



# Theatrical Smoke, Fog and Haze Testing: Calibration Factors

Ramboll (formerly ENVIRON) collected the original exposure measurements on which the guidance levels for theatrical smoke and haze testing are based, and developed the air sampling protocol recommended by the Actors' Equity Association. As such, we are uniquely qualified to provide testing services and documentation that would be responsive to any inquiries made by Equity or your cast.



Ramboll has developed a protocol for using a Thermo Scientific PDR-1000AN aerosol monitor to measure concentrations of theatrical smoke, fog and haze. The monitor measures the light scattering produced by particles in the air and reports the results in terms of mass concentration (milligrams per cubic meter, or mg/m<sup>3</sup>) with the assumption that the particles in the air are a fine dust. Because different types of particles have different light scattering properties, the readings from the monitor need to be adjusted (or calibrated) when measuring something other than dust (such as fog droplets). The user converts the dust readings to the correct mg/m<sup>3</sup> readings for the fog droplets by multiplying the dust readings by a *calibration factor* for the particular fog fluid/fog machine combination being used for the fog, smoke or haze effect.

The following calibration factors have been developed and approved by Actors' Equity Association and the Broadway League for use in measuring theatrical smoke, fog and haze:

Approved Calibration Factors for Monitoring Theatrical Smoke, Fog, and Haze (Updated December 2019)						
Manufacturer	Machine		Fluid	Fluid Type	Calibration Factor	Reference
Advanced Entertainment Systems (AES) / MT-Electronic	Vario 6	Humidity 100% Fog: 25%	Cryo Fog Fluid	Glycol	0.86	(49)
		Humidity 100% Fog: 50%			1.40	(49)
	Vario 8	Humidity 100% Fog: 25%	Cryo Fog Fluid	Glycol	0.66	(49)
		Humidity 100% Fog: 50%			0.70	(49)
American DJ (ADJ)	Fog Fury 3000		Froggy's Fog Backwood Bay	Glycol	0.39	(35)
			Froggy's Fog Bog Fog	Glycol	1.62	(35)
			Froggy's Fog Cryo Freeze	Glycol	0.64	(35)
			Froggy's Fog Quick Blast	Glycol	0.64	(35)
			Froggy's Fog Velocity	Glycol	0.64	(35)
	Fog Storm 1700 HD		Froggy's Fog Cryo Freeze	Glycol	2.67	(35)
			Froggy's Fog Quick Blast	Glycol	2.67	(35)
Froggy's Fog Velocity			Glycol	2.67	(35)	
Antari	1520 RGB Upshot		Froggy's Fog Quick Blast	Glycol	1.28	(35)
	DNG-200 Low Fog		Antari FLC Fog Fluid	Glycol	3.40	(45)
			Froggy's Fog Cryo Freeze	Glycol	4.99	(35)

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Antari	F-1 Fazer	Antari FLG Fog Fluid	Glycol	0.68	(45)	
	F-4 Fazer	Antari FLG Fog Fluid	Glycol	1.06	(45)	
	F-5/F-5D Fazer	Froggy's Fog Faze Haze	Glycol	0.69	(35)	
	F-7 Smaze	Antari FLG Fog Fluid	Glycol	0.97	(45)	
	ICE	Froggy's Fog Cryo Freeze	Glycol	2.54	(35)	
	M-5	Froggy's Fog Amusement Park Fluid	Froggy's Fog Backwood Bay	Glycol	1.41	(35)
			Froggy's Fog Bog Fog	Glycol	1.03	(35)
			Froggy's Fog Cryo Freeze	Glycol	1.74	(35)
			Froggy's Fog Quick Blast	Glycol	1.74	(35)
			Froggy's Fog Velocity	Glycol	1.74	(35)
			Froggy's Fog Beam Splitter	Glycol	1.90	(35)
	M-8	Antari FLG Fog Fluid	Froggy's Fog Amusement Park Fluid	Glycol	1.35	(35)
			Froggy's Fog Backwood Bay	Glycol	1.35	(35)
			Froggy's Fog Bog Fog	Glycol	1.29	(35)
			Froggy's Fog Cryo Freeze	Glycol	2.65	(35)
			Froggy's Fog Quick Blast	Glycol	2.65	(35)
			Froggy's Fog Velocity	Glycol	2.65	(35)
	M-10	Froggy's Fog Bog Fog	Froggy's Fog Cryo Freeze	Glycol	2.46	(35)
			Froggy's Fog Quick Blast	Glycol	2.46	(35)
			Froggy's Fog Velocity	Glycol	2.46	(35)
			Froggy's Fog Beam Splitter	Glycol	1.90	(35)
	W-515D	Antari FLG Fog Fluid	Glycol	1.12	(45)	
	W-715x Fog Jet	Antari FLC Fog Fluid	Glycol	1.58	(44,45)	
X-515	Froggy's Fog Amusement Park Fluid	Froggy's Fog Backwood Bay	Glycol	1.07	(35)	
		Froggy's Fog Bog Fog	Glycol	1.43	(35)	
		Froggy's Fog Cryo Freeze	Glycol	1.74	(35)	
		Froggy's Fog Quick Blast	Glycol	1.74	(35)	
		Froggy's Fog Velocity	Glycol	1.74	(35)	
		Froggy's Fog Beam Splitter	Glycol	1.90	(35)	
Z-350	Froggy's Fog Beam Splitter	Glycol	1.90	(35)		
Z-380 Fazer	Antari FLG Fog Fluid	Glycol	0.49	(45)		
Aspire	K4 Vape Pen**	Damokee E-Liquid Daily Dose Fluid	Glycol	0.10	(48)	
Barco / High End Systems	F-100	Atmosphere HQ Fluid	Glycol	1.21	(10)	
		Atmosphere Cold Flow Formula	Glycol	2.41	(1)	
		Atmosphere Stage Formula	Glycol	0.25	(1)	
	FQ-100	Atmosphere HQ Fluid	Glycol	1.30	(26)	
Atmosphere Stage Formula		Glycol	0.96	(26)		
Blue Haze Entertainment (BHE)	1550	Froggy's Fog Amusement Park Fluid	Glycol	1.07	(35)	
		Froggy's Fog Backwood Bay	Glycol	1.07	(35)	
		Froggy's Fog Bog Fog	Glycol	1.43	(35)	
		Froggy's Fog Cryo Freeze	Glycol	1.74	(35)	
		Froggy's Fog Quick Blast	Glycol	1.74	(35)	
		Froggy's Fog Velocity	Glycol	1.74	(35)	
Chauvet	1800 FLEX	Froggy's Fog Amusement Park Fluid	Glycol	1.00	(35)	
		Froggy's Fog Backwood Bay	Glycol	1.00	(35)	
		Froggy's Fog Beam Splitter	Glycol	2.94	(35)	
		Froggy's Fog Bog Fog	Glycol	1.07	(35)	
		Froggy's Fog Cryo Freeze	Glycol	0.76	(35)	
		Froggy's Fog Quick Blast	Glycol	0.76	(35)	
		Froggy's Fog Techno	Glycol	2.94	(35)	
		Froggy's Fog Velocity	Glycol	0.76	(35)	

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<b>Manufacturer</b>	<b>Machine</b>		<b>Fluid</b>	<b>Fluid Type</b>	<b>Calibration Factor</b>	<b>Reference</b>
Chauvet	AmHaze ECO		Premium Haze Fluid	Glycol & Glycerol	0.17	(53)
	AmHaze II		Froggy's Fog Faze Haze	Glycol	0.83	(35)
	Geysler		Froggy's Fog Quick Blast	Glycol	1.62	(35)
CITC	AquaMax		Organic Haze Fluid	Glycerol	1.36	(33)
	Fantasy FX spray can		Fantasy FX Professional Haze	Mineral Oil	0.87	(20)
	Fog Max		Natural Fogging Fluid	Glycol	0.66	(4)
	HazeMax		Water Vapor Haze Fluid	Glycerol	1.87	(33)
	Starhazer		High Performance Fluid	Mineral Oil	0.87	(4)
ePuffer	D-1500/Robusto Electronic Cigar**		e-Liquid	Glycol	1.04	(30,42)
FireBase	SG-1300		Froggy's Fog Training Smoke FR-Fire Rescue Formula	Glycol	0.58	(35)
			Froggy's Fog Training Smoke Q-Quick Dissipating	Glycol	1.69	(35)
			Froggy's Fog Training Smoke XD-Extreme Density	Glycol	0.86	(35)
	SG-2600		Froggy's Fog Training Smoke FR-Fire Rescue Formula	Glycol	0.99	(35)
			Froggy's Fog Training Smoke XD-Extreme Density	Glycol	3.11	(35)
			Froggy's Fog Training Smoke	Glycol	1.41	(35)
	SG-M1500		Froggy's Fog Training Smoke FR-Fire Rescue Formula	Glycol	1.74	(35)
			Froggy's Fog Training Smoke Q-Quick Dissipating	Glycol	1.03	(35)
			Froggy's Fog Training Smoke XD-Extreme Density	Glycol	1.03	(35)
	SG-M1800		Froggy's Fog Training Smoke FR-Fire Rescue Formula	Glycol	1.35	(35)
			Froggy's Fog Training Smoke Q-Quick Dissipating	Glycol	2.65	(35)
			Froggy's Fog Training Smoke XD-Extreme Density	Glycol	1.29	(35)
	SG-M3000		Froggy's Fog Training Smoke Q-Quick Dissipating	Glycol	2.46	(35)
			Froggy's Fog Training Smoke XD-Extreme Density	Glycol	2.62	(35)
	Froggy's Fog	Poseidon	Humidity: 50-100% Fan: 15-65% Fog: 50%	Froggy's Fog Aqua Fog Fluid/Long Distance Formula	Glycol	0.43
Humidity: 50-100% Fan: 15-65% Fog: 70%			Froggy's Fog Aqua Fog Fluid/Long Distance Formula	Glycol	0.55	(54)
Humidity: 50% Fan: 35-65% Fog: 80%			Froggy's Fog Aqua Fog Fluid/Short Distance Formula	Glycol	0.67	(54)
hazebase	Base Classic		Froggy's Fog Amusement Park Fluid	Glycol	0.58	(35)
			Froggy's Fog Backwood Bay	Glycol	0.58	(35)
			Froggy's Fog Bog Fog	Glycol	0.86	(35)
			Froggy's Fog Cryo Freeze	Glycol	1.69	(35)
			Froggy's Fog Quick Blast	Glycol	1.69	(35)
			Froggy's Fog Velocity	Glycol	1.69	(35)
			Ultratec Molecular Fog Fluid	Glycol	2.15	(43)
	Base Hazer Pro		Base Hazer Liquid	Glycol	0.43	(35)
			Froggy's Fog Faze Haze	Glycol	0.76	(35)
	Base High Power 220V		Froggy's Fog Backwood Bay	Glycol	0.99	(35)
Froggy's Fog Bog Fog			Glycol	3.11	(35)	
Le Maitre Ltd.	G300		Molecular Fog Fluid	Glycol	0.53	(4,24,25)
			Quick Dissipating	Glycol	2.65	(4,24,25)
			Regular Haze (C-Beam) Fluid	Glycerol	0.09	(10,24,25)

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<b>Manufacturer</b>	<b>Machine</b>	<b>Fluid</b>	<b>Fluid Type</b>	<b>Calibration Factor</b>	<b>Reference</b>
Le Maitre Ltd.	G300	Standard Smoke Fluid	Glycol	0.30	(4,9,24,25)
	G300/LSG/Freezefog Pro or equivalent chiller	Molecular Fog Fluid	Glycol	4.95*	(7,25,28)
	G-Force, Gforce3	Molecular Fog Fluid	Glycol	0.53	(4,24,28, 47)
		Quick Dissipating	Glycol	2.65	(4,24,28, 47)
		Standard Smoke Fluid	Glycol	0.30	(4,9,24,25, 47)
	G-Force/Gforce3/LSG/Freezefog Pro or equivalent chiller	Molecular Fog Fluid	Glycol	4.95*	(7,25,28, 47)
	Mini Mist	Standard Smoke Fluid	Glycol	2.24	(10,25)
	MVS	Froggy's Fog Neutronic Haze Fluid	Glycerol	0.35	(35)
	Neutron XS	Froggy's Fog Neutronic Haze Fluid	Glycerol	0.09	(35)
		Neutron Haze Fluid	Glycerol	0.12	(2,25)
Opti Mist Ranger	Mini Mist Canister	Glycol	3.01	(1,25)	
Look Solutions	Cobra 1.8	Quick-Fog Fluid	Glycol	1.51	(52)
		Regular-Fog Fluid	Glycol	0.76	(52)
		Slow-Fog Fluid	Glycol	1.10	(52)
	Cobra 1.8 / CryoGate	Cryo-Fog Fluid	Glycol	3.93	(52)
	Cobra 1.8 / LSG	Cryo-Fog Fluid	Glycol	1.72	(51)
	Cryo-Fog	Cryo-Fog Fluid	Glycol	0.91	(16,21)
	Orka	Regular-Fog Fluid	Glycol	0.23	(8)
	Power Tiny	Tiny Fluid	Glycol	0.49	(15)
	Tiny Compact/Tiny C07	Tiny Fluid	Glycol	0.76	(4,21)
	Tiny Fogger/Tiny F07	Tiny Fluid	Glycol	0.76	(4,21)
	Tiny FX/Tiny CX	Tiny Fluid	Glycol	0.71	(31,37)
	Tiny S	Tiny Fluid	Glycol	0.69	(31)
	Unique/Unique2 Hazer	Unique Fluid	Glycol	0.30	(4,12)
	Uniques Hazer fitted with an accumulator box	Unique Fluid	Glycol	0.26	(46)
	Viper (NT, S, 2.6)	Quick-Fog Fluid	Glycol	2.02	(17,50)
		Regular-Fog Fluid	Glycol	1.46	(4,12,50)
		Slow-Fog Fluid	Glycol	0.90	(31,50)
	Viper / LSG MKII or equivalent chiller	Quick-Fog Fluid	Glycol	0.89	(32,50)
Martin Professional	Jem Compact Hazer Pro	JEM C-Plus Haze Fluid	Glycol	0.70	(38,55)
	Jem Glaciator	JEM Low-Fog Fluid	Glycol	3.41	(4,55)
	Jem Glaciator X-Stream	JEM Low-Fog Fluid, High Density	Glycol	3.23	(23,55)
	Jem Hazer Pro	JEM C-Plus Fluid	Glycol	0.88	(38,55)
	Jem Ready 365	JEM R365 Haze Fluid	Glycol & Glycerol	0.24	(38)
	Jem Roadie	JEM Pro-Fog Fluid	Glycol	0.62	(27,55)
	Jem ZR12-DMX	JEM Pro-Fog Fluid	Glycol	1.12	(4,55)
	Jem ZR24/7 Hazer	RUSH & THRILL Haze Fluid	Glycol	0.76	(5,41,55)
	Jem ZR33 Hi-Mass	Froggy's Fog Cryo Freeze	Glycol	2.20	(35)
		Froggy's Fog Quick Blast	Glycol	2.20	(35)
		Froggy's Fog Velocity	Glycol	2.20	(35)
		JEM Pro-Fog Fluid	Glycol	0.79	(23,55)
		JEM Pro-Fog Fluid, Extra Quick Dissipating	Glycol	2.31	(23,55)
	Jem ZR44	Froggy's Fog Backwood Bay	Glycol	0.77	(35)
		Froggy's Fog Bog Fog	Glycol	1.40	(35)
		Froggy's Fog Cryo Freeze	Glycol	0.95	(35)
		Froggy's Fog Quick Blast	Glycol	0.95	(35)
	K-1	Froggy's Fog Velocity	Glycol	0.95	(35)
Froggy's Fog K-rasy Haze		Glycol	0.49	(35)	

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<b>Manufacturer</b>	<b>Machine</b>	<b>Fluid</b>	<b>Fluid Type</b>	<b>Calibration Factor</b>	<b>Reference</b>
Martin Professional	Magnum 2000	Froggy's Fog Backwood Bay	Glycol	0.93	(35)
		Froggy's Fog Bog Fog	Glycol	1.21	(35)
		Froggy's Fog Cryo Freeze	Glycol	1.01	(35)
		Froggy's Fog Quick Blast	Glycol	1.01	(35)
	Magnum 2500Hz	RUSH & THRILL Haze Fluid	Glycol	0.28	(23,41,55)
MDG Fog Generators	Mini-Max	MDG Dense Fluid	Glycol	3.21	(1)
	Atmosphere APS	MDG Neutral Fluid	Mineral Oil	0.78	(1)
	MAX 3000 APS	MDG Neutral Fluid	Mineral Oil	0.78	(1)
	MDG MAX 3000 APS through accumulator box	MDG Neutral Fluid	Mineral Oil	0.27	(6)
New Rule FX	Electronic Actor Cigarette Prop**	Cartridge Fluid	Glycol	0.44	(36)
Pure Smoke	Electronic Cigarette**	Electronic Cigarette Flavors	Glycol	0.33	(29)
Reel EFX, Inc.	DF-50	Diffusion Fluid	Mineral Oil	0.78	(1)
		Froggy's Fog DaFiddy Oil-Based Haze	Mineral Oil	0.40	(35)
		Master Fog DEE-EFF-50	Mineral Oil	0.37	(40)
Robe	Fog 1550 FT	Froggy's Fog Amusement Park Fluid	Glycol	1.07	(35)
		Froggy's Fog Backwood Bay	Glycol	1.07	(35)
		Froggy's Fog Bog Fog	Glycol	1.43	(35)
		Froggy's Fog Cryo Freeze	Glycol	1.74	(35)
		Froggy's Fog Quick Blast	Glycol	1.74	(35)
Rosco Laboratories	1500 / 1600	Rosco Clear Fog Fluid	Glycol	1.82	(1)
		Rosco Fog Fluid	Glycol	1.27	(1)
		Rosco Light Fog Fluid	Glycol	1.38	(1)
		Rosco Stage & Studio Fluid	Glycol	1.56	(1)
	1750	Rosco Fog Fluid	Glycol	0.58	(19)
		Rosco Stage & Studio Fluid	Glycol	0.67	(19)
	Alpha 900	Rosco Clear Fog Fluid	Glycol	1.82	(1)
		Rosco Fog Fluid	Glycol	1.27	(1)
		Rosco Light Fog Fluid	Glycol	1.38	(1)
		Rosco Stage & Studio Fluid	Glycol	1.56	(1)
	Delta 3000	Rosco Clear Fog Fluid	Glycol	1.43	(4)
		Rosco Fog Fluid	Glycol	1.00	(4)
		Rosco Light Fog Fluid	Glycol	1.35	(4)
		Rosco Stage & Studio Fluid	Glycol	1.97	(4)
	Delta Hazer	Rosco Delta Hazer Fluid	Glycol	0.71	(18)
	Mini-V	Rosco Fog Fluid	Glycol	0.55	(34)
		Rosco Stage & Studio Fluid	Glycol	0.85	(34)
	PF-1000	Rosco Clear Fog Fluid	Glycol	1.82	(1)
		Rosco Fog Fluid	Glycol	1.27	(1)
		Rosco Light Fog Fluid	Glycol	1.38	(1)
Rosco Stage & Studio Fluid		Glycol	1.56	(1)	
V-Hazer	Rosco V-Hazer Fluid	Glycol	0.68	(34)	
Vapour	Rosco Fog Fluid	Glycol	0.44	(34)	
	Rosco Stage & Studio Fluid	Glycol	0.85	(34)	
Vapour Plus	Rosco Fog Fluid	Glycol	0.82	(34)	
	Rosco Stage & Studio Fluid	Glycol	0.78	(34)	
SFX Design	Fog Master FM-1	Aquafog Fluid	Glycol	0.19	(3)
Smoke Factory	Tour Hazer	Tour Hazer Fog Fluid	Glycol	0.30	(4)
Smoke In Style	Electronic Pipe Prop**	FeelLife E-Liquid	Glycol & Glycerol	0.42	(39)
Ultratec	G100	Directors Choice	Glycol	4.17	(1,9,25)

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Special Effects (fka Le Maitre Special Effects)		Extra Quick Dissipating	Glycol	3.17	(1,25)
		Quick Dissipating	Glycol	3.45	(1,25)
	G150	Directors Choice	Glycol	4.17	(1,9,25)
		Extra Quick Dissipating	Glycol	3.17	(1,25)
		Molecular Fog Fluid	Glycol	2.58	(1,25)
		Pro Beam (Long Lasting)	Glycol	1.42	(4,25)
		Quick Dissipating	Glycol	3.45	(1,25)
		G3000	Directors Choice	Glycol	0.30
	Molecular Fog Fluid		Glycol	0.53	(4,24,25)
	Pro Beam (Long Lasting)		Glycol	0.67	(4,24,25)
	Quick Dissipating		Glycol	2.65	(4,24,25)
	Regular Haze Fluid		Glycerol	0.09	(10,24,25)
	Froggy's Fog Amusement Park Fluid		Glycol	1.07	(25,35)
	Froggy's Fog Backwood Bay		Glycol	1.07	(25,35)
	Froggy's Fog Bog Fog		Glycol	0.88	(25,35)
	Froggy's Fog Cryo Freeze		Glycol	2.96	(25,35)
	Froggy's Fog Quick Blast		Glycol	2.96	(25,35)
	Froggy's Fog Velocity		Glycol	2.96	(25,35)
	G3000/LSG or equivalent chiller	Molecular Fog Fluid	Glycol	4.95*	(7,25)
	Power Fog Industrial (PFI) or PFI 9D	Directors Choice	Glycol	0.99	(4,9,11,25)
		Molecular Fog Fluid	Glycol	2.77	(4,11,25)
		Pro Beam (Long Lasting)	Glycol	1.36	(4,11,25)
		Quick Dissipating	Glycol	1.37	(4,11,25)
	Power Fog Industrial 9D (PFI 9D) with LSG-MKII or equivalent chiller	Extra Quick Dissipating	Glycol	1.23	(22,25)
		Molecular Fog Fluid	Glycol	0.75	(13,25)
		Quick Dissipating	Glycol	0.21	(22,25)
	Radiance Hazer	Froggy's Fog Neutronic Haze Fluid	Glycerol	1.06	(25,35)
		Neutron/Luminous 7 Haze Fluid	Glycerol	0.26	(14,25)
	Show Fogger Pro	Directors Choice	Glycol	0.44	(4,9,25)
		Pro Beam (Long Lasting)	Glycol	0.44	(4,25)
Quick Dissipating		Glycol	2.56	(4,25)	
Stage Fogger DMX	Directors Choice	Glycol	0.99	(4,9,25)	
	Molecular Fog Fluid	Glycol	2.77	(4,25)	
	Pro Beam (Long Lasting)	Glycol	1.36	(4,25)	
	Quick Dissipating	Glycol	1.37	(4,25)	

**Notes:**

\* Due to monitor overloading during the calibration testing for this combination, the resulting calibration factor of 4.95 is known to be overestimated. This value can be used as a conservative (i.e., health protective) screening value. If monitoring results using this calibration factor result in exposures exceeding the guidance levels, it is recommended that additional testing to refine this calibration factor be conducted.

\*\* Testing of vape pens, e-cigarettes and related products is limited to second hand exposure after being exhaled by the user; the initial amount inhaled directly from the product was not measured.

Disclaimer: This table does not represent an endorsement of any equipment-fluid combination by Ramboll. Please note that the use of fluids in machines other than those recommended by the manufacturer is subject to the equipment manufacturer's terms and conditions.

## References:

1. *Equipment-Based Guidelines for the Use of Theatrical Smoke and Haze*, prepared by ENVIRON International Corporation for the Equity-League Pension and Health Trust Funds, June 8, 2001.
2. *Theatrical Haze and Fog Testing for Mamma Mia! Winter Garden Theatre*, prepared by ENVIRON International Corporation for Mamma Mia! Broadway and Nina Lannan Associates, December 12, 2001.
3. *Theatrical Smoke and Haze Testing for The Phantom of the Opera, Majestic Theatre*, prepared by ENVIRON International Corporation for Alan Wasser Associates, July 2002.
4. *Calibration Factors for Monitoring Theatrical Smoke and Haze*, prepared by ENVIRON International Corporation for Entertainment Services and Technology Association, December 11, 2002.
5. *Development of Calibration Factors for Monitoring Theatrical Smoke and Haze: Jem 24/7 Hazer with Pro-Haze Fluid*, prepared by ENVIRON International Corporation for Martin Professional, August 2003.
6. *Theatrical Smoke and Haze Testing, Wicked the Musical, Gershwin Theatre*, prepared by ENVIRON International Corporation for Stone Productions, July 2004.
7. *Theatrical Smoke Testing at Bombay Dreams*, prepared by ENVIRON International Corporation for Bombay Dreams NY L.L.C., July 30, 2004.
8. *Development of Calibration Factors for Monitoring Theatrical Smoke and Haze: Look Solutions Orka with Regular-Fog Fluid*, prepared by ENVIRON International Corporation for Look Solutions, April 1, 2005.
9. Letter from Le Maitre Special Effects to ENVIRON International Corporation regarding name change of Regular Fog Fluid to Directors Choice, December 5, 2005.
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**Manufacturers:**

AES – <http://aesquaafog.com>

Antari – <http://www.antari.com>

Barco / High End Systems - <http://www.highend.com/products/effects/>

Crawford International Theatrical Corporation (CITC) - <http://www.citcfx.com/>

Froggy's Fog - <http://www.froggysfog.com/>

Hazebase – <http://hazebase.com>

Le Maitre Ltd. - <http://www.lemaitreusa.com>

Look Solutions - <http://www.looksolutionsusa.com/products/machines/>

Martin Professional - [https://www.martin.com/en-US/product\\_families/atmospheric-effects](https://www.martin.com/en-US/product_families/atmospheric-effects)

Master Fog - <http://www.master-fog.com/>

MDG Fog Generators - <http://www.mdgfog.com/en/index.html>

MT-Electronic – <http://mt-electronic.com>

New Rule FX - <http://www.newrulefx.com/>

Reel EFX - <http://www.reelefx.com/index.php?c=product.list>

Rosco Laboratories - <http://www.rosco.com/us/products/fog.cfm>

SFX Design, Inc. - <http://www.sfxdesigninc.com/>

Smoke Factory - [http://www.smoke-factory.de/eng/sf\\_produkte.htm](http://www.smoke-factory.de/eng/sf_produkte.htm)

Ultratec Special Effects, Inc. - <http://www.ultratecfx.com/>

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<https://ramboll.com/projects/usa/theatrical-fog-study>