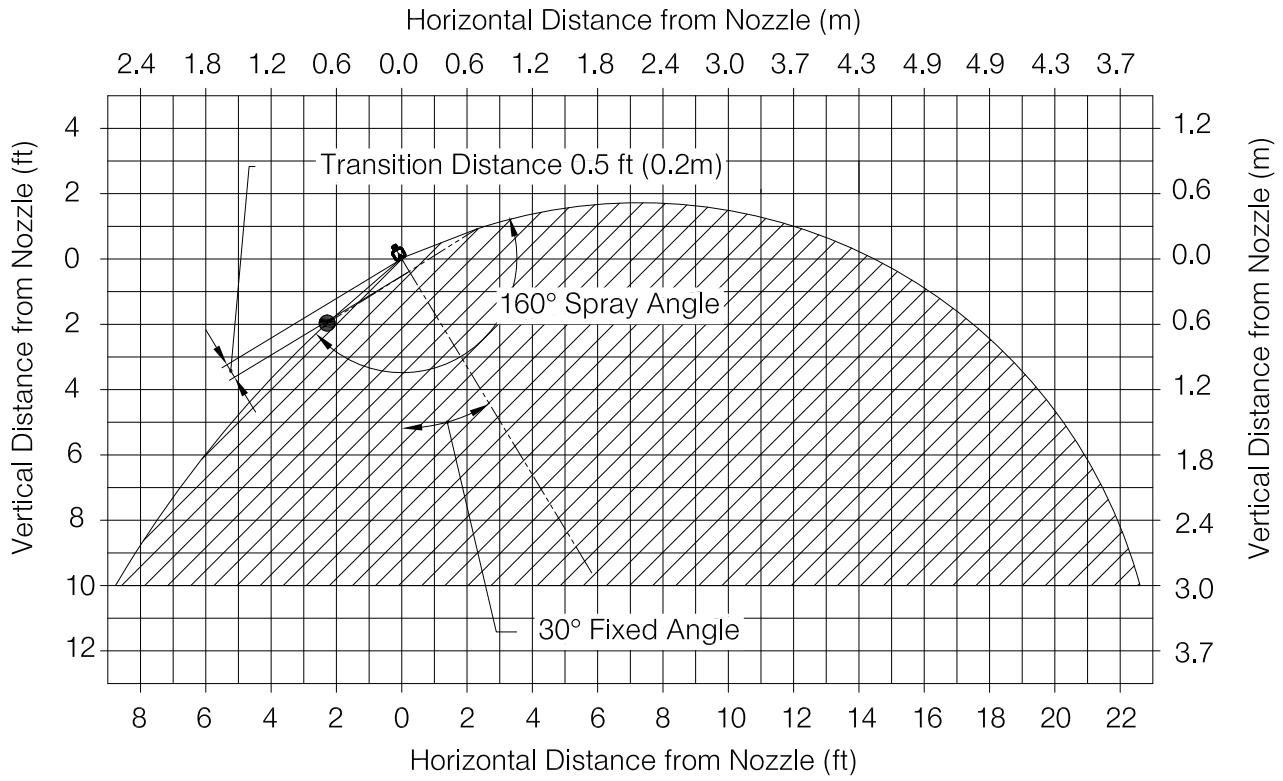


110° Spray Nozzle set at 30° Fixed Angle

Figure 13

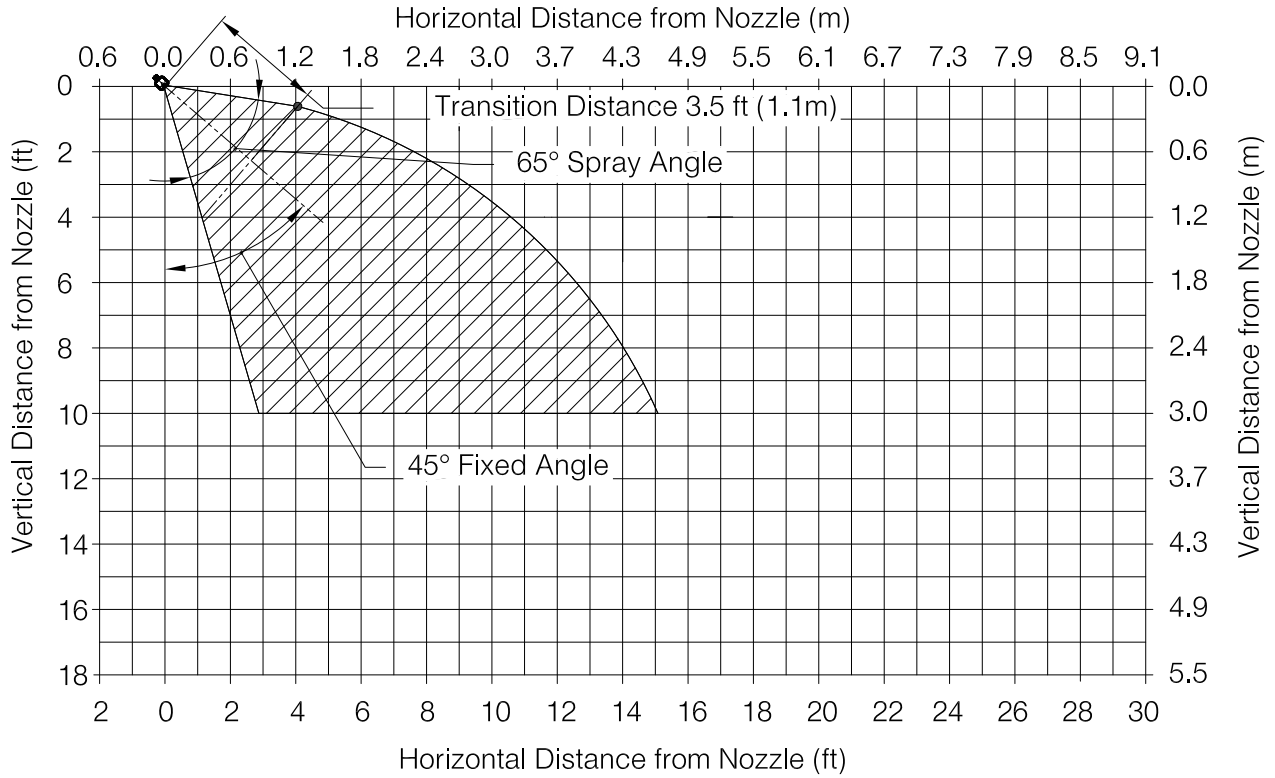






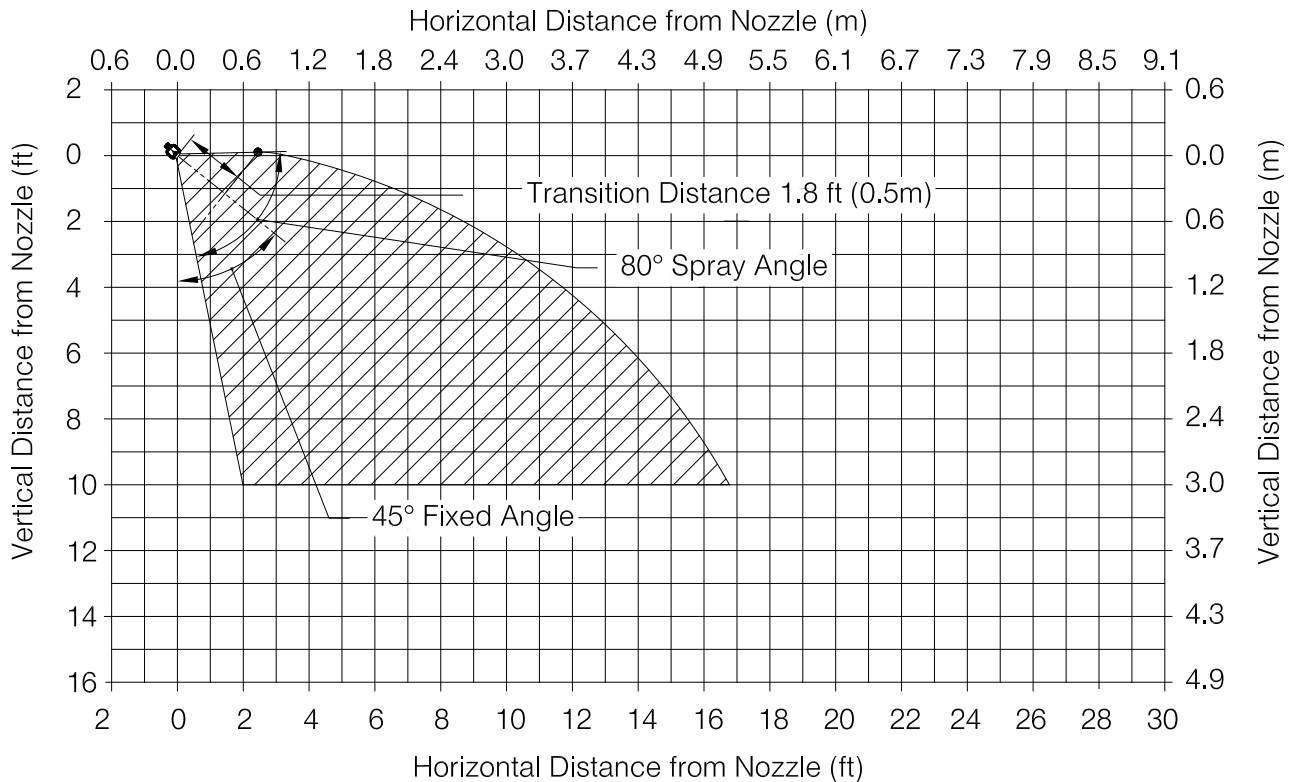
65° Spray Nozzle set at 45° Fixed Angle

Figure 18



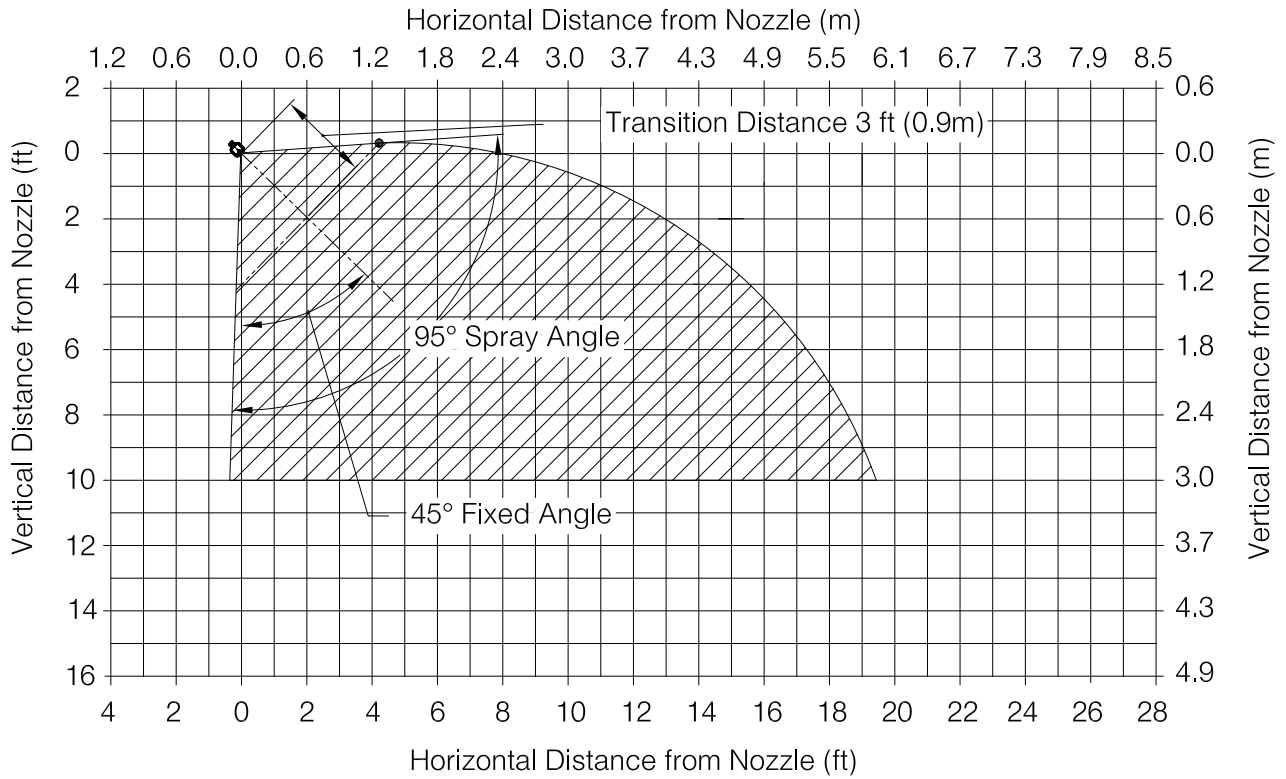
80° Spray Nozzle set at 45° Fixed Angle

Figure 19



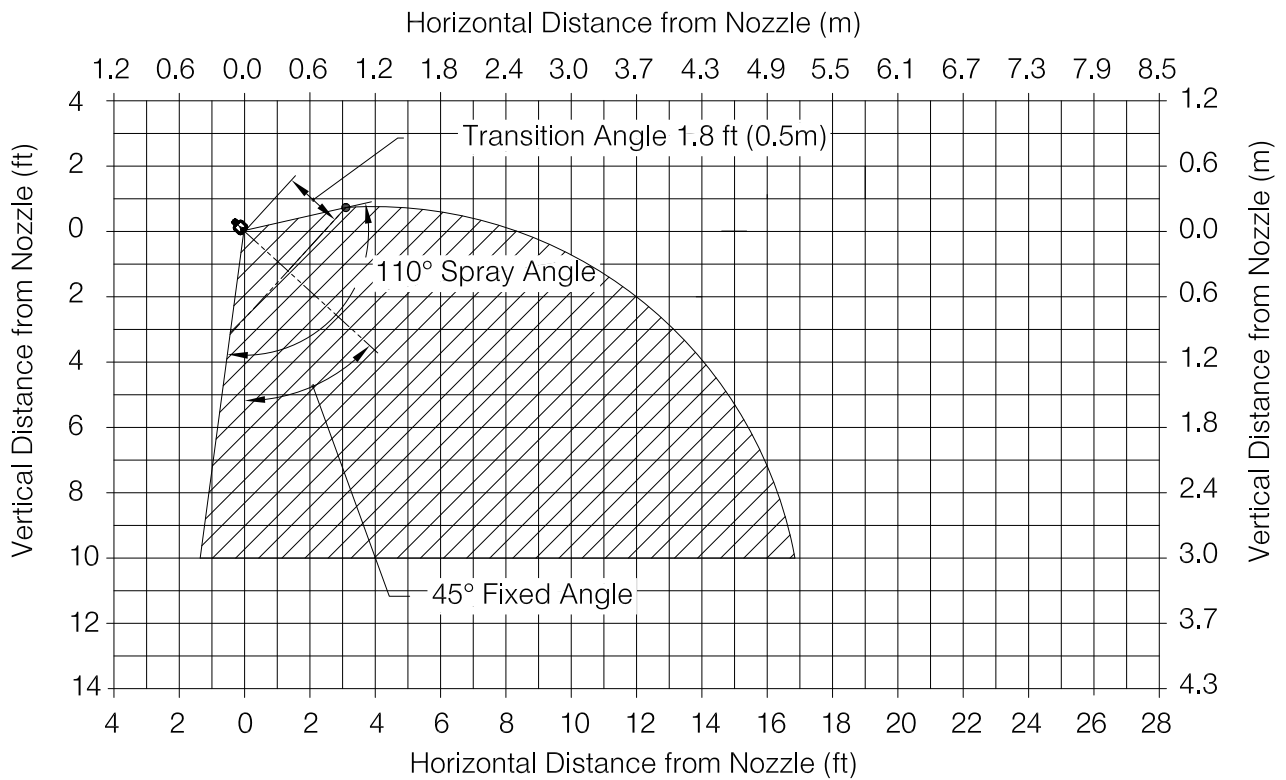
95° Spray Nozzle set at 45° Fixed Angle

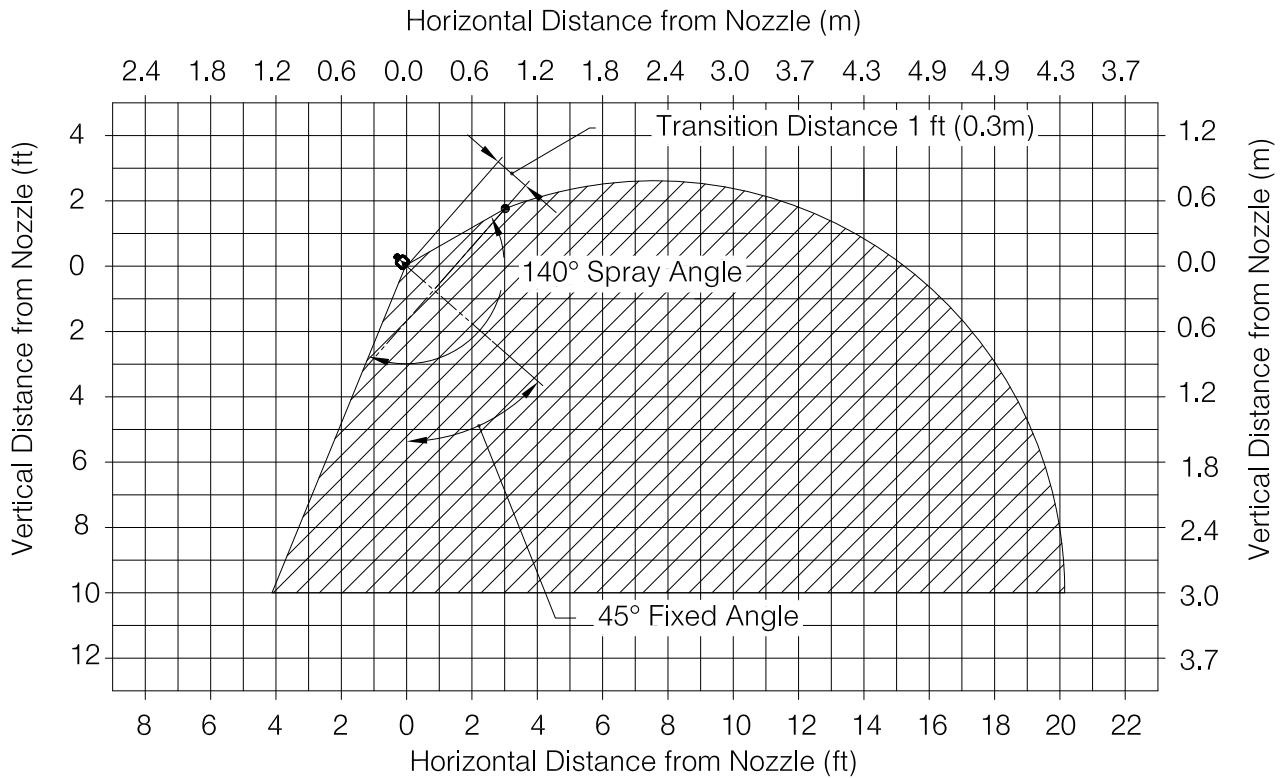
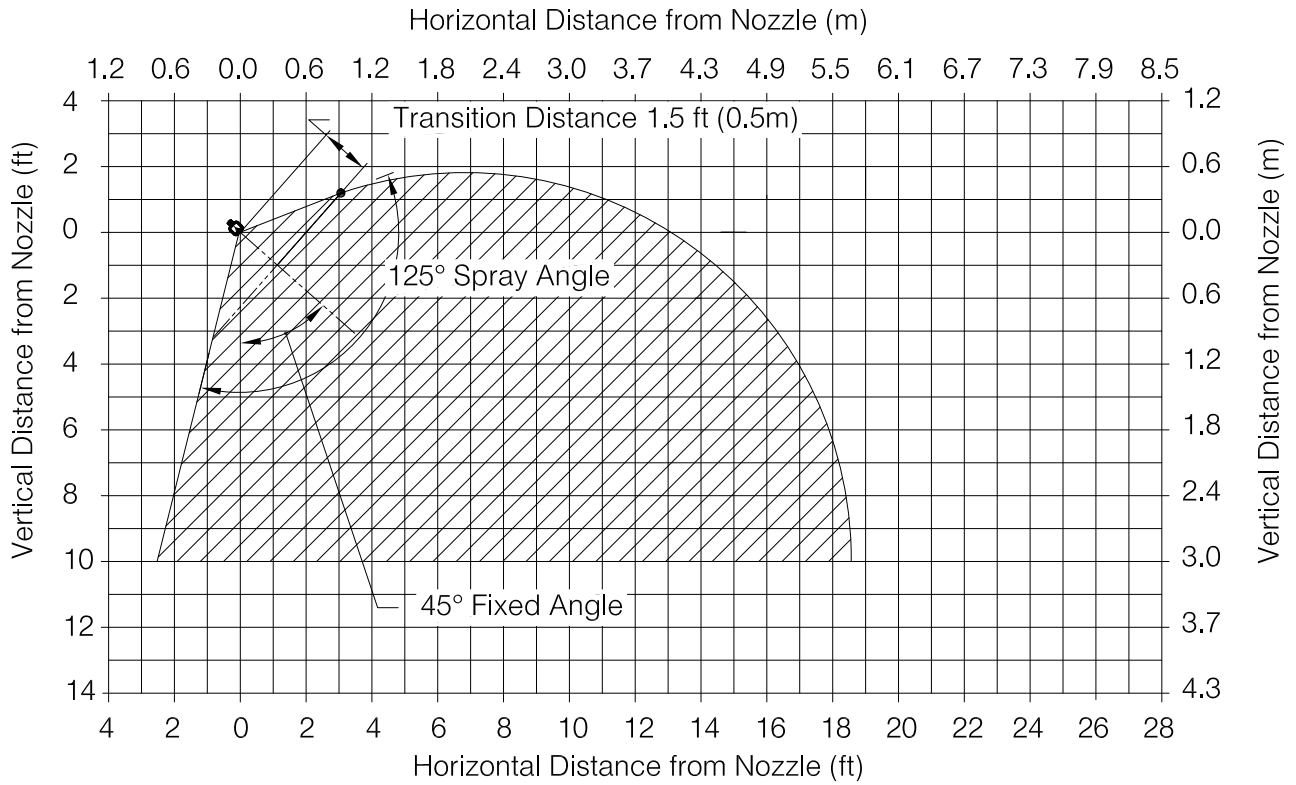
Figure 20



110° Spray Nozzle set at 45° Fixed Angle

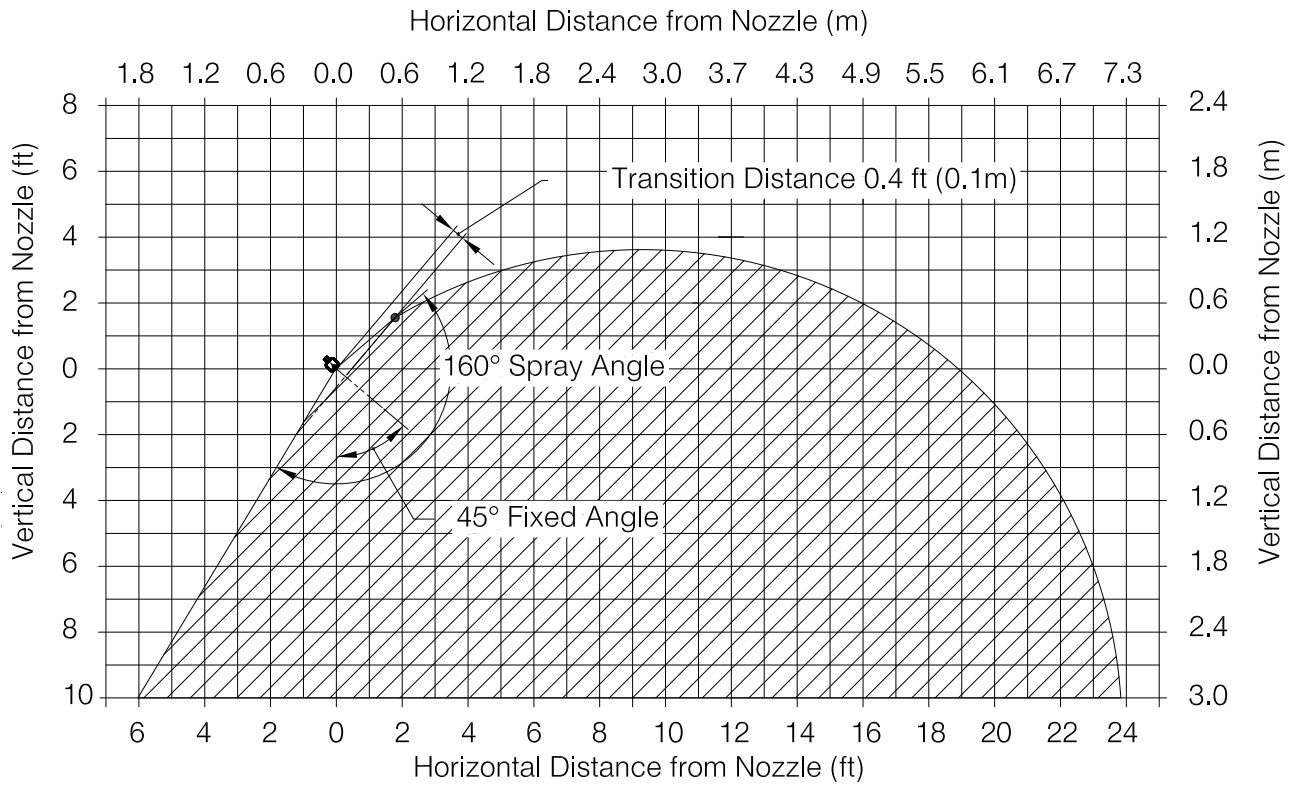
Figure 21





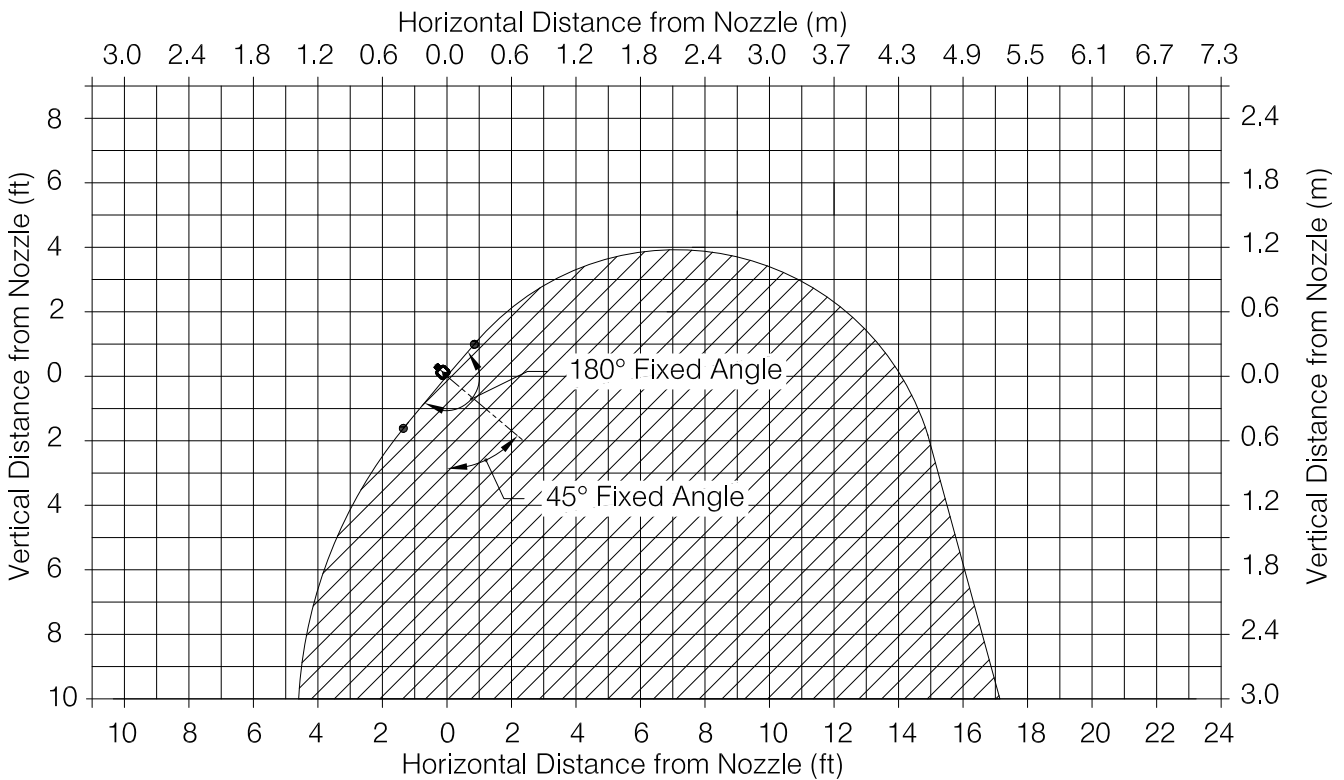
160° Spray Nozzle set at 45° Fixed Angle

Figure 24



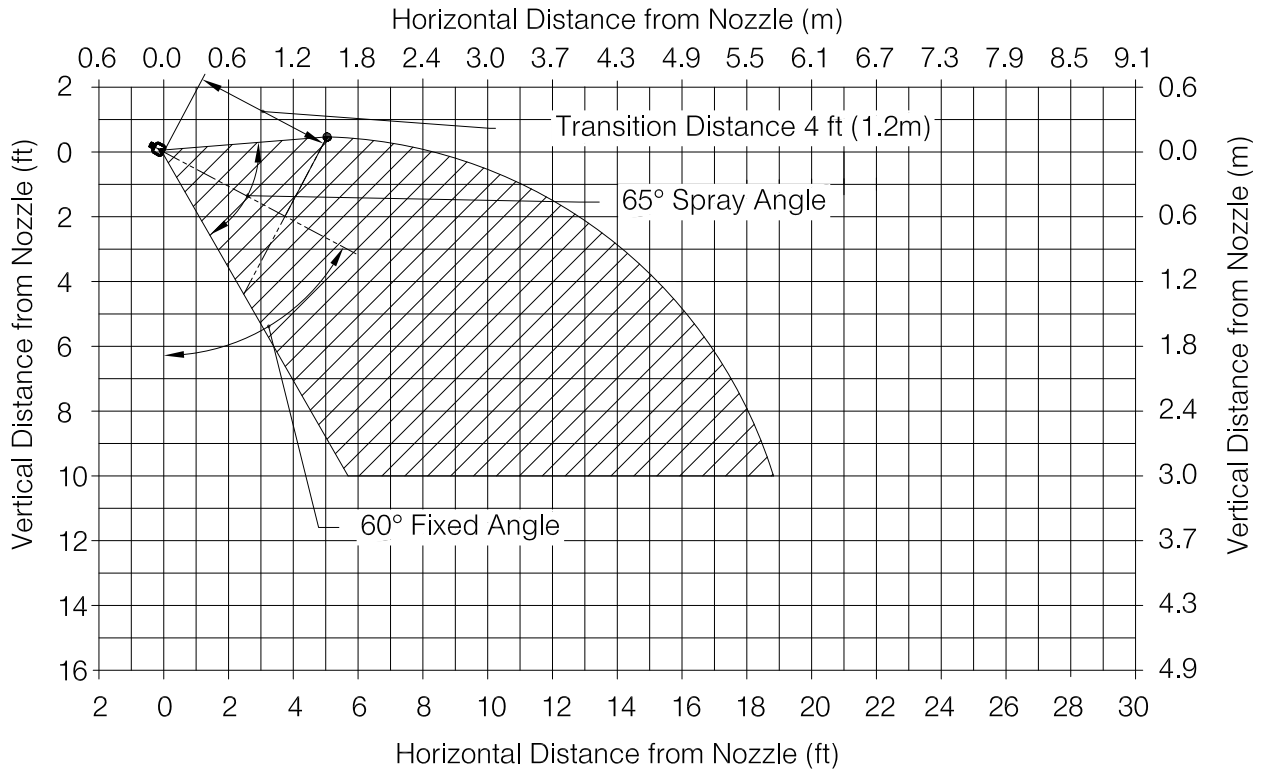
180° Spray Nozzle set at 45° Fixed Angle

Figure 25



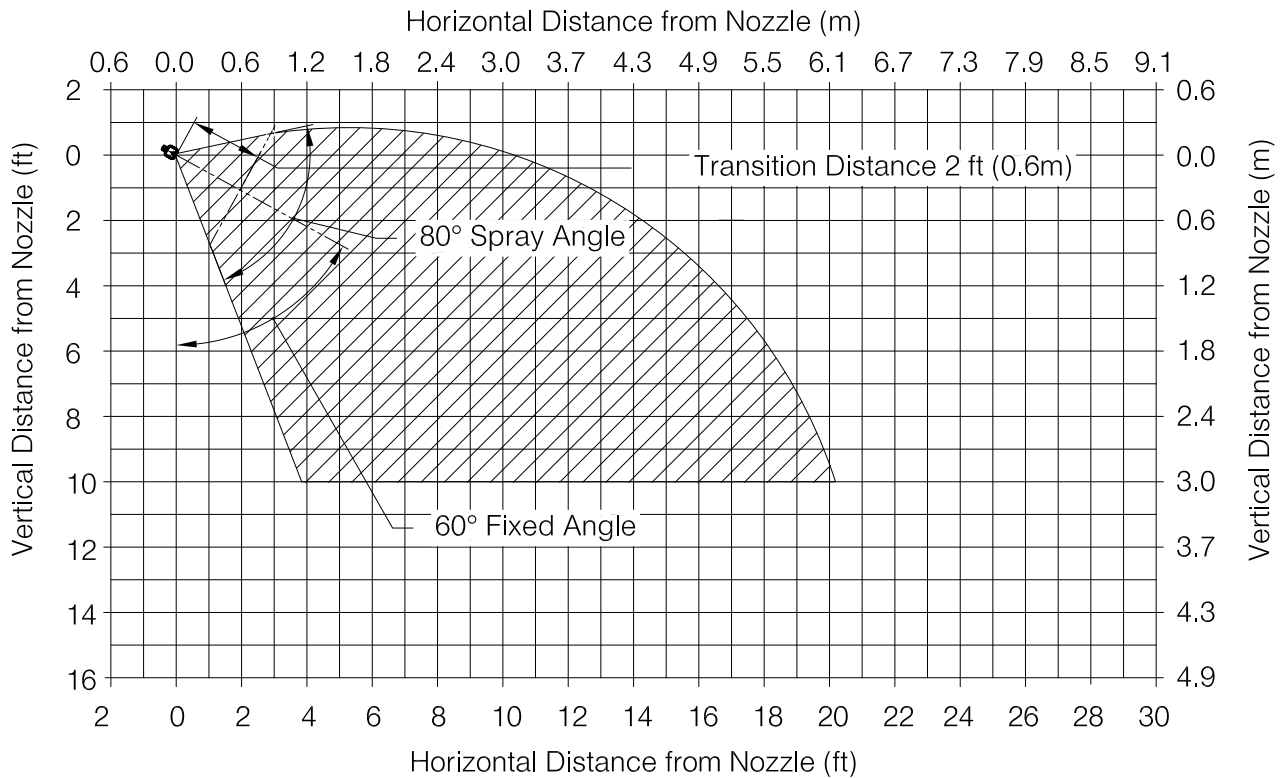
65° Spray Nozzle set at 60° Fixed Angle

Figure 26



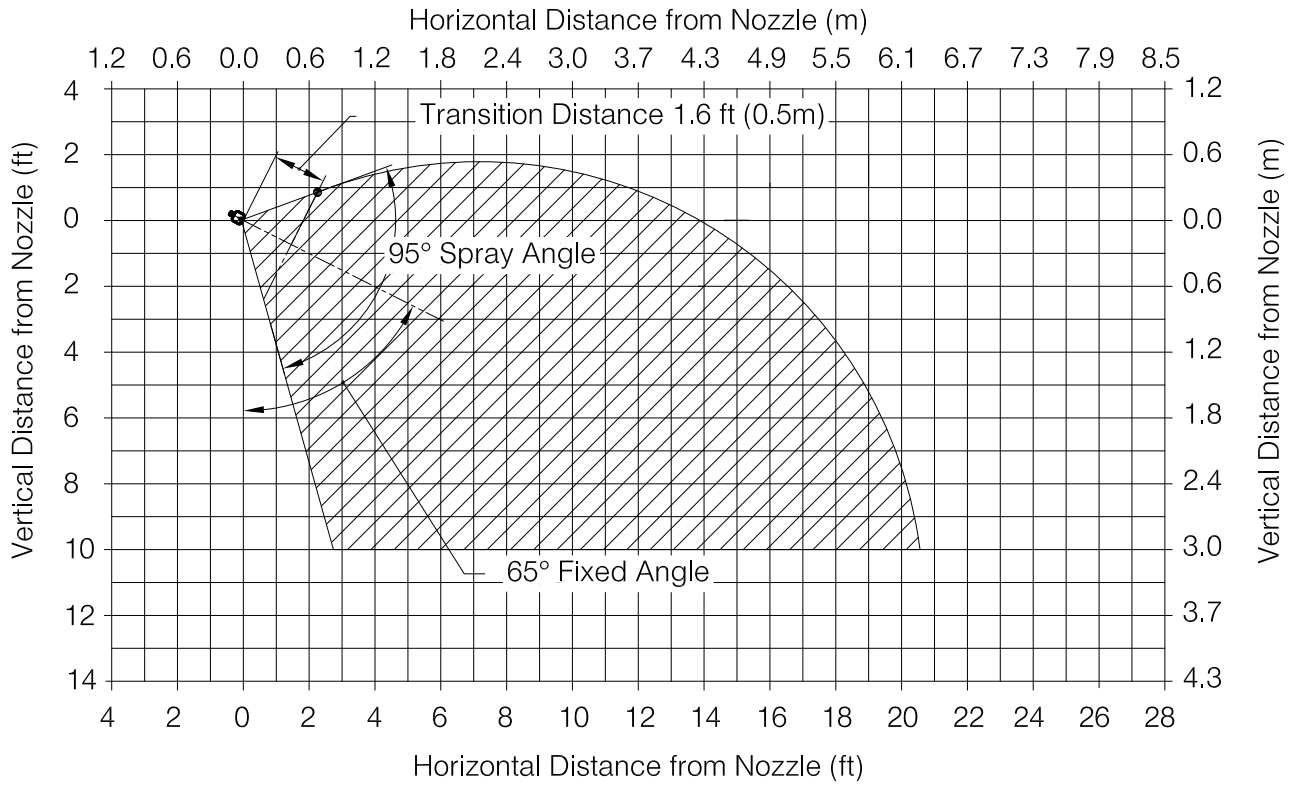
80° Spray Nozzle set at 60° Fixed Angle

Figure 27



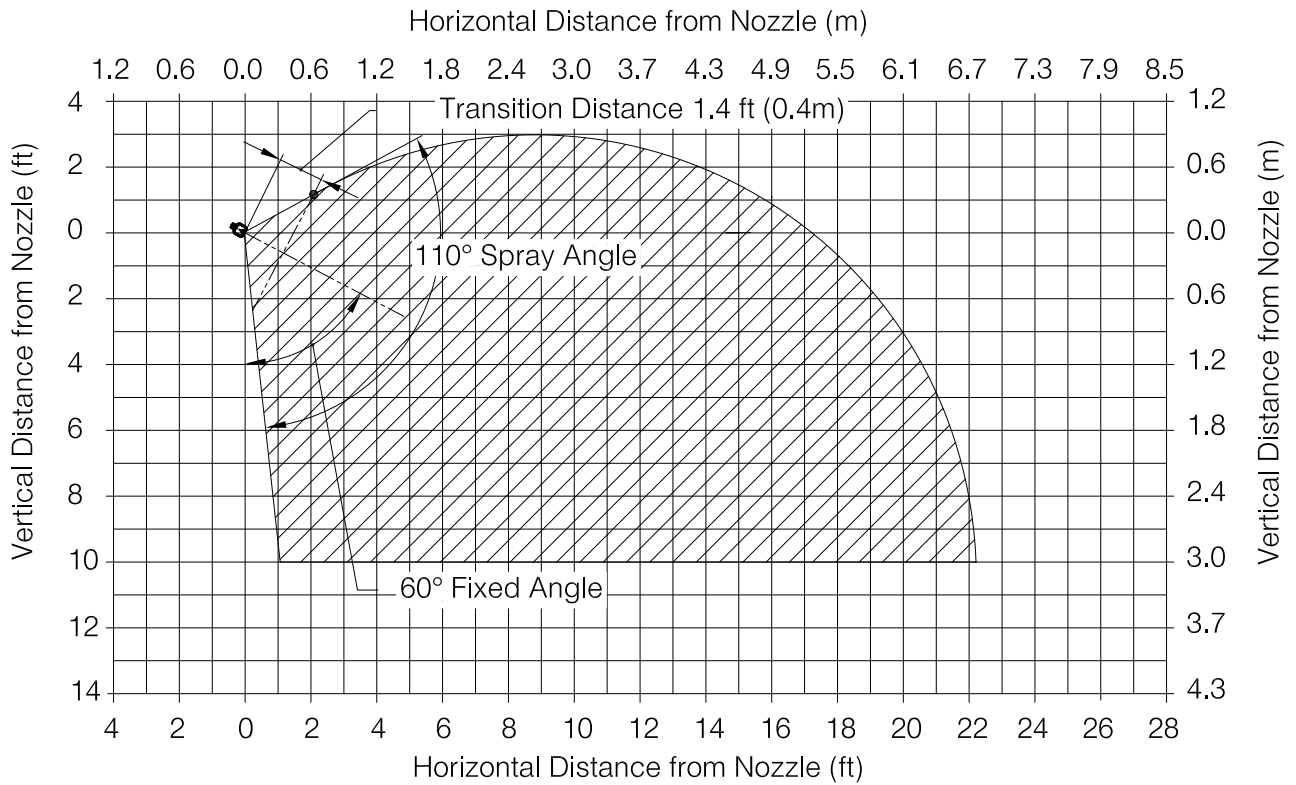
95° Spray Nozzle set at 60° Fixed Angle

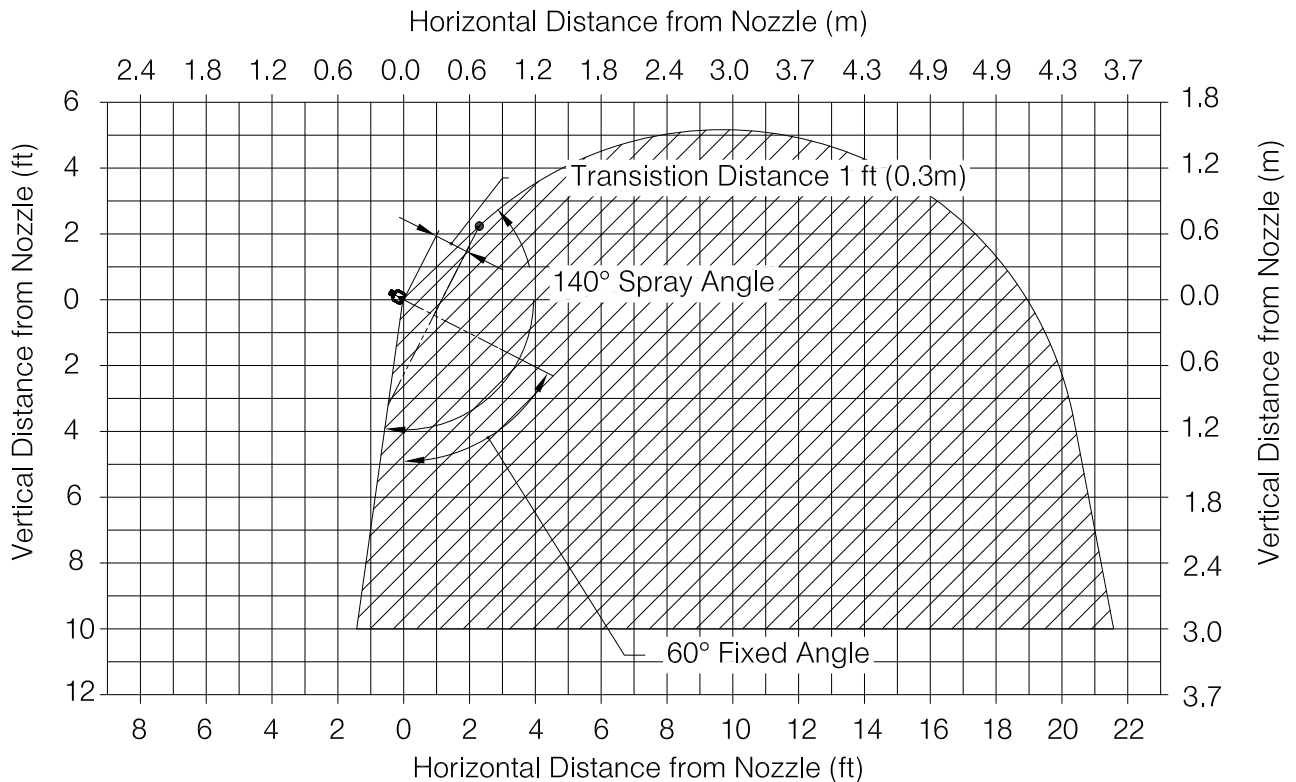
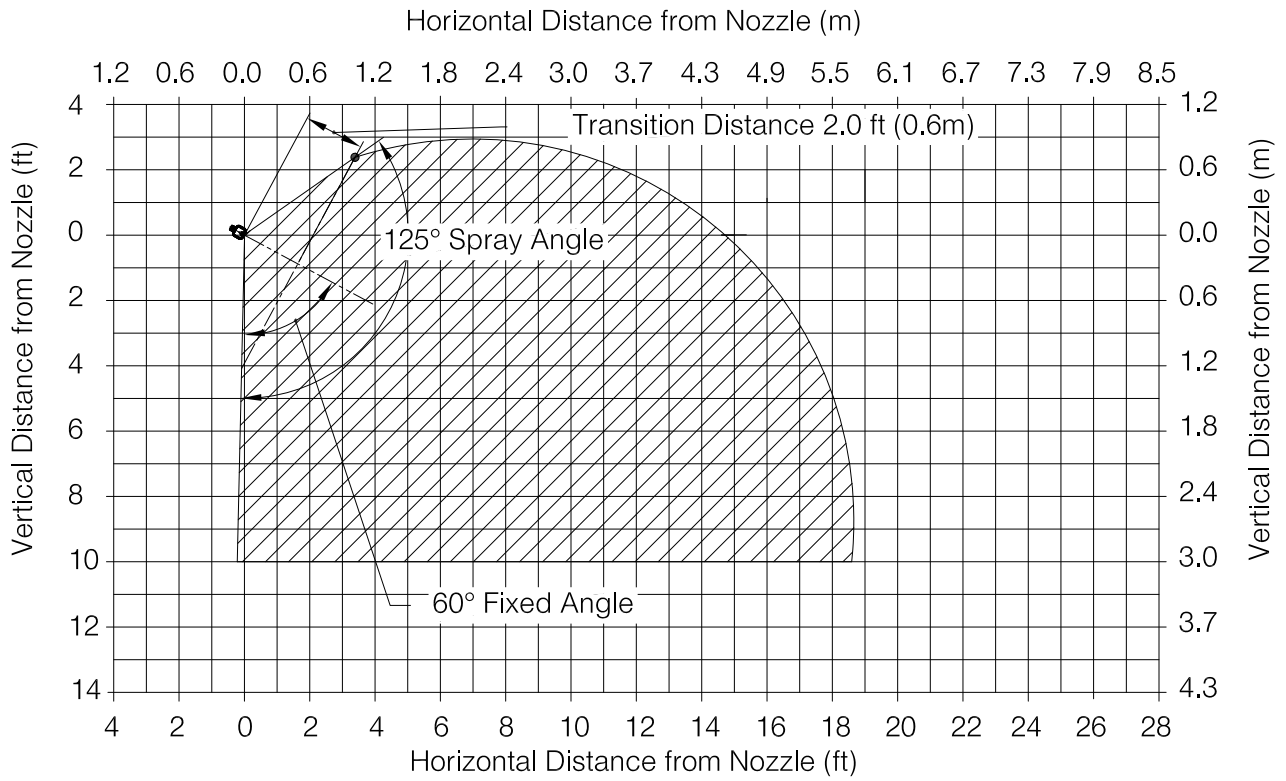
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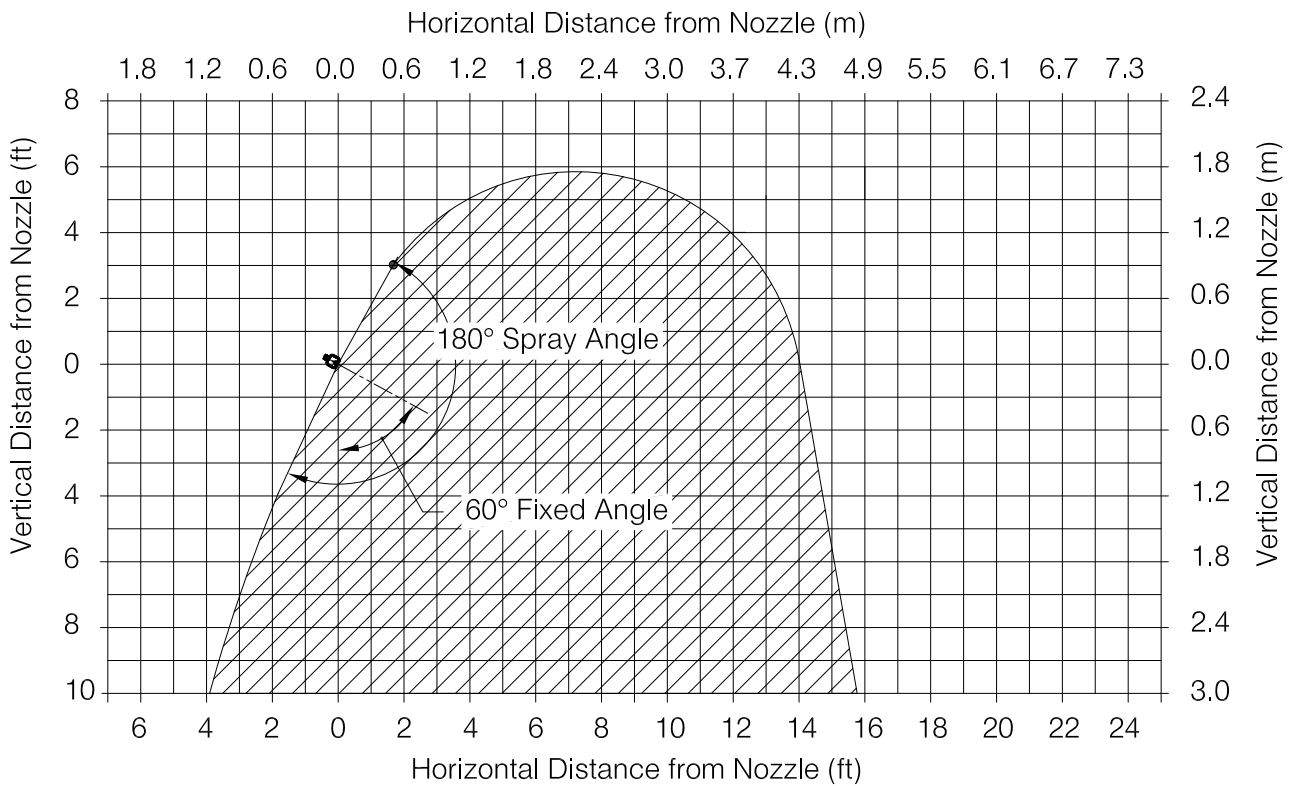
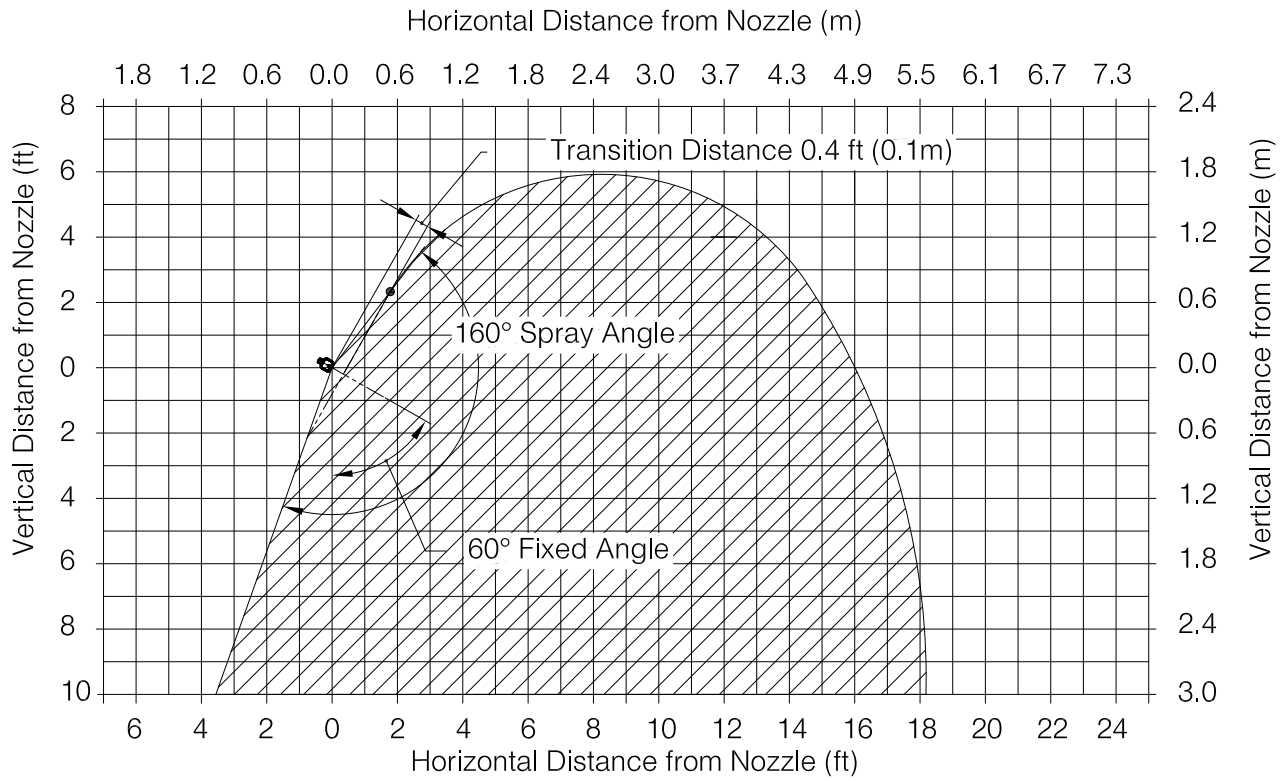


110° Spray Nozzle set at 60° Fixed Angle

Figure 29

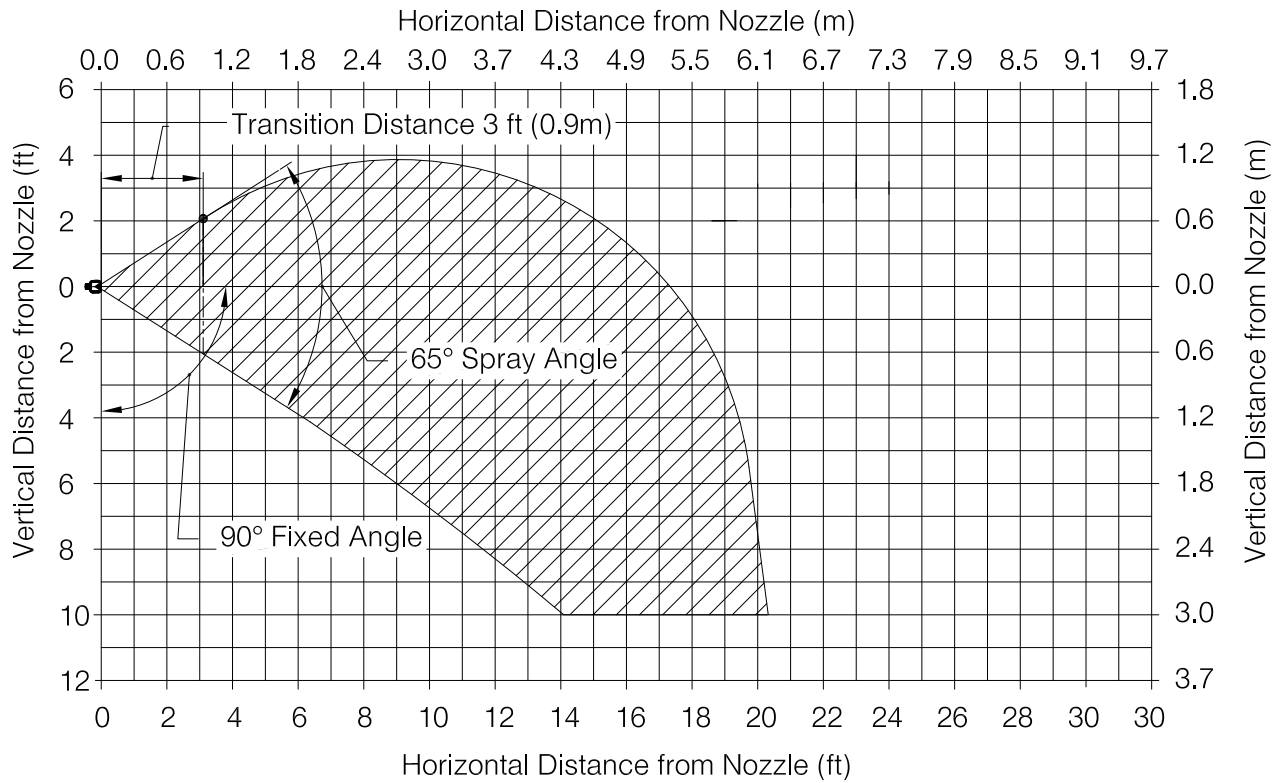






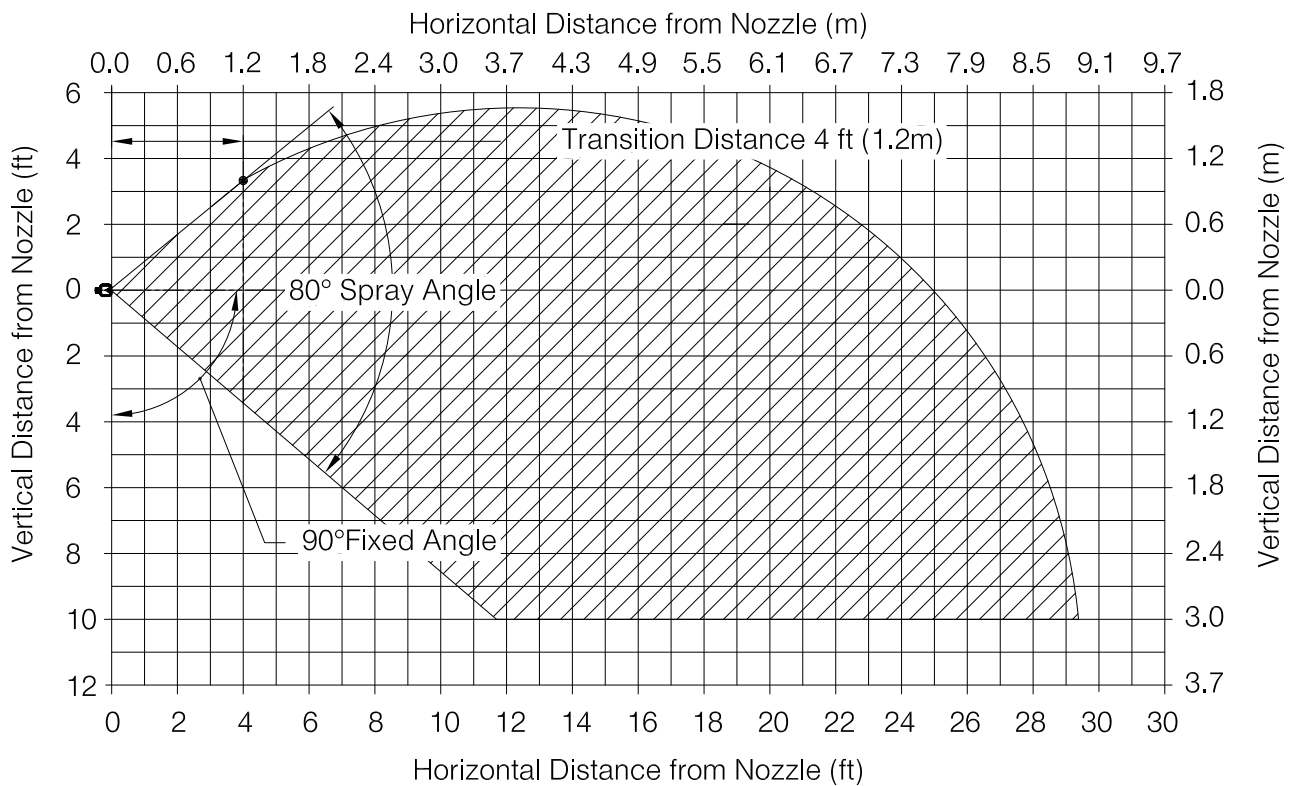
65° Spray Nozzle set at 90° Fixed Angle

Figure 34



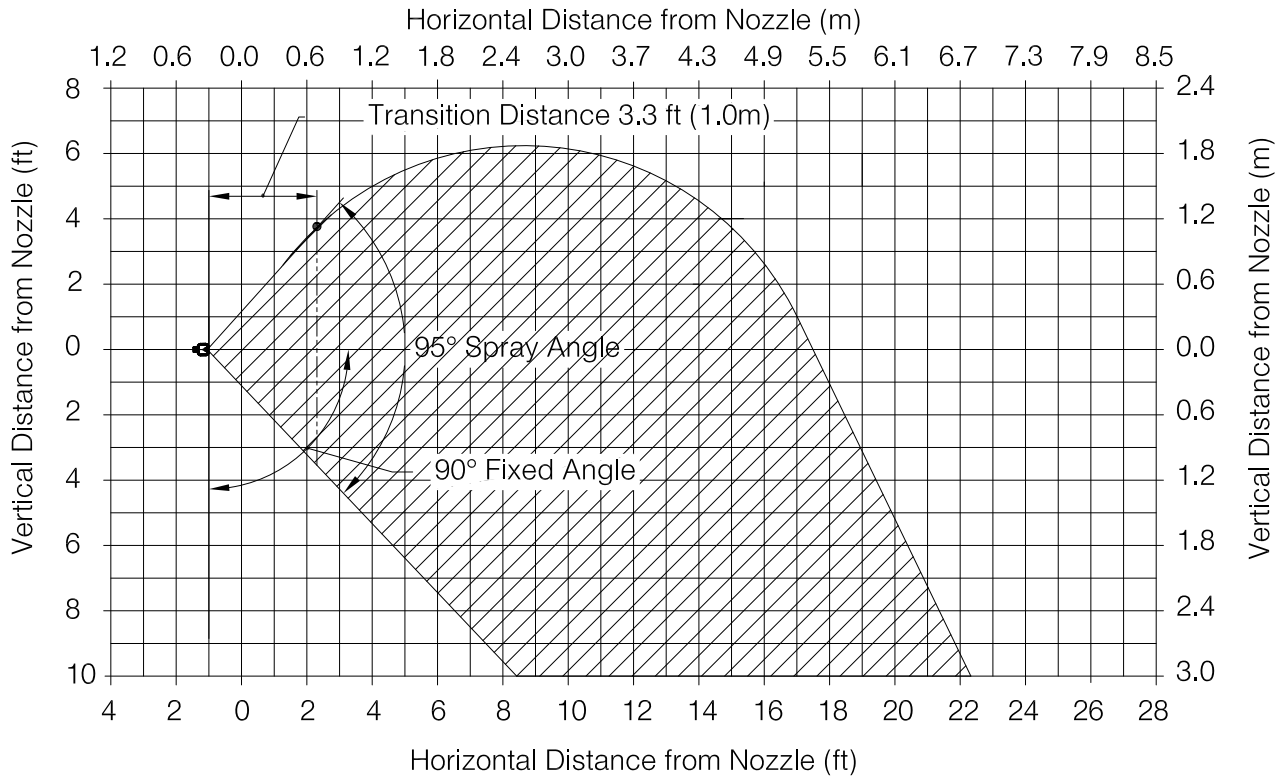
80° Spray Nozzle set at 90° Fixed Angle

Figure 35



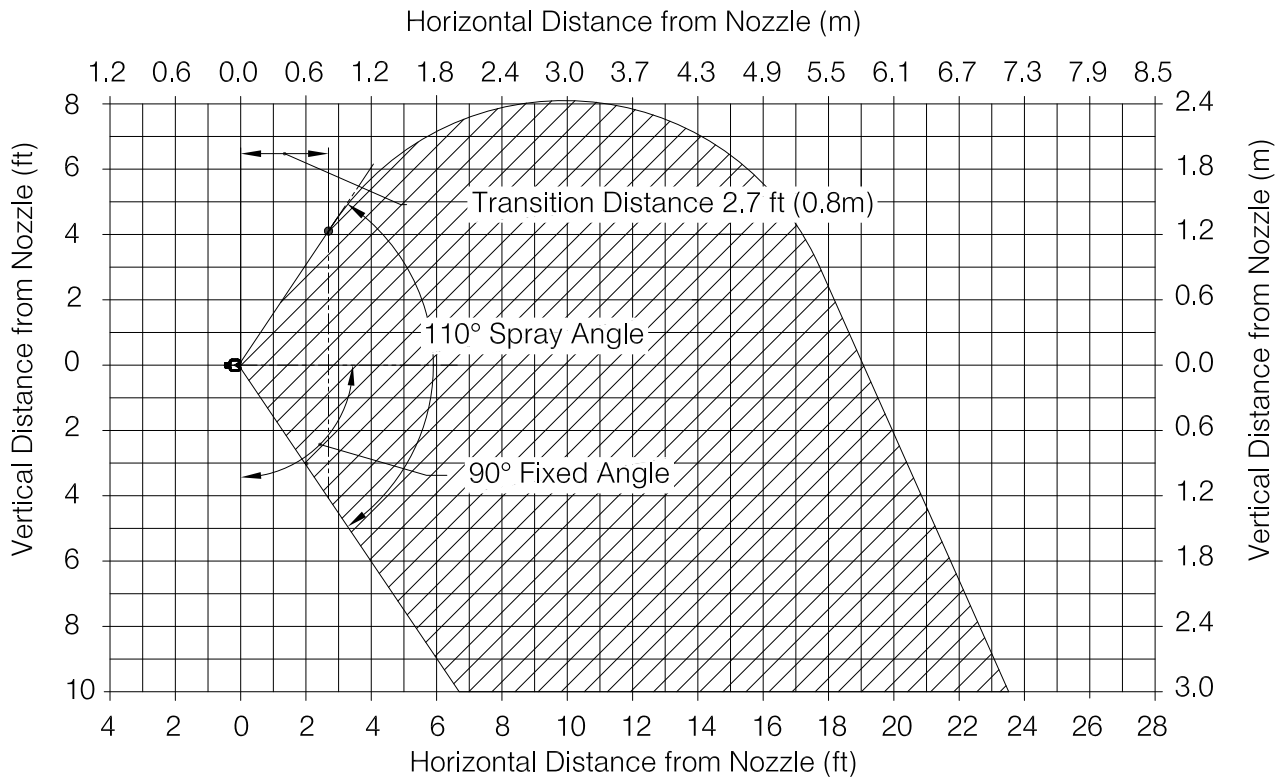
95° Spray Nozzle set at 90° Fixed Angle

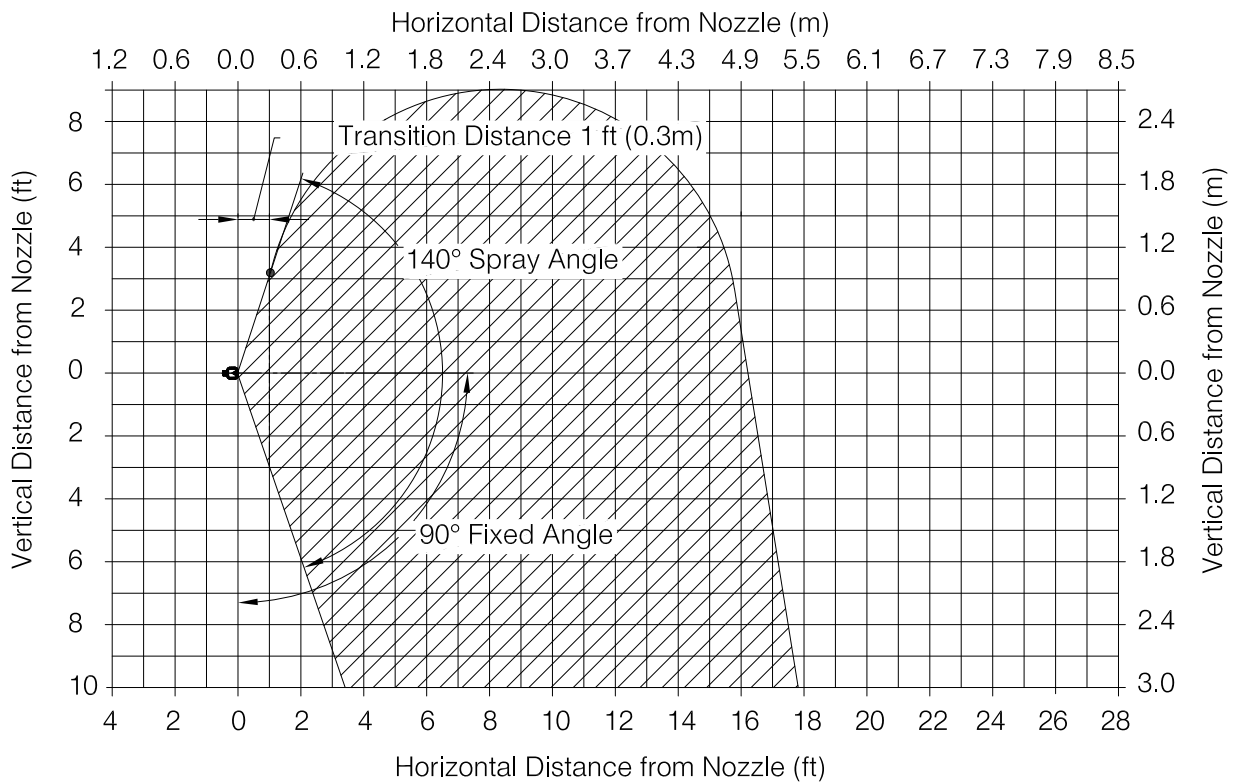
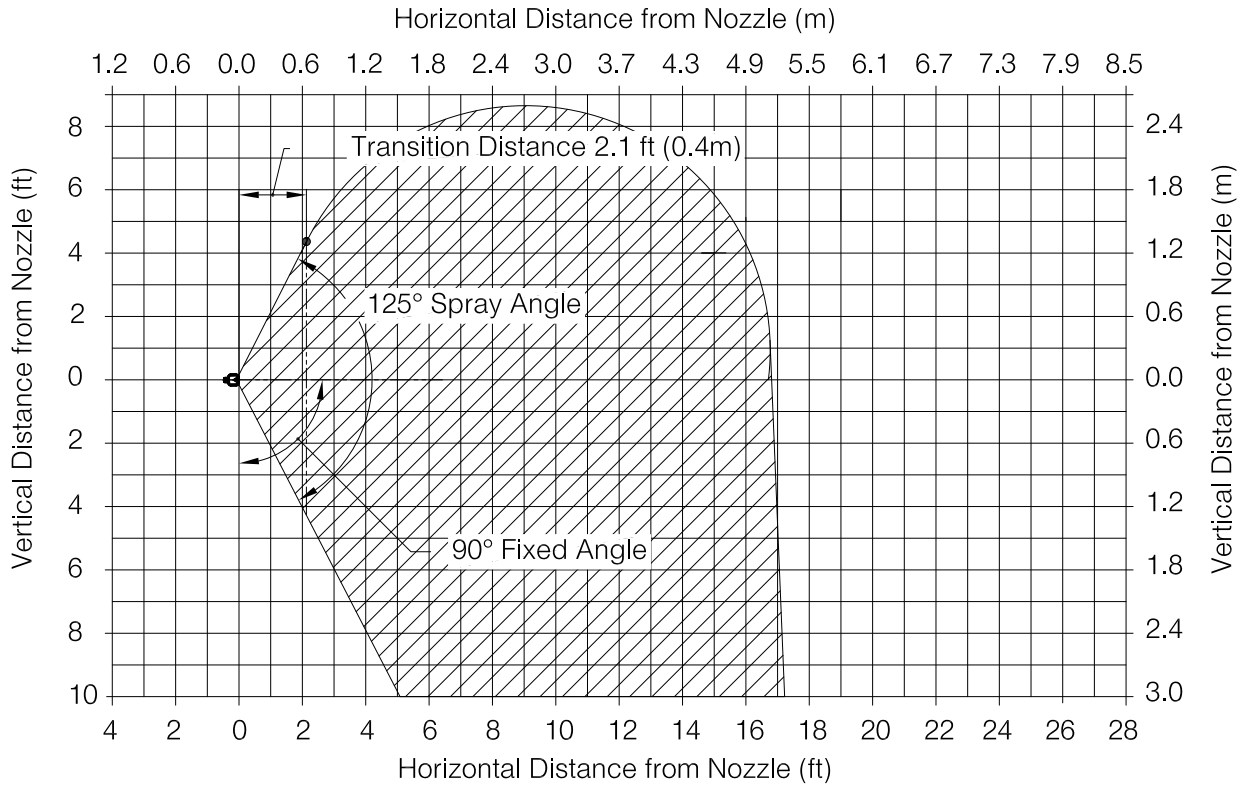
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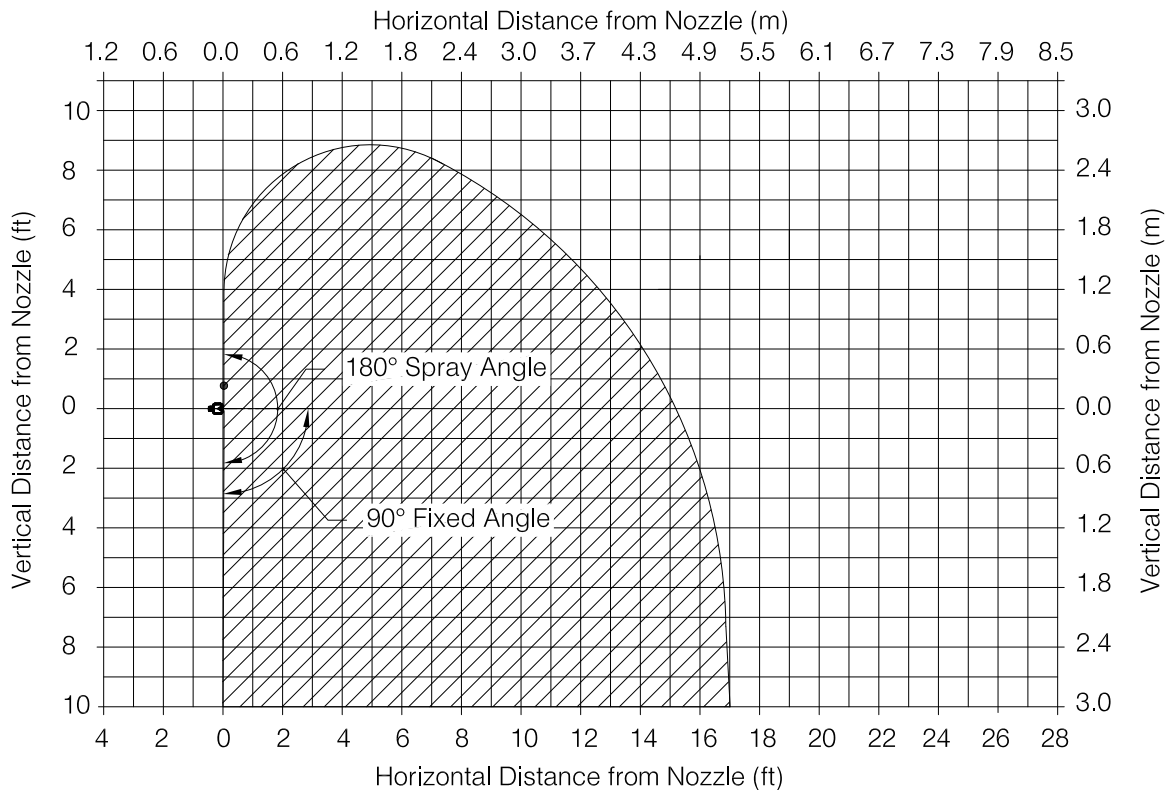
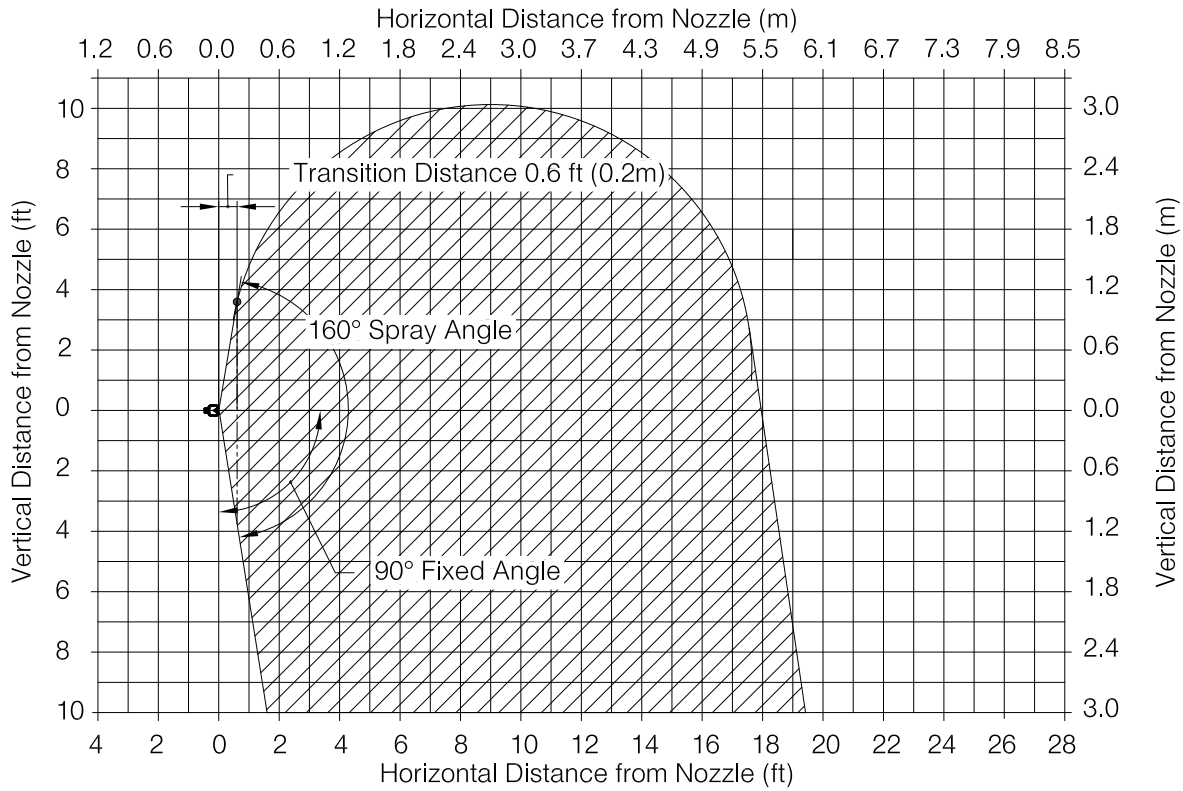


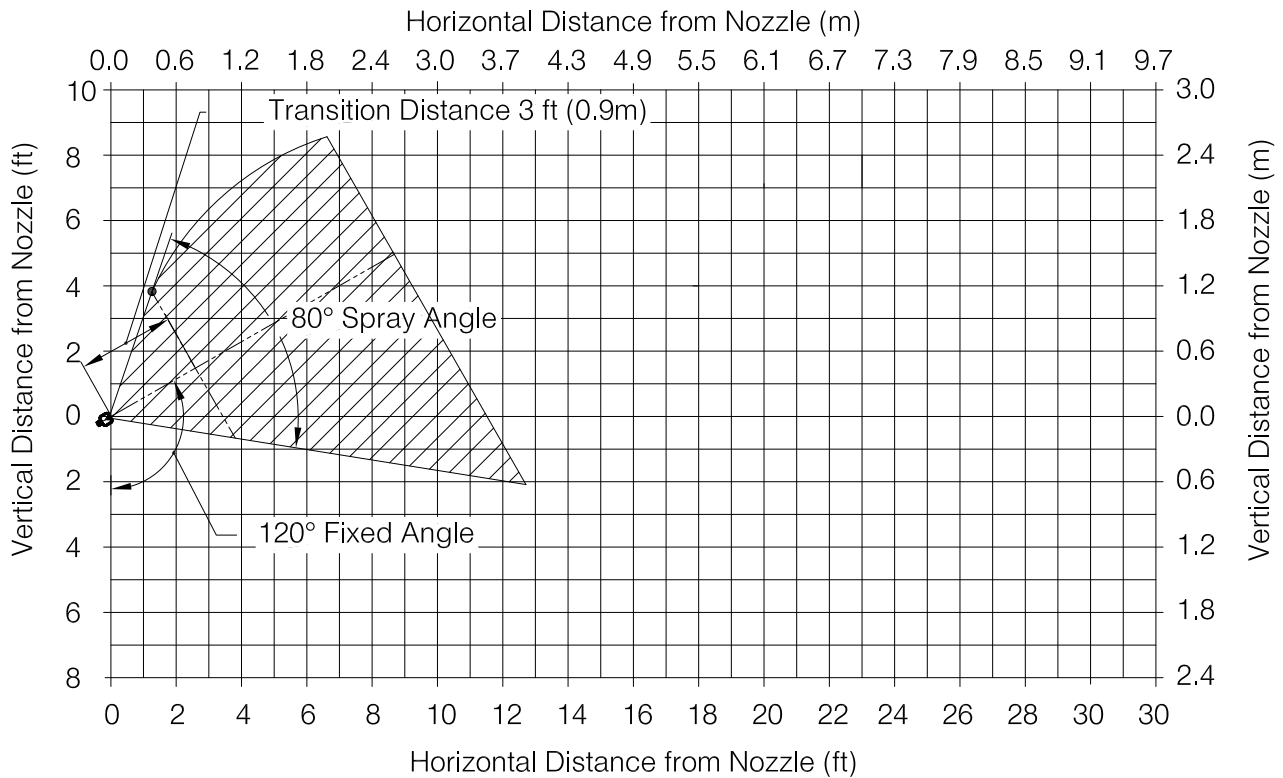
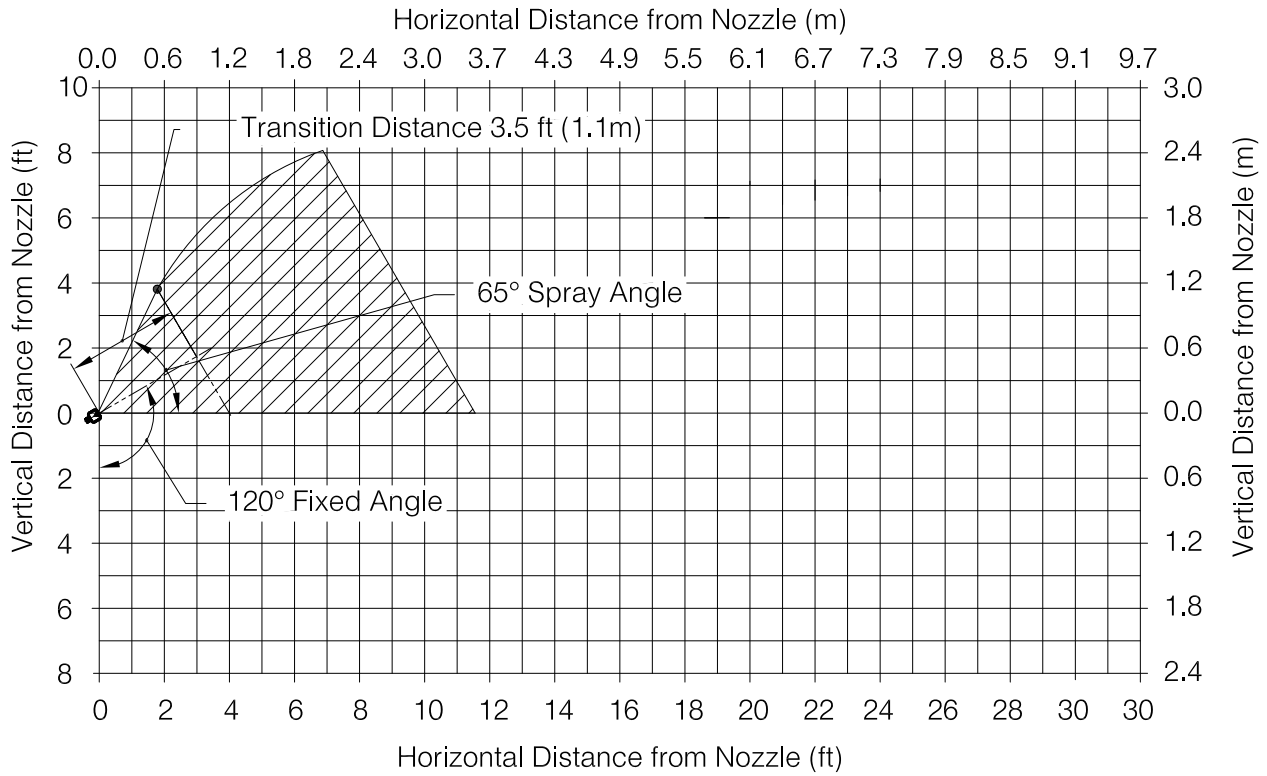
110° Spray Nozzle set at 90° Fixed Angle

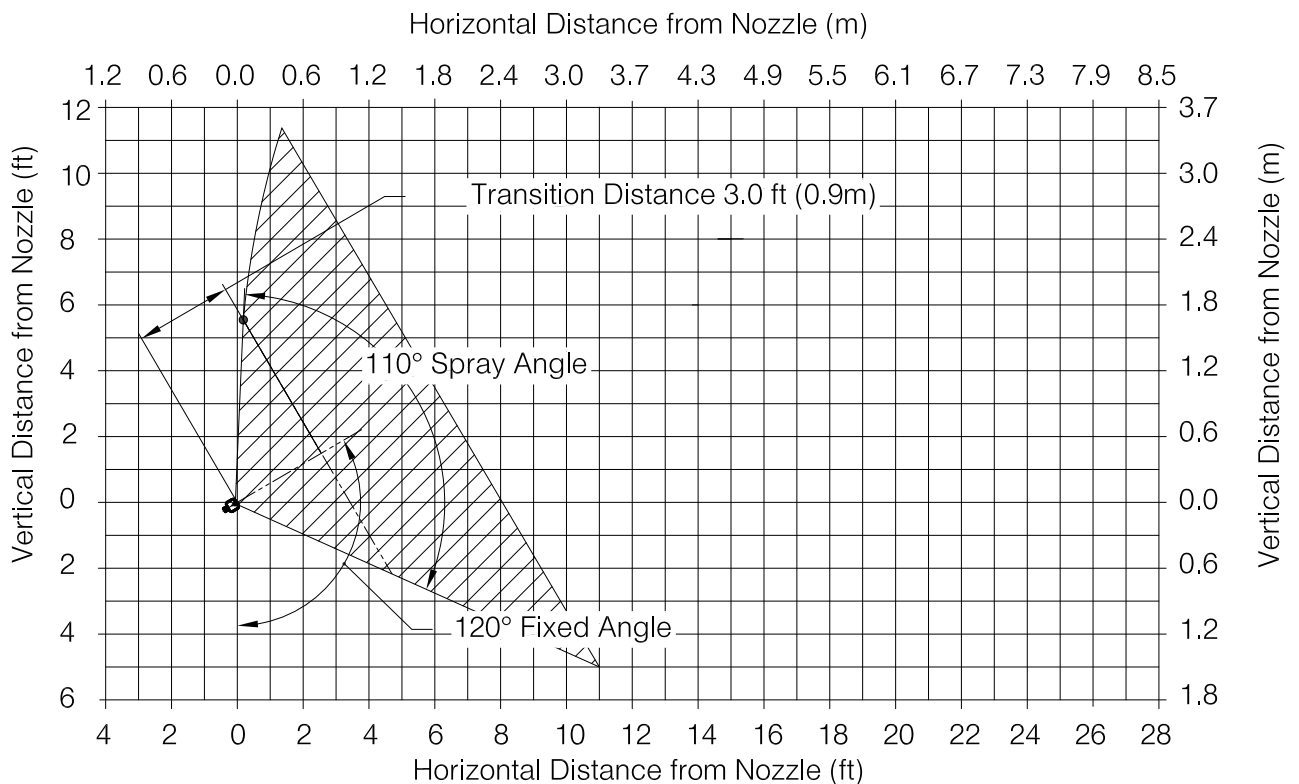
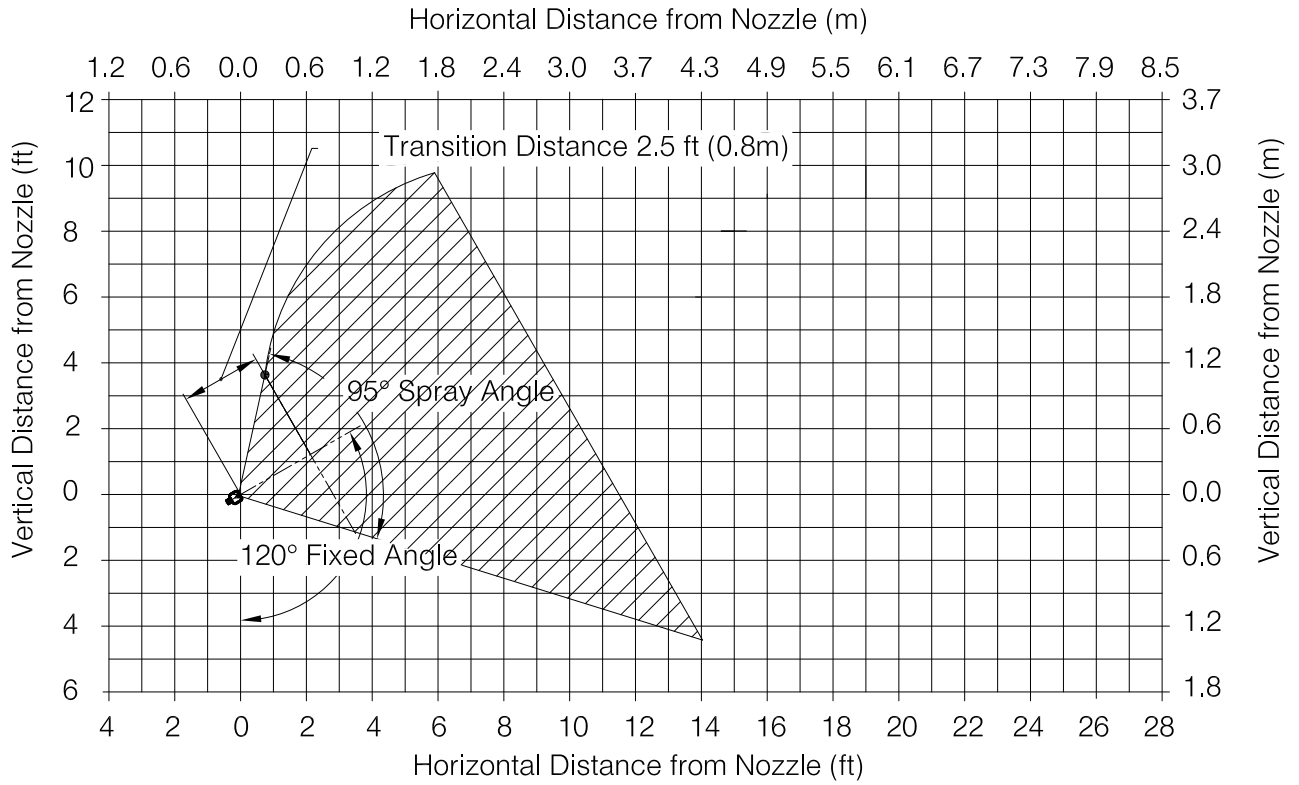
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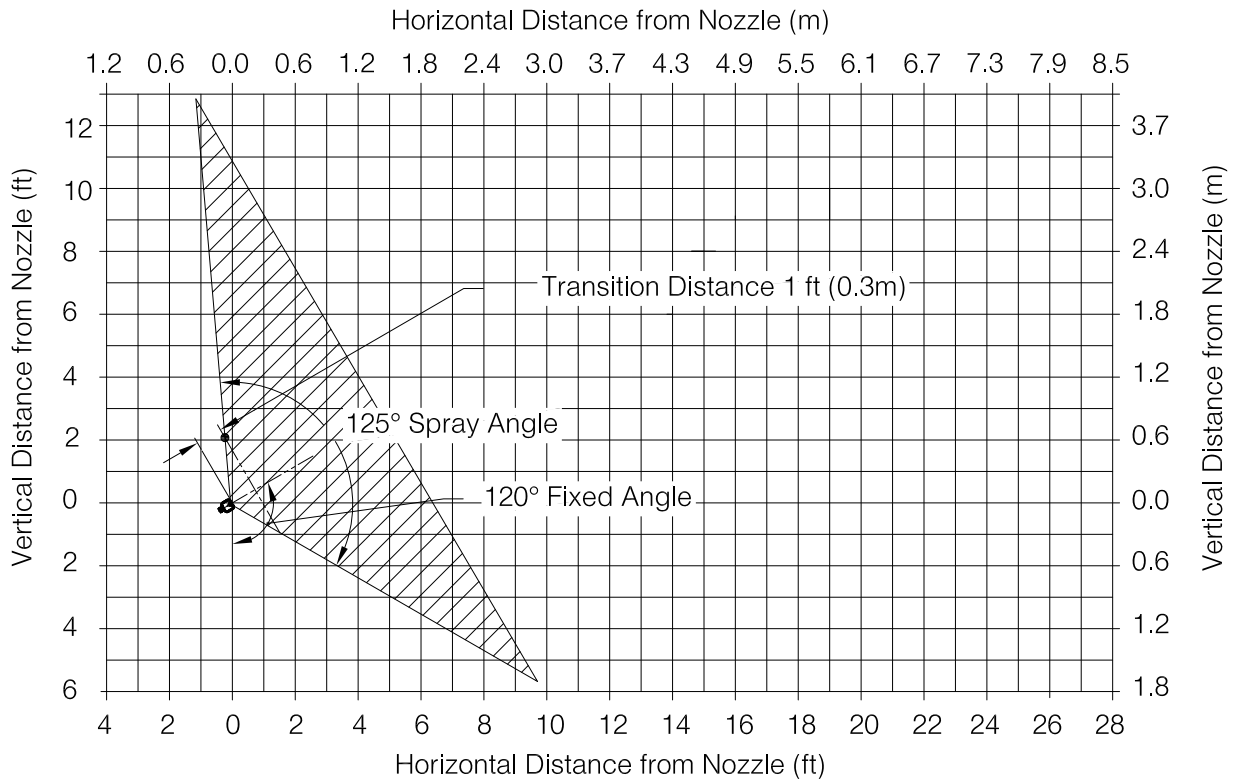






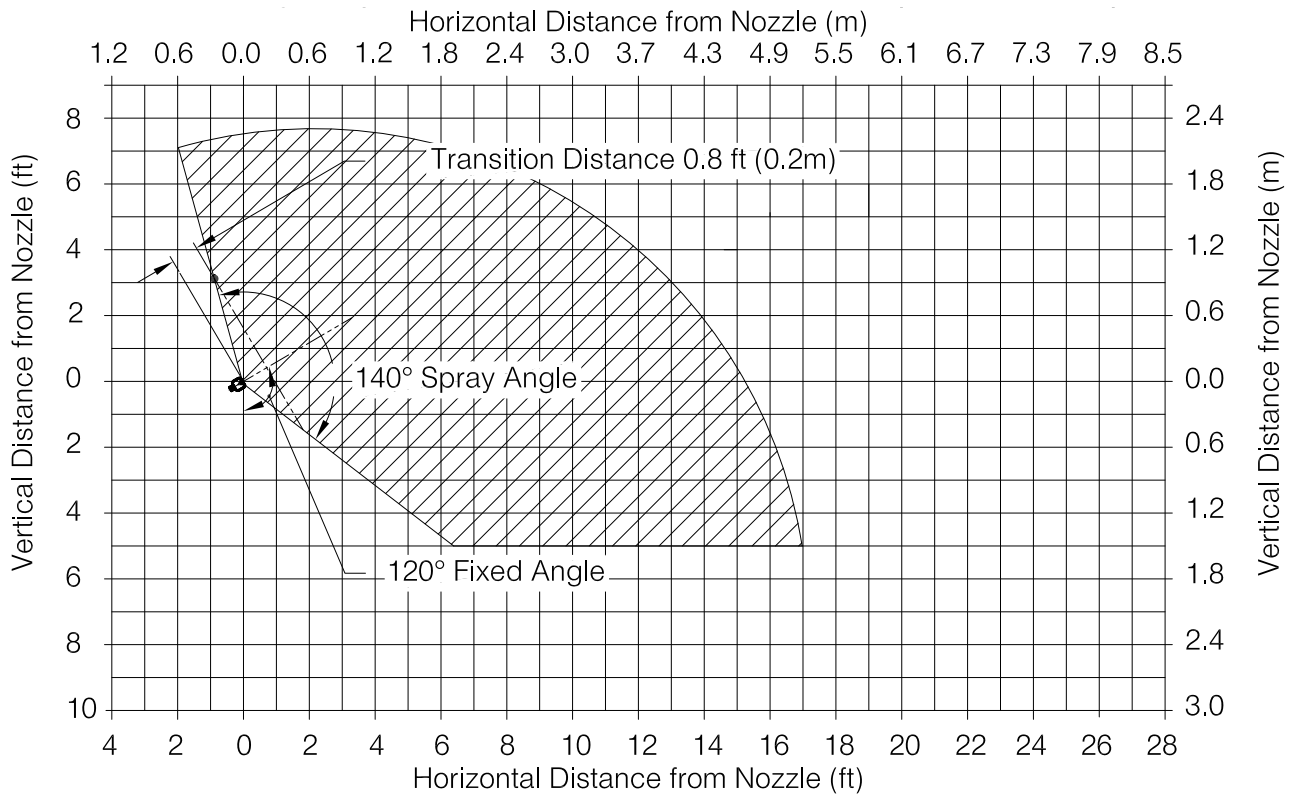
125° Spray Nozzle set at 120° Fixed Angle

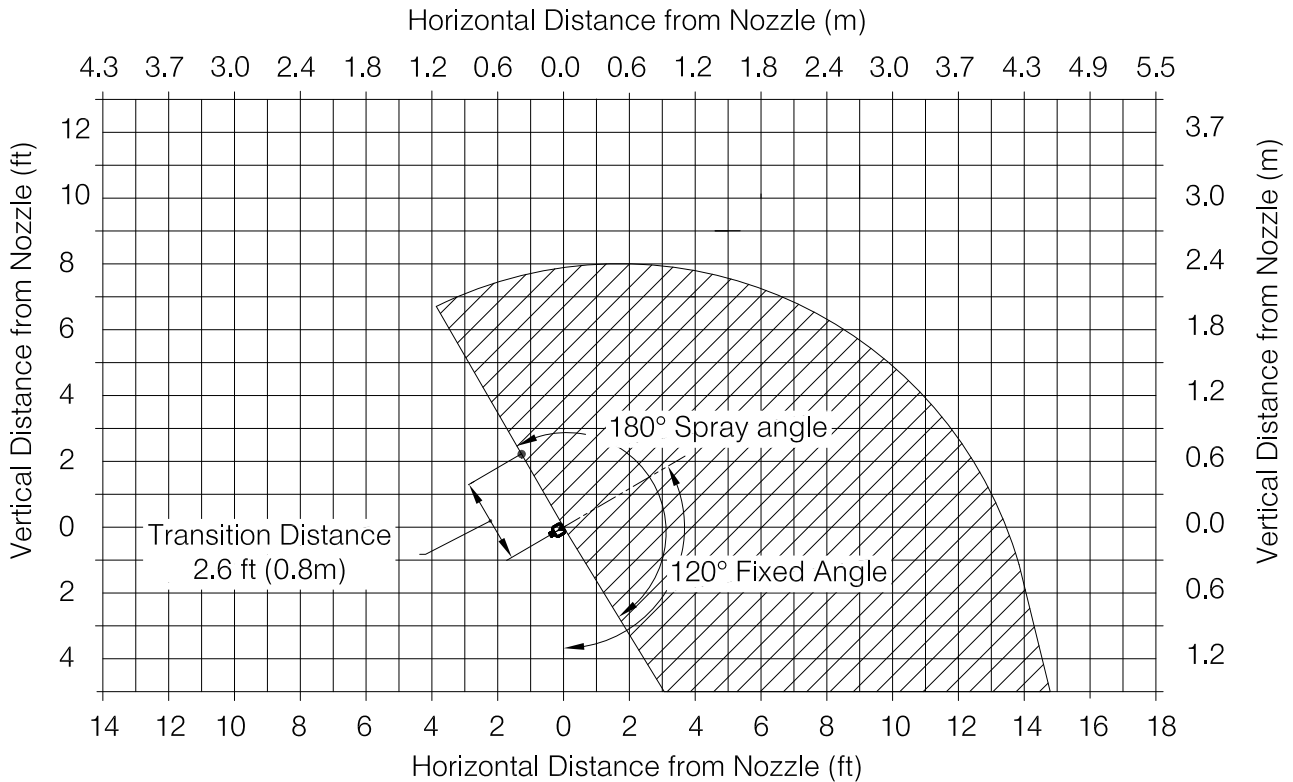
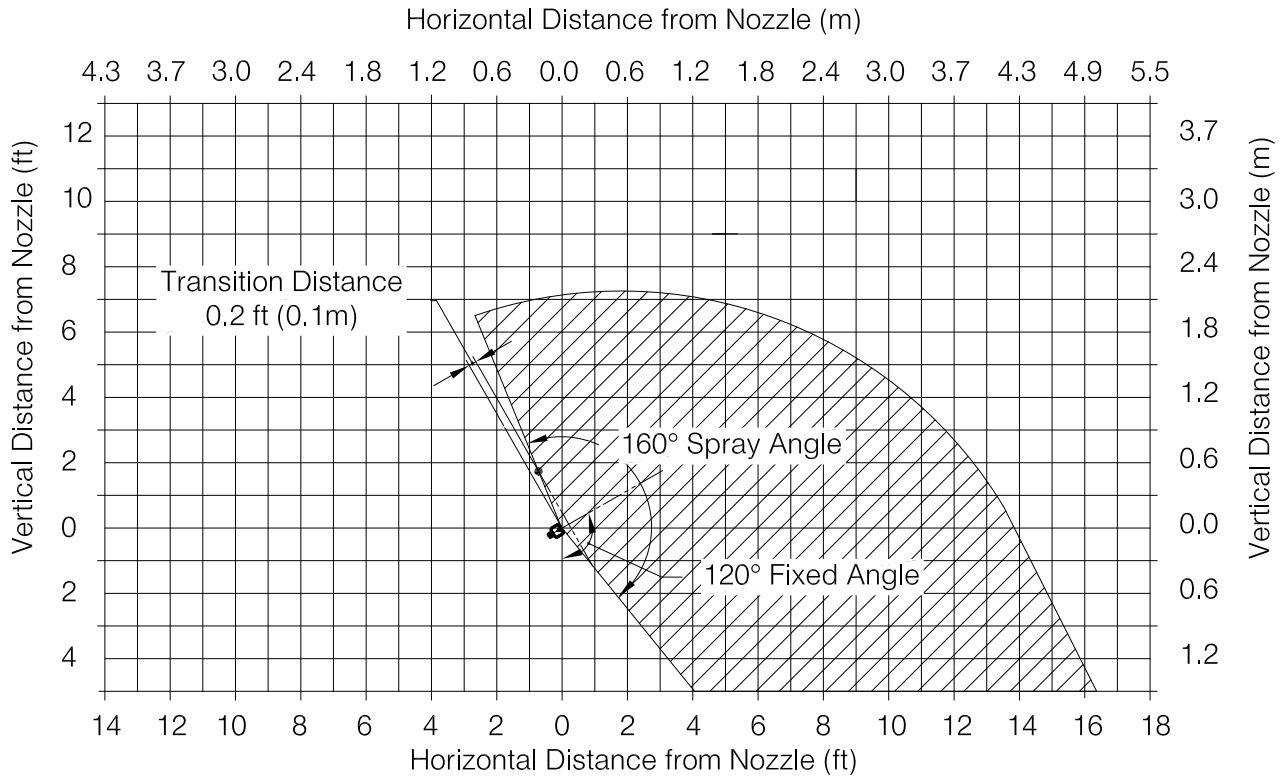
Figure 46



140° Spray Nozzle set at 120° Fixed Angle

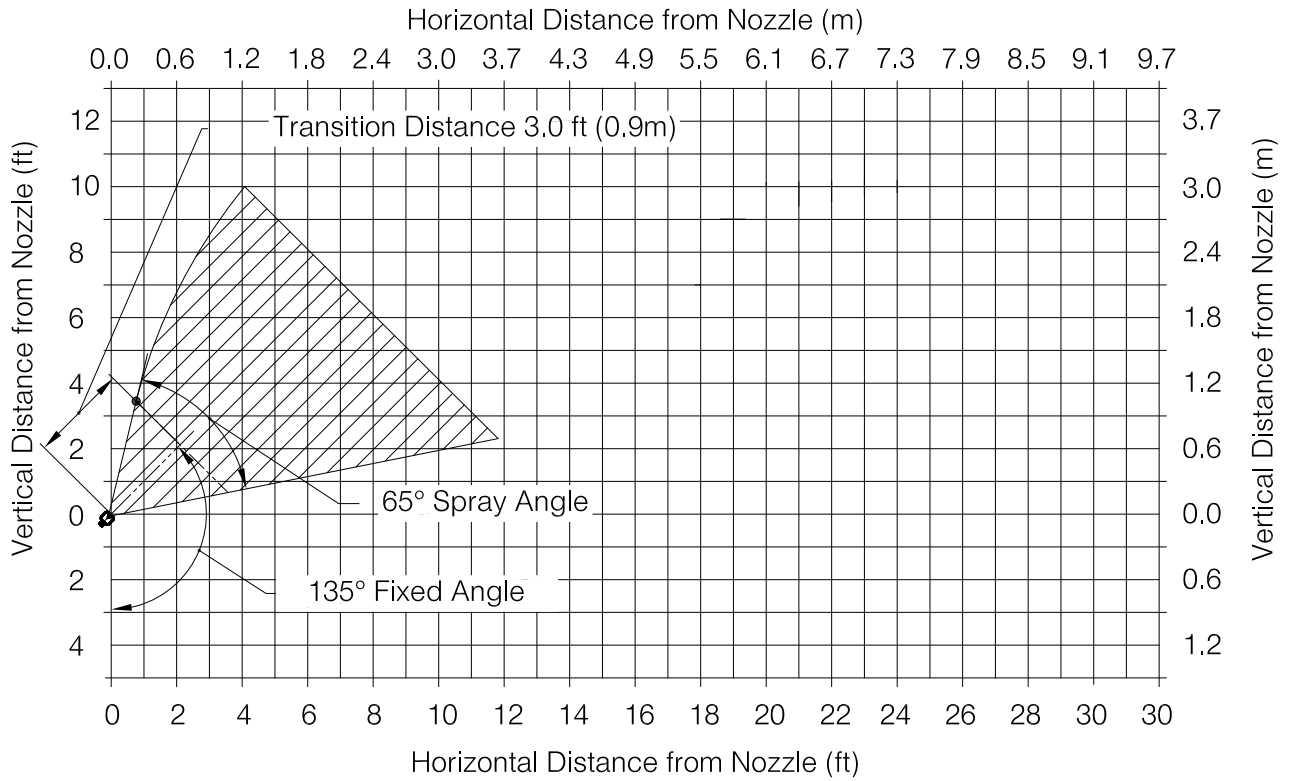
Figure 47





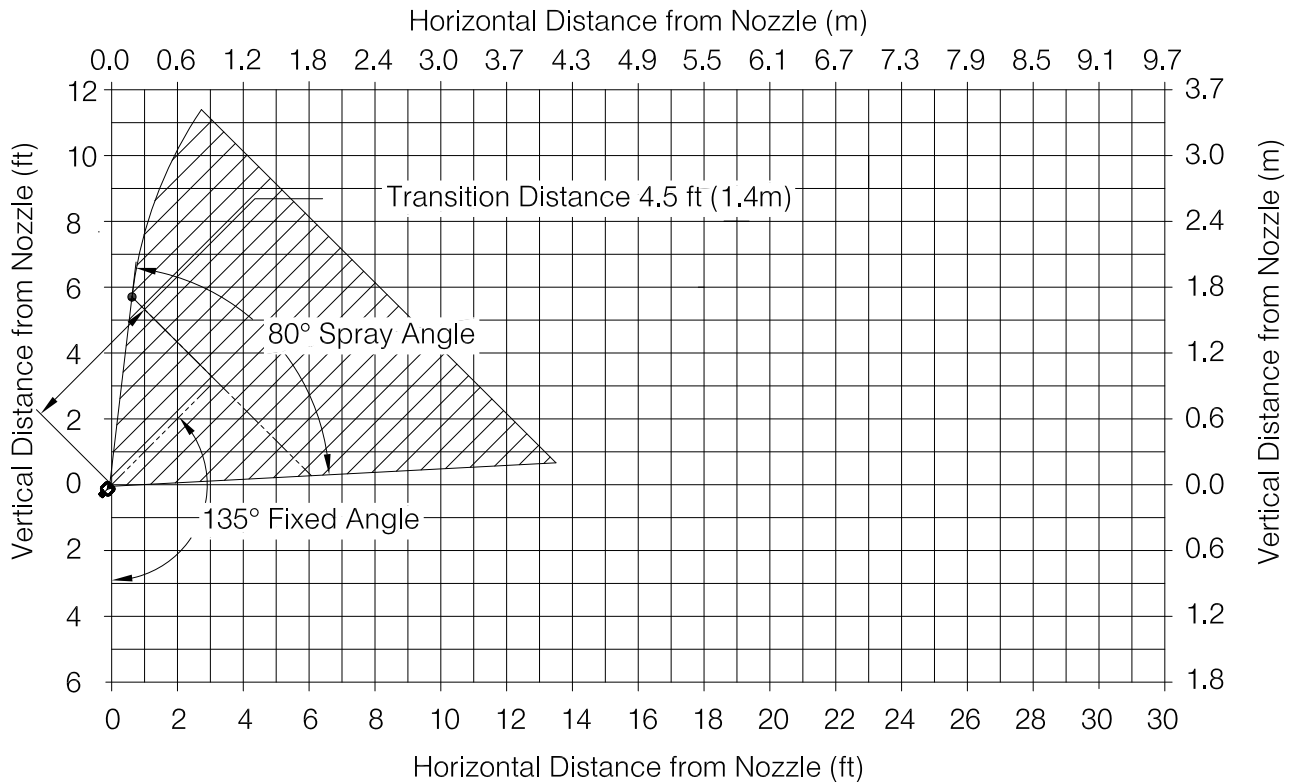
65° Spray Nozzle set at 135° Fixed Angle

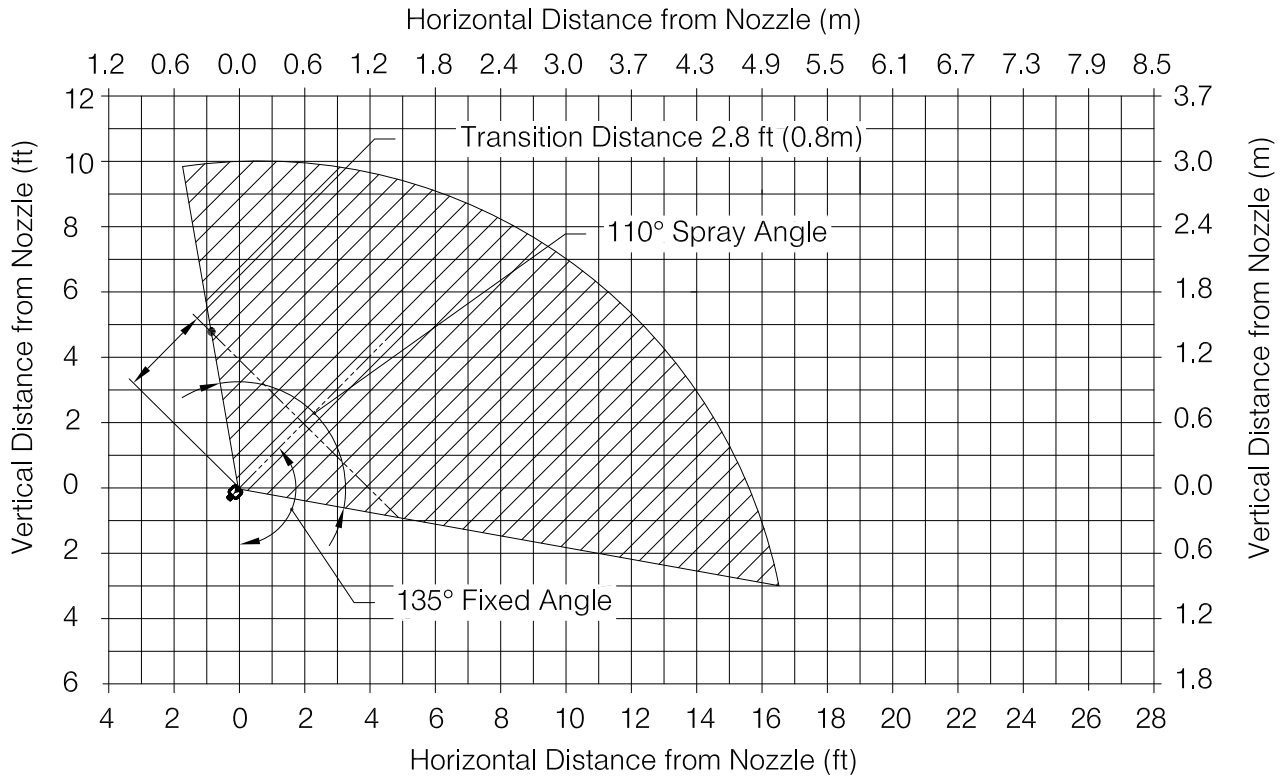
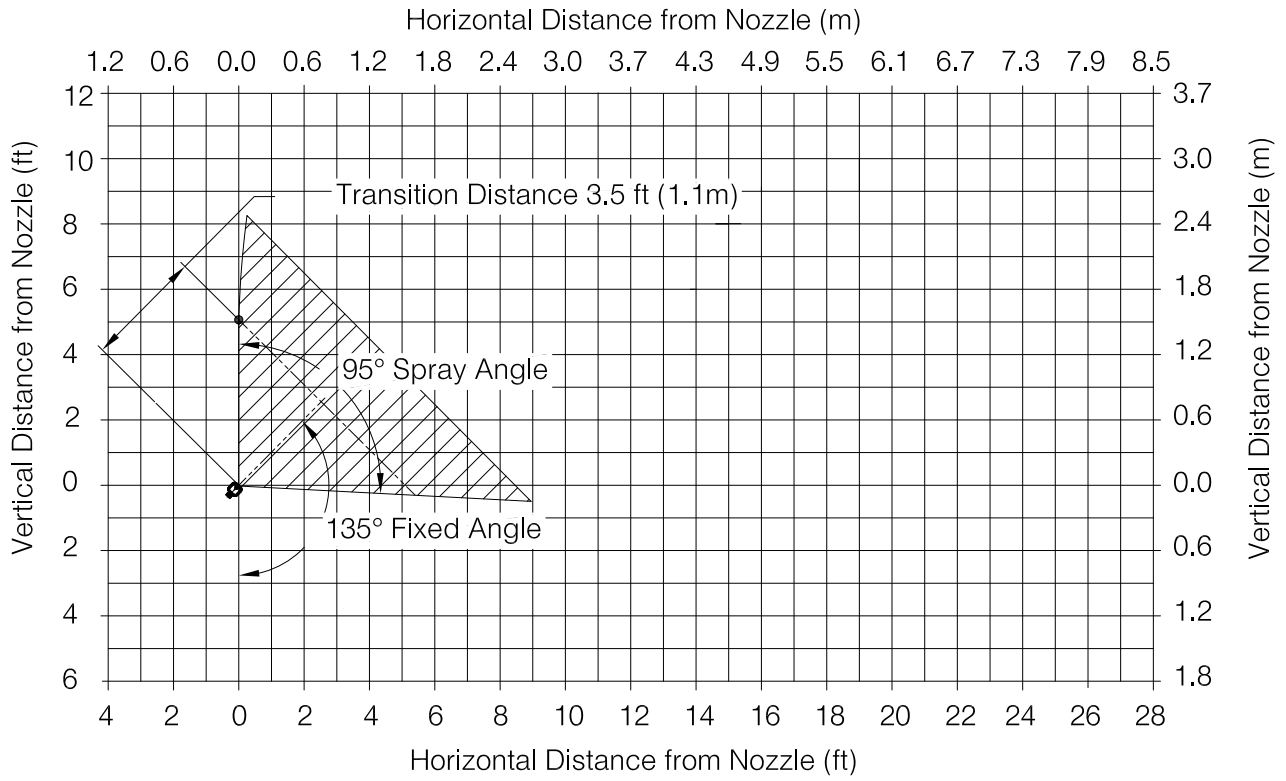
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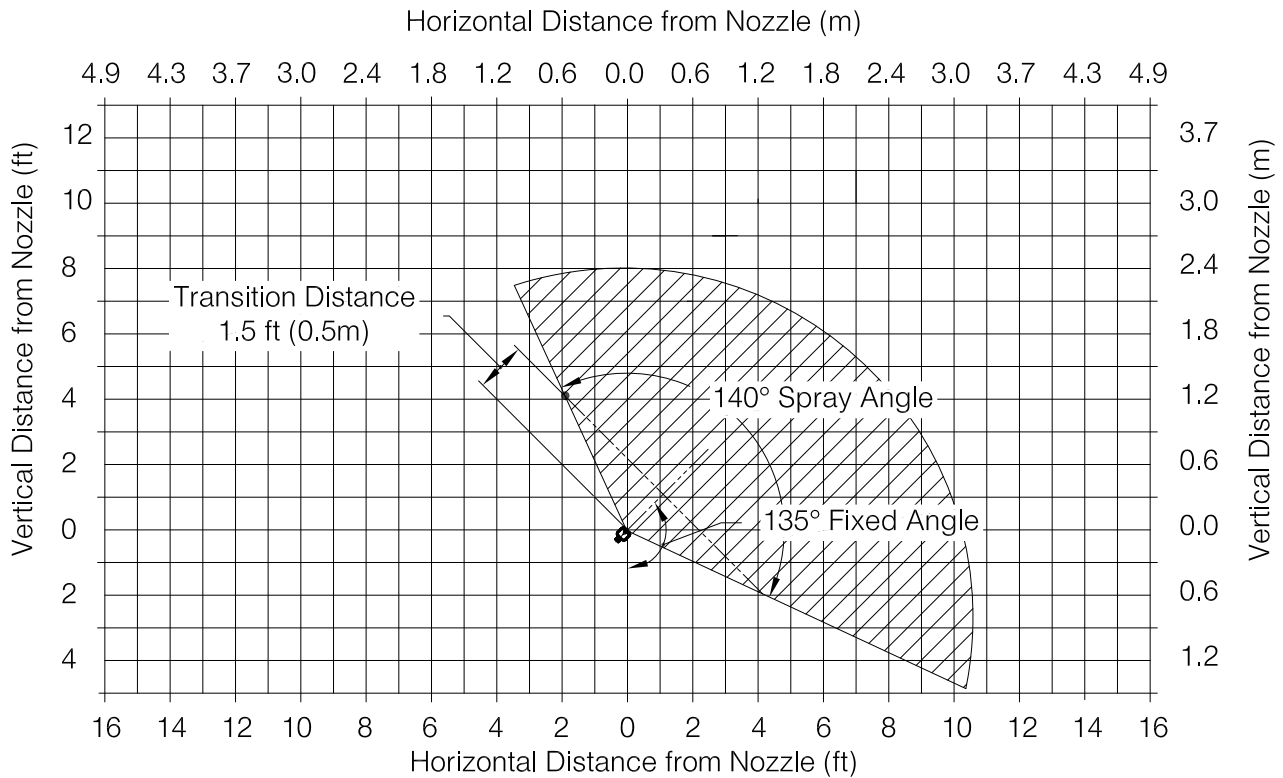
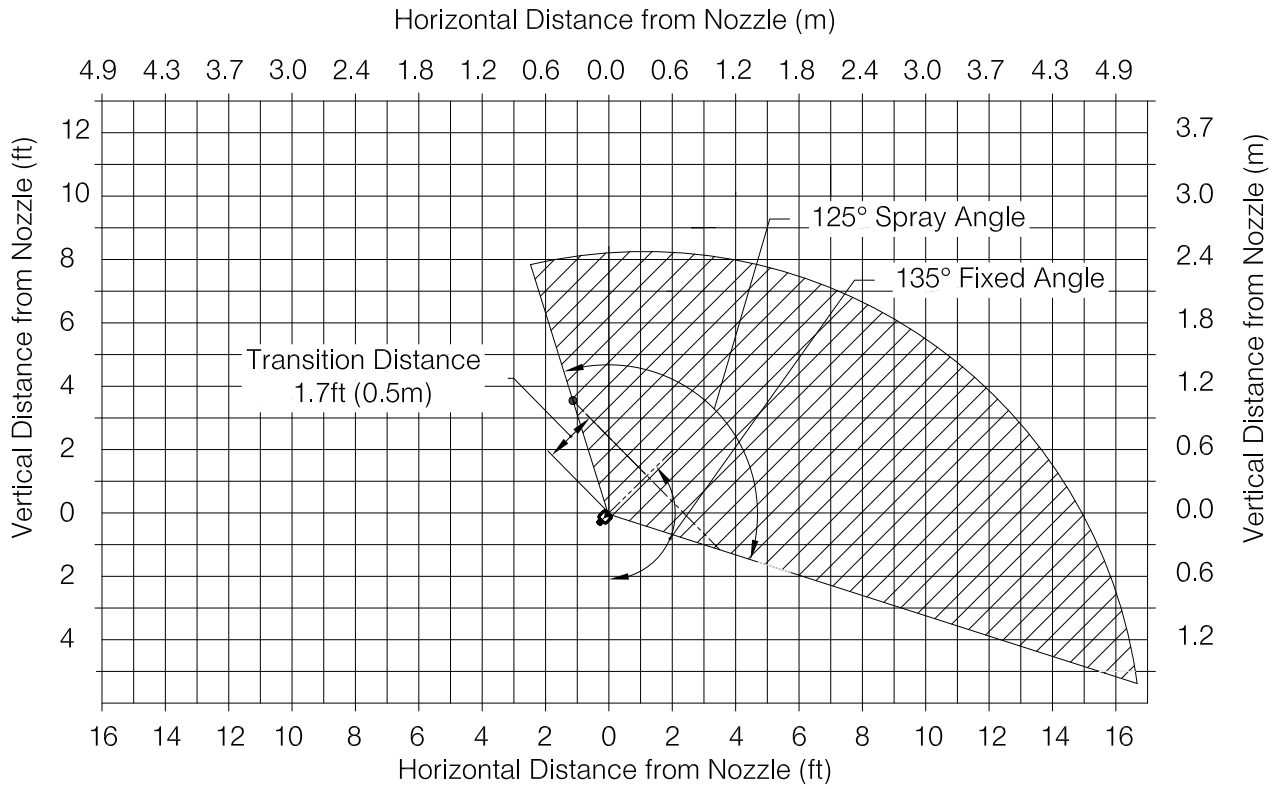


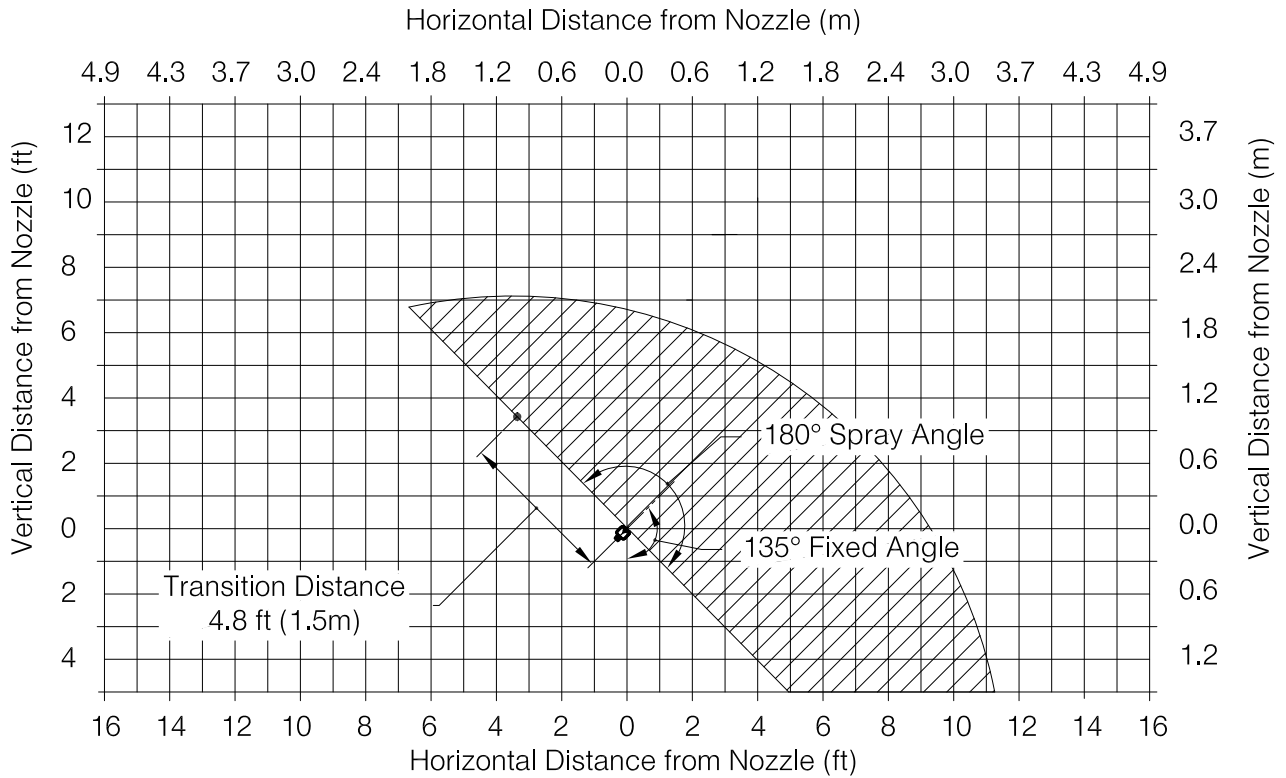
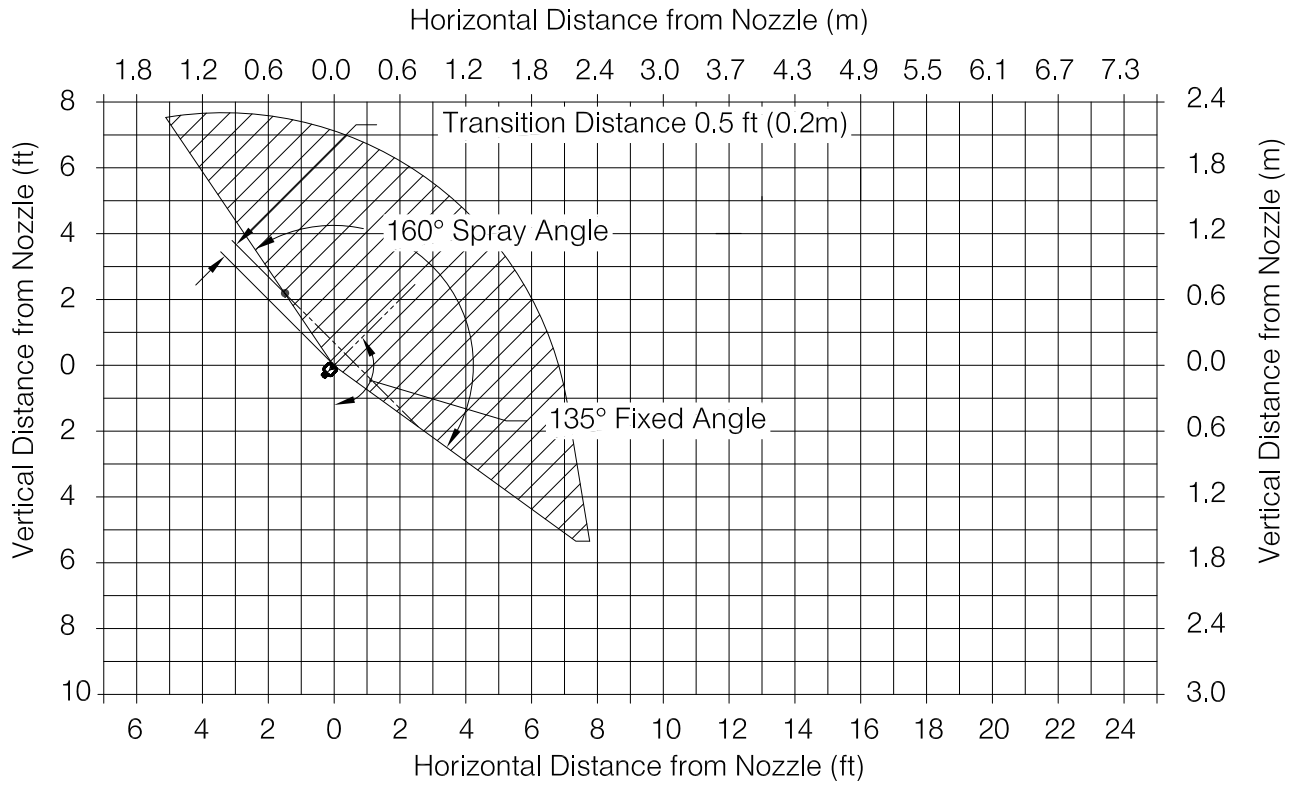
80° Spray Nozzle set at 135° Fixed Angle

Figure 51



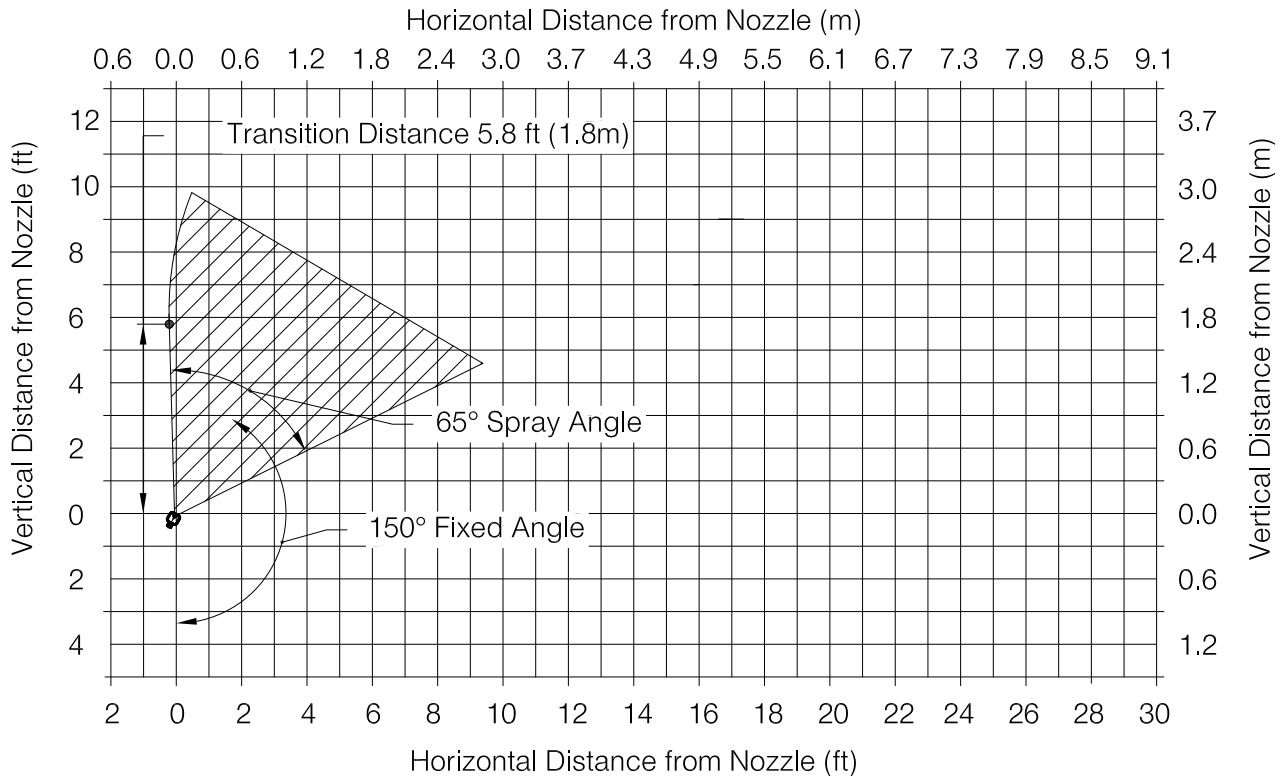






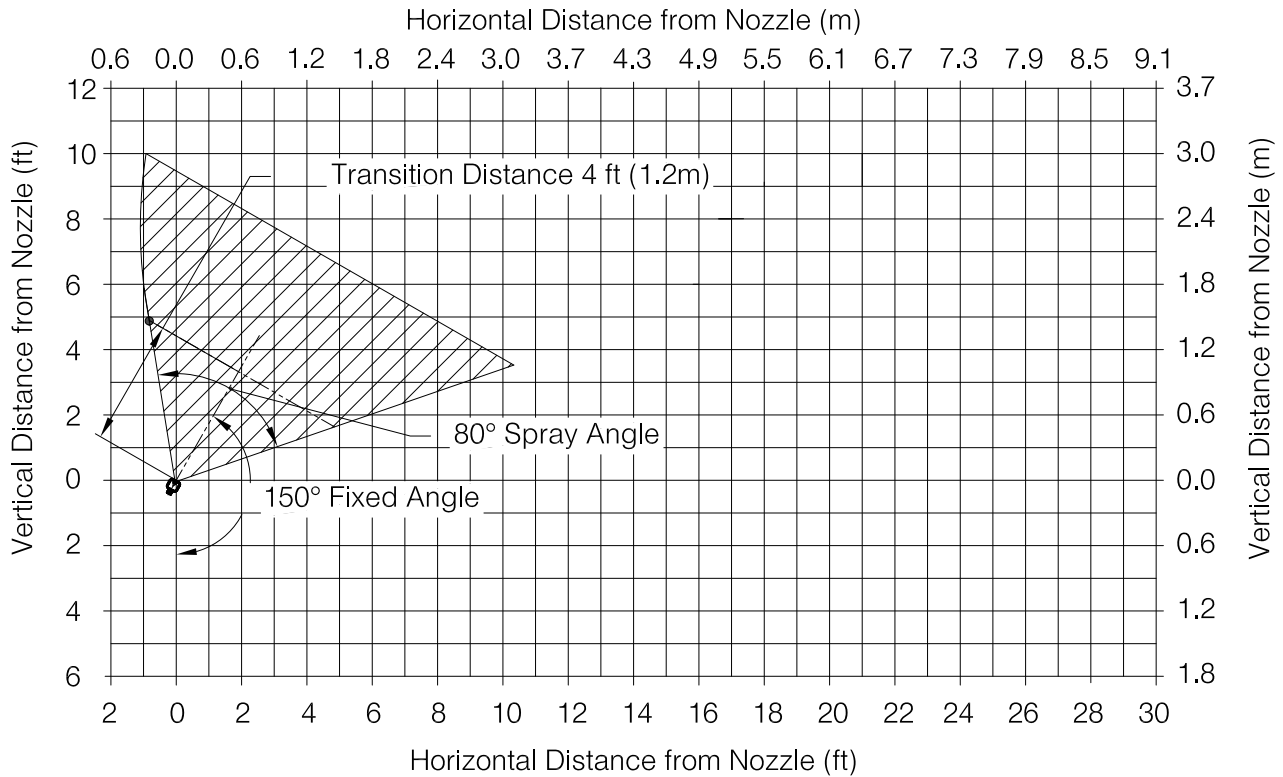
65° Spray Nozzle set at 150° Fixed Angle

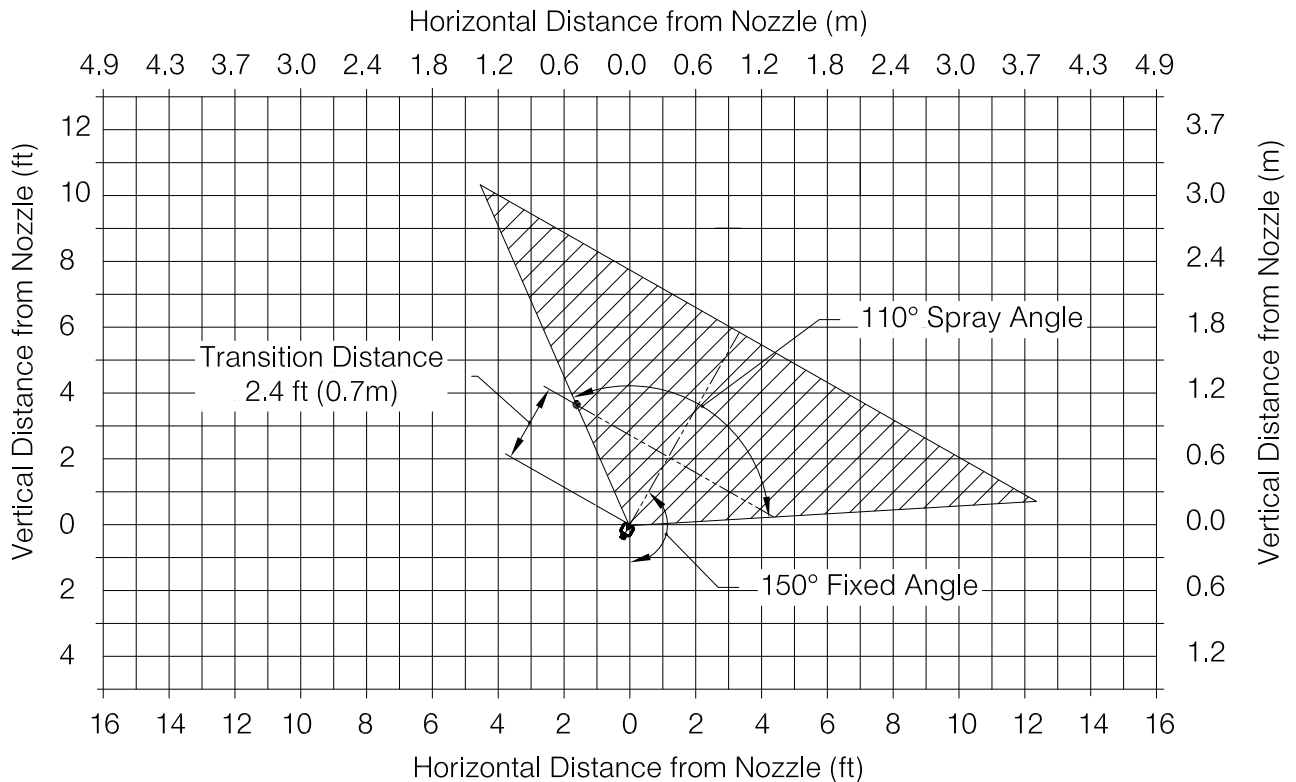
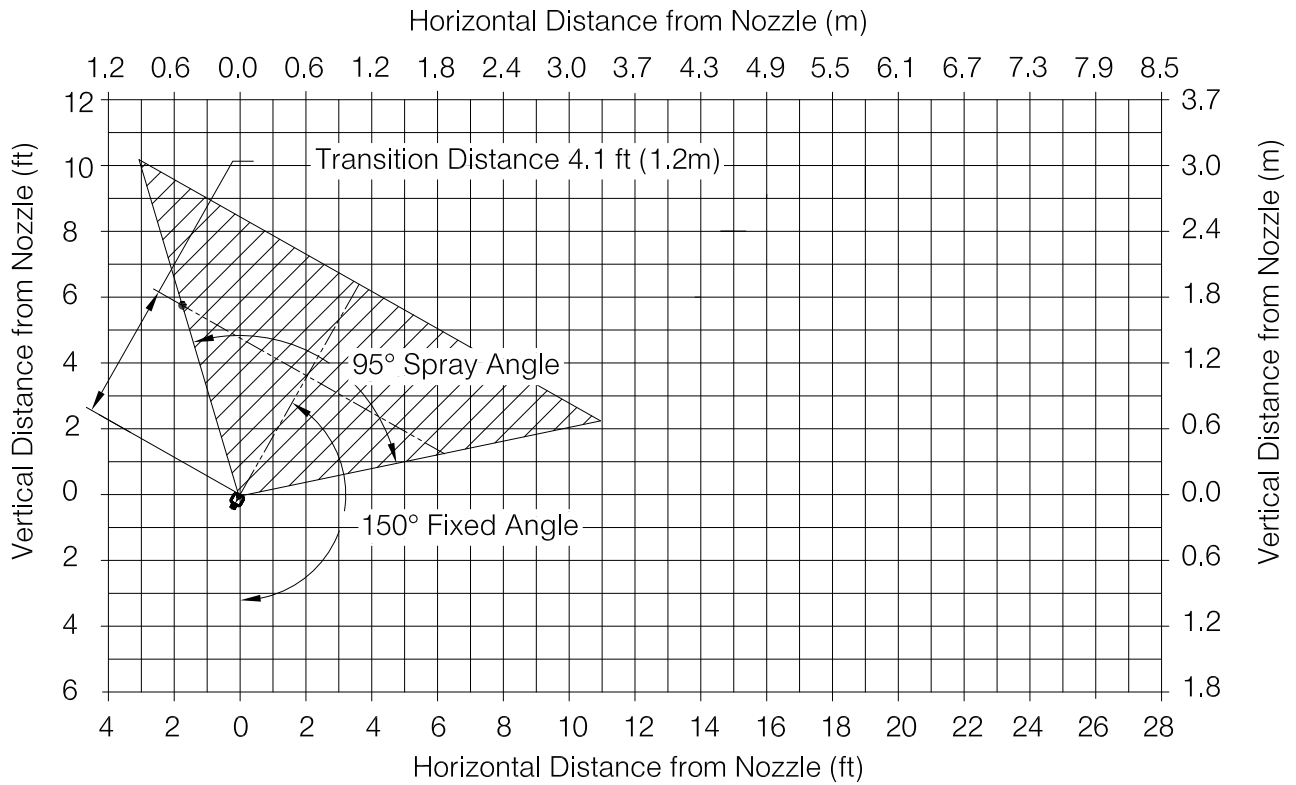
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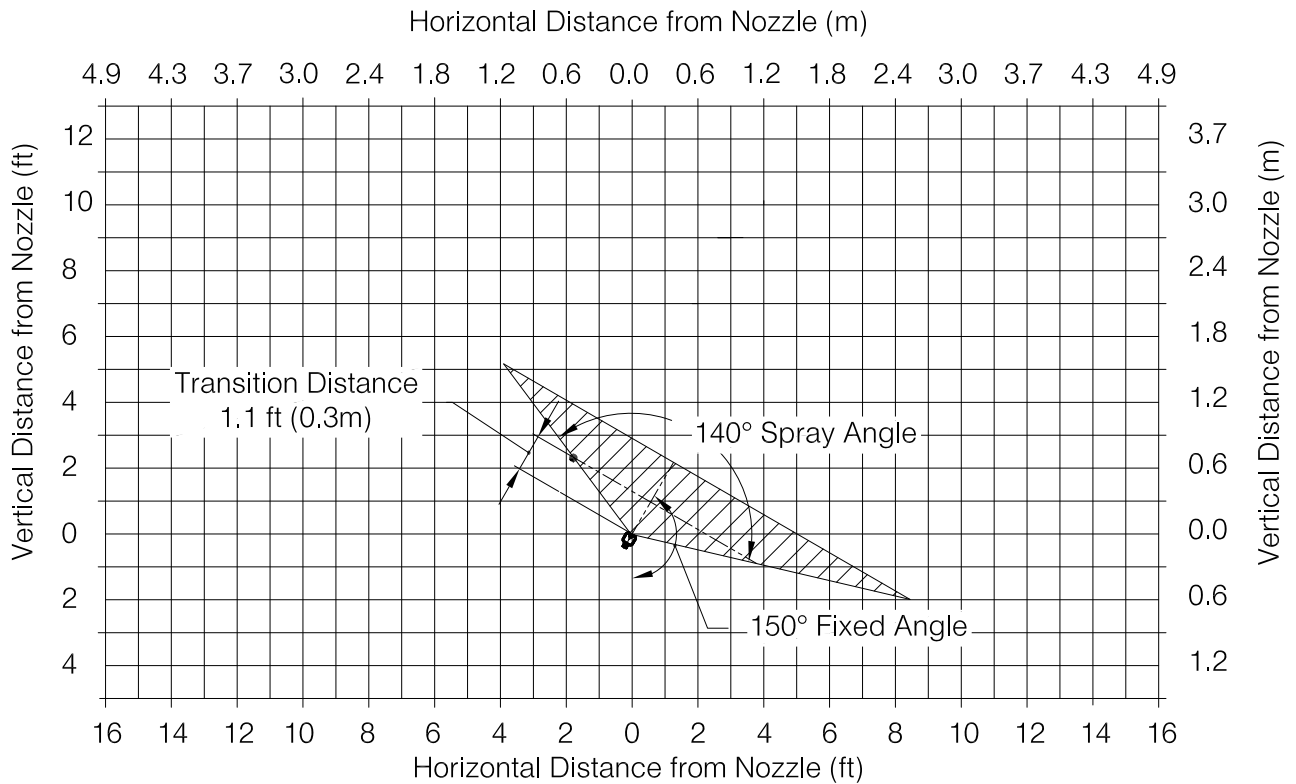
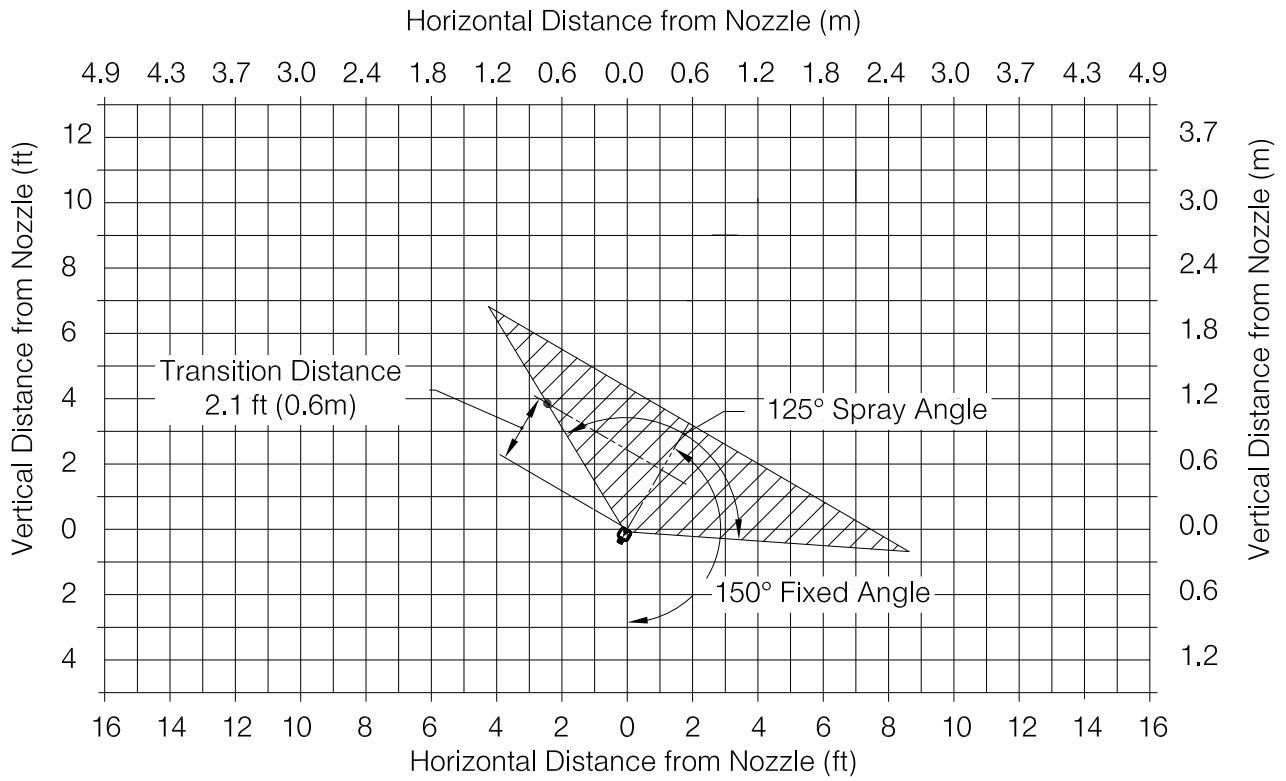


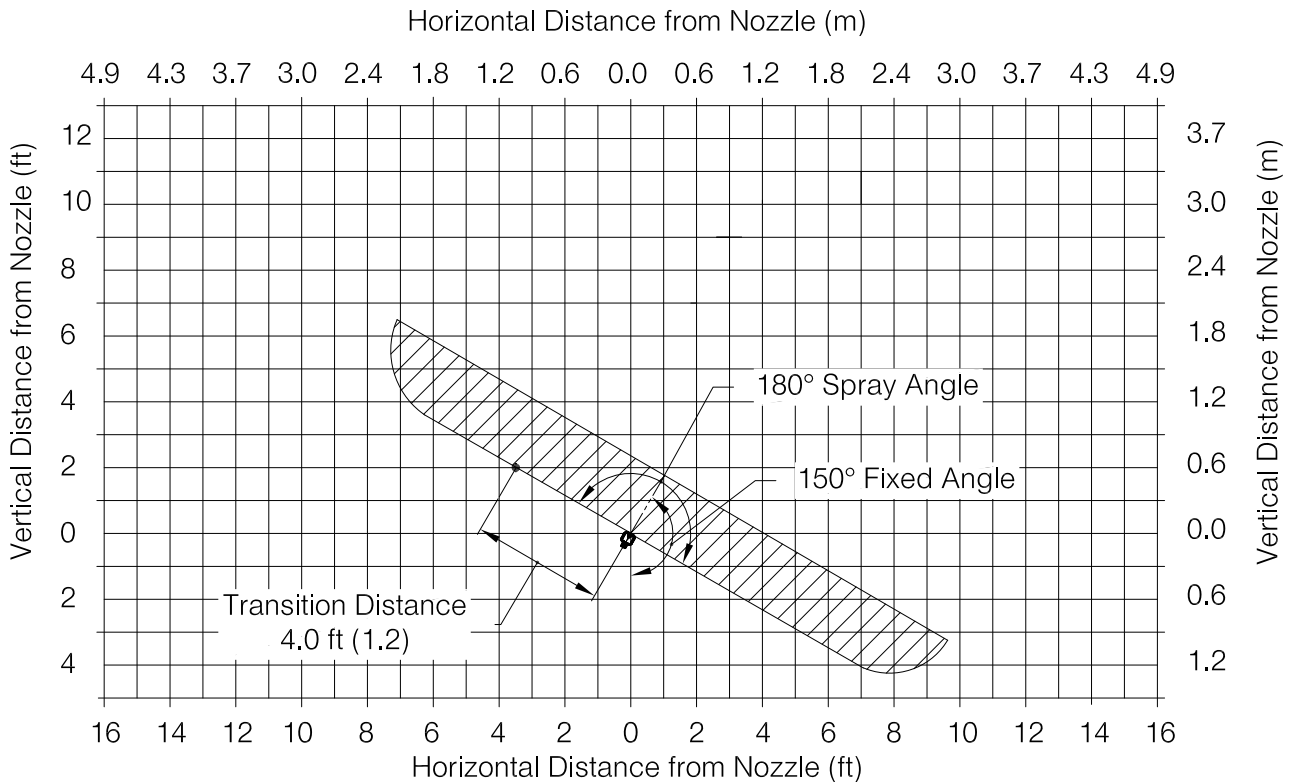
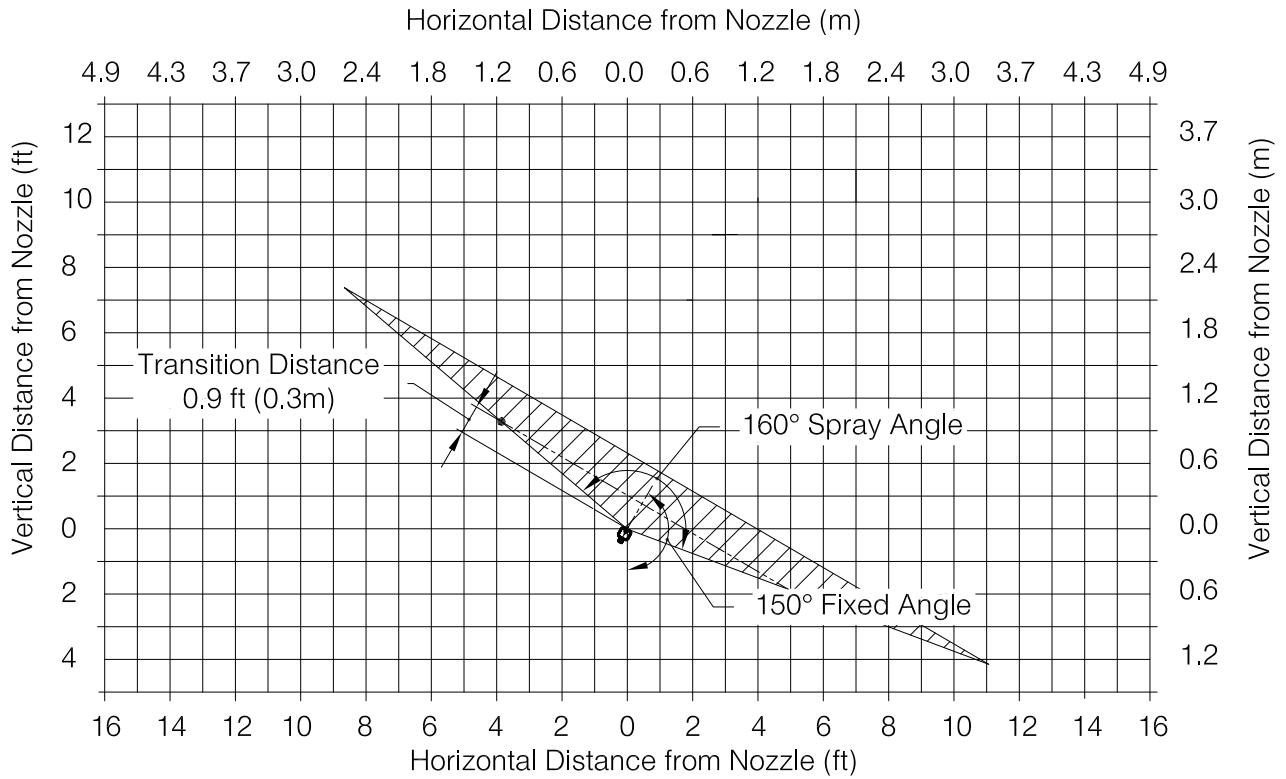
80° Spray Nozzle set at 150° Fixed Angle

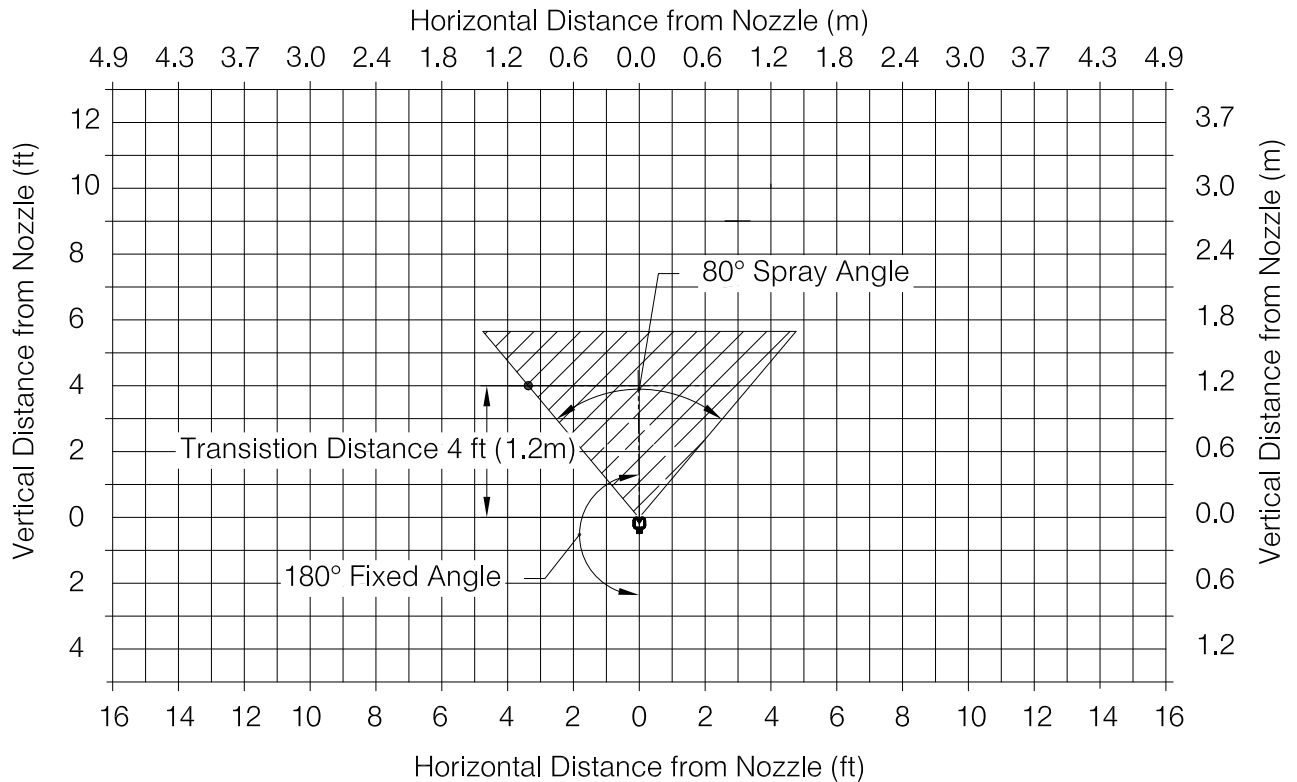
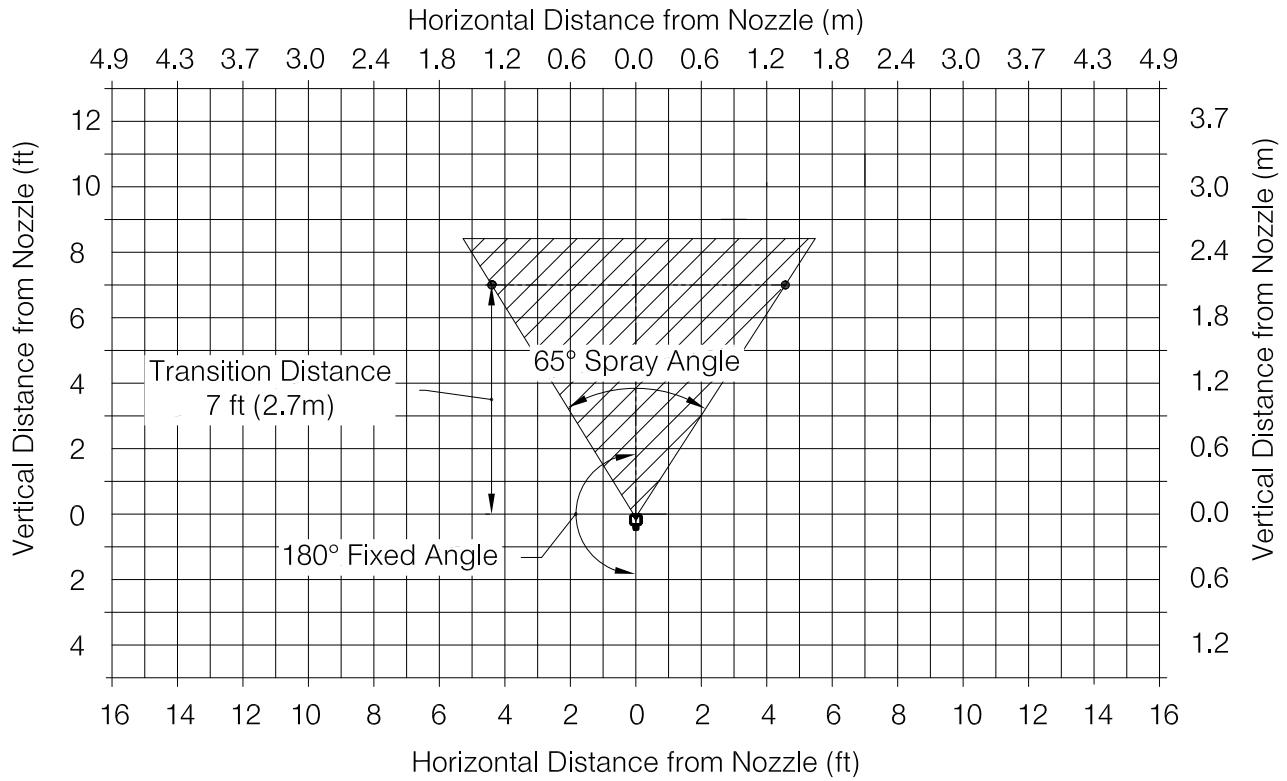
Figure 59

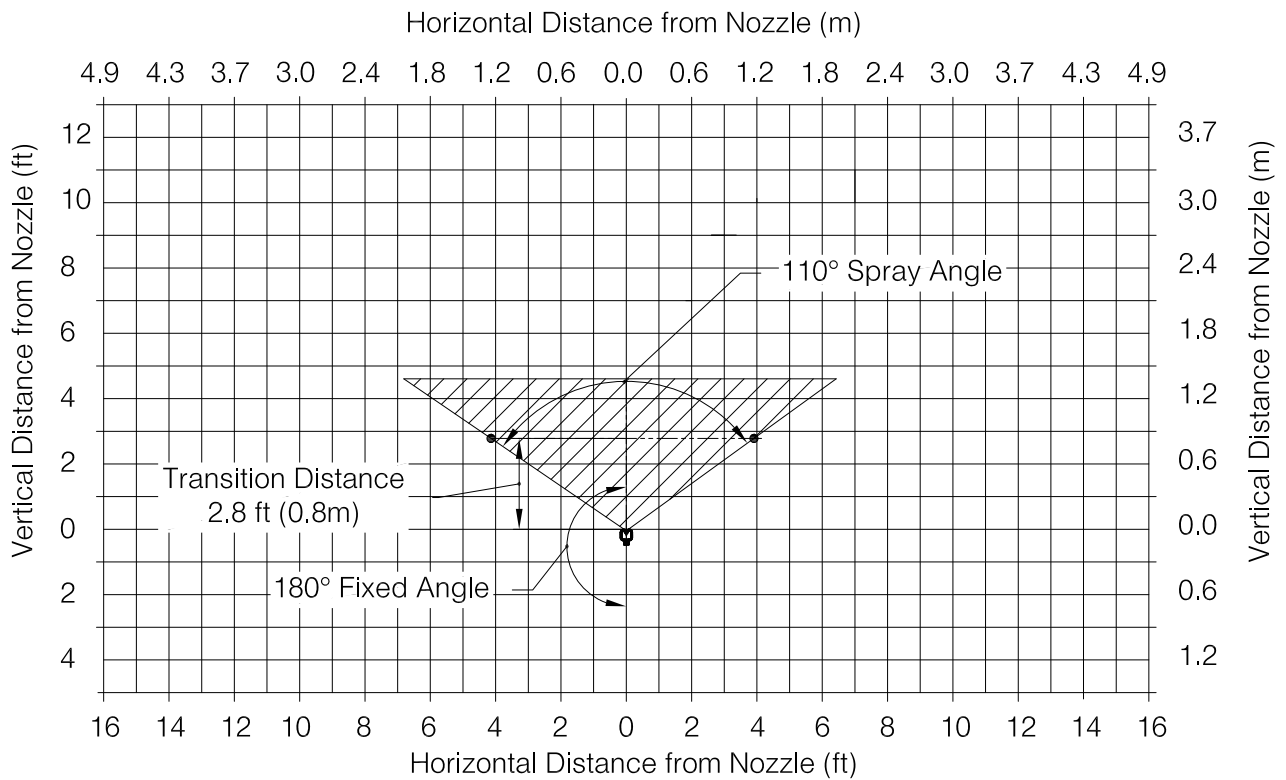
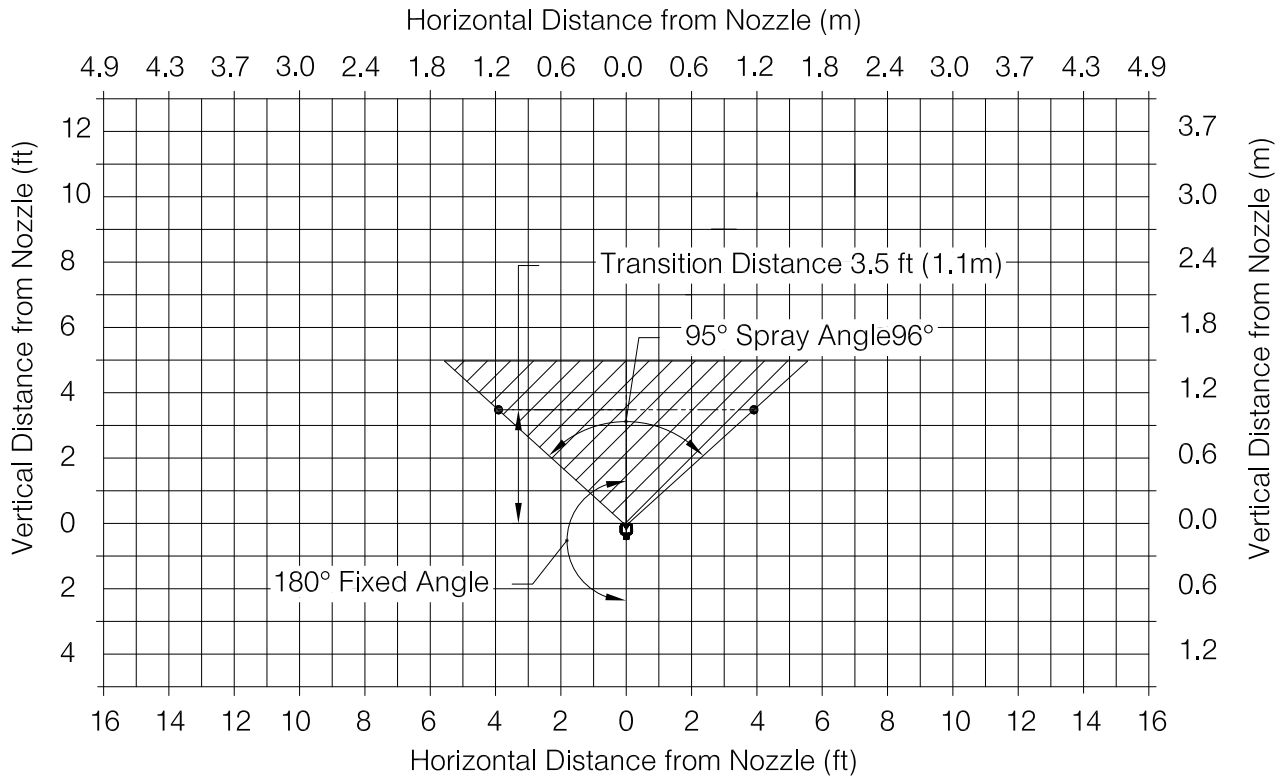


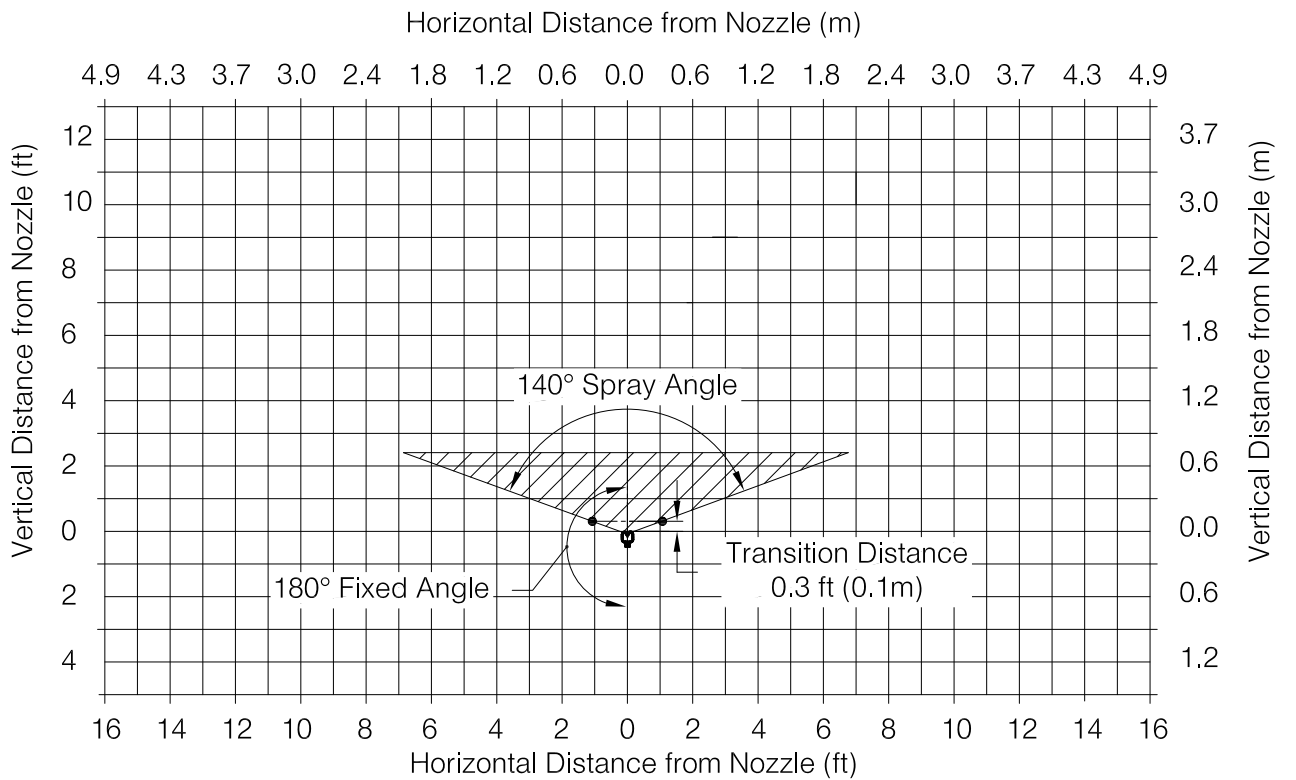
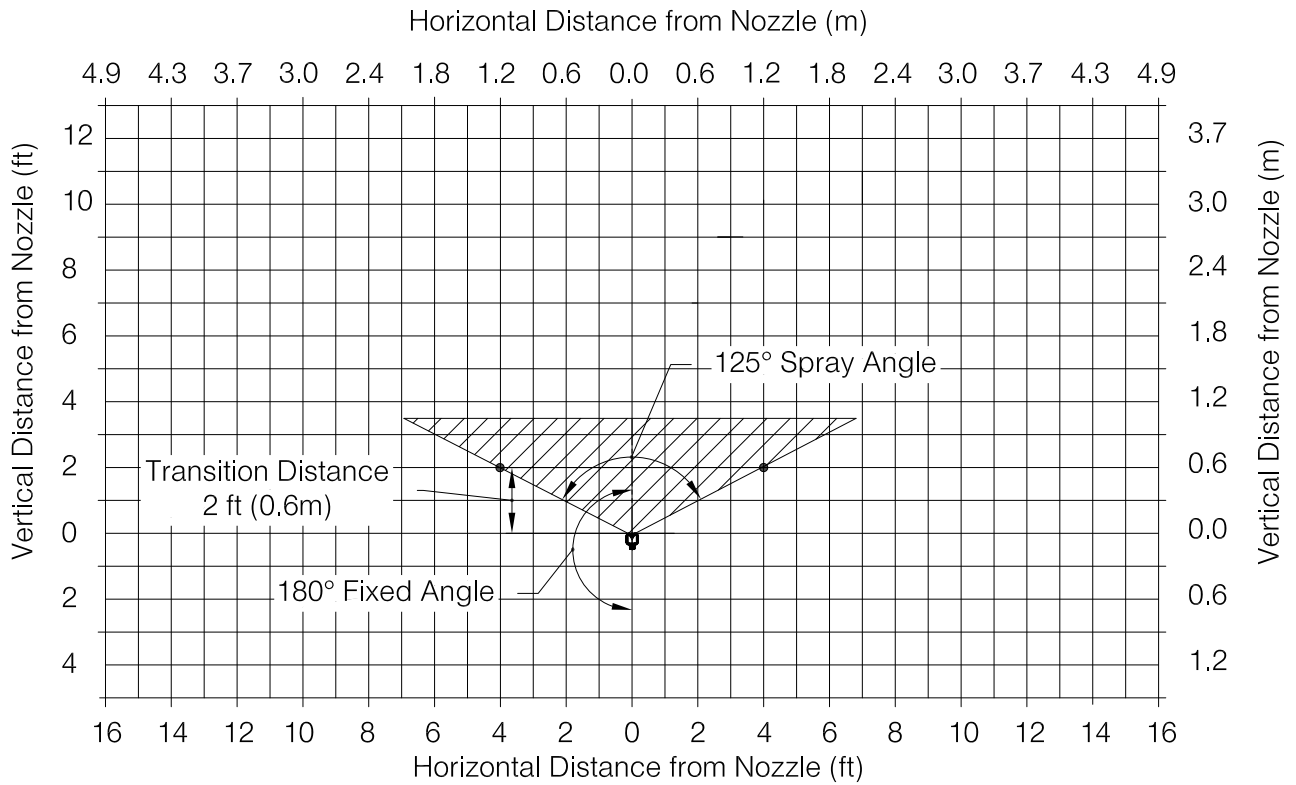


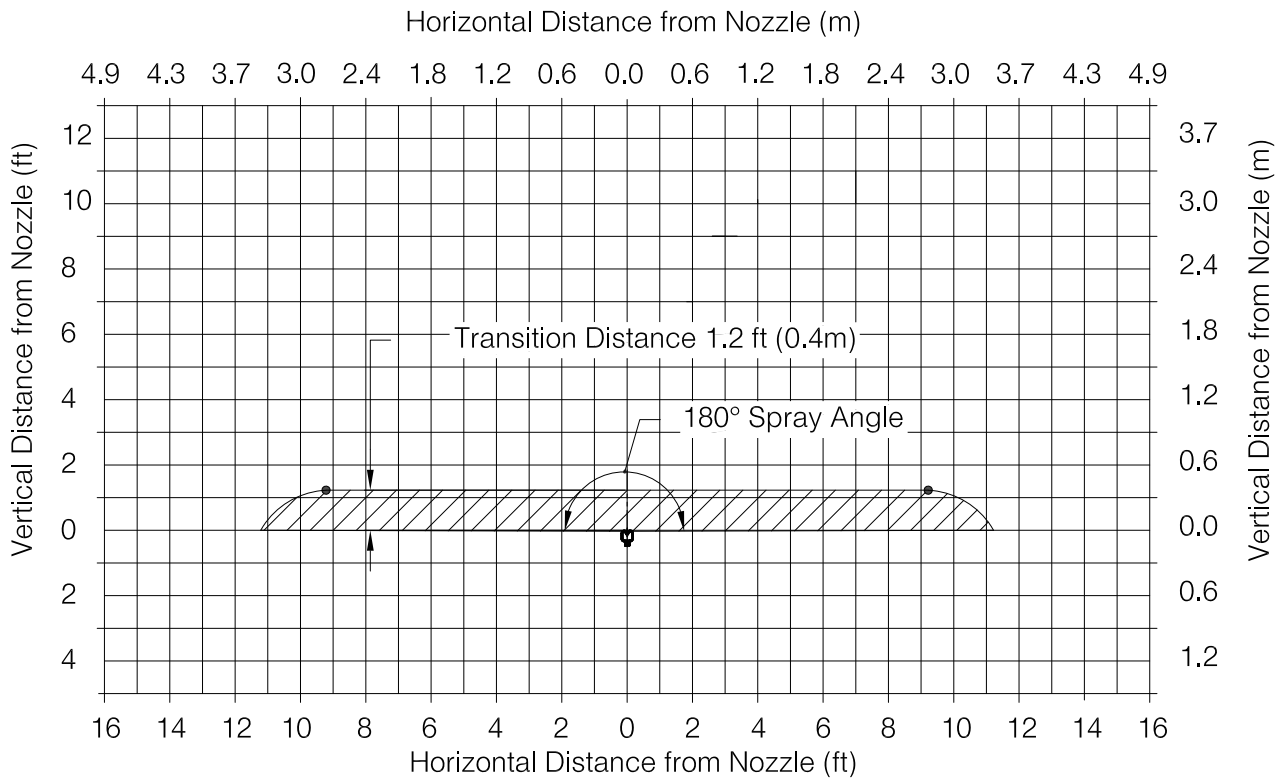
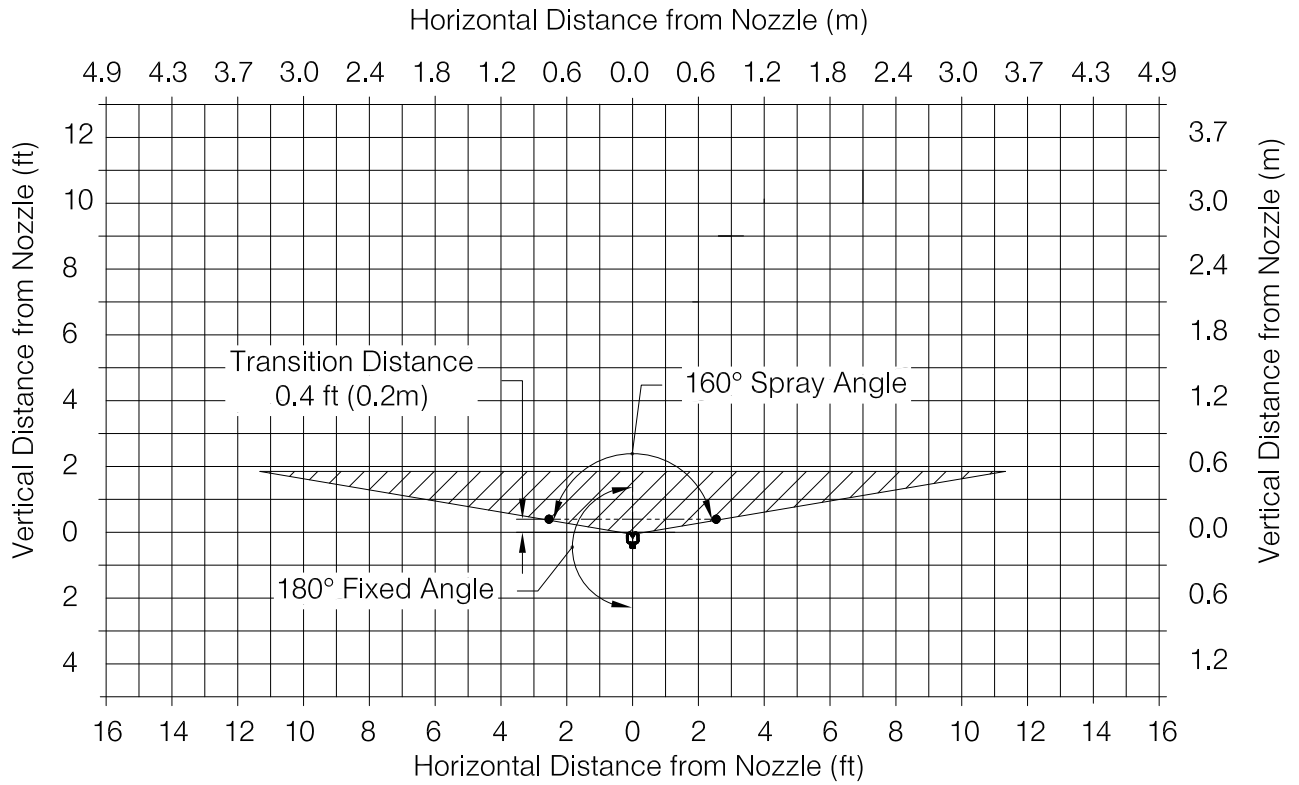












Model W2 Wrench



Any system maintenance or testing that involves placing a system out of service may eliminate the fire protection that is provided by 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.

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 8 to 18 lb/ft (11 to 24 N-m). Do not tighten nozzles over the maximum recommended installation torque. Exceeding 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 3/8 in. (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.

Guarantee

For the guarantee, terms, and conditions, visit www.reliablesprinkler.com.

Ordering Information

Specify:

Nozzle

- Model MV Nozzle
- Finish
- K-Factor
- Nozzle Angle
- Blow-off Plug (optional)

Wrench

- Model W2

Ordering Information: Model MV Medium Velocity Series Spray Nozzles

4EØ YY KK AAA

Finish YY	K-Factor gpm/psi ^{1/2} (L/min/bar ^{1/2}) KK	Nozzle Angle AAA
11 = Brass	12 = 1.2 (17)	065 = 65°
43 = ENT	18 = 1.8 (26)	080 = 80°
	23 = 2.3 (33)	095 = 95°
	30 = 3.0 (43)	110 = 110°
	41 = 4.1 (59)	125 = 125°
	56 = 5.6 (80)	140 = 140°
	72 = 7.2 (104)	160 = 160°
		180 = 180°