

# ENGINEERING DATA

TIG

Nominal Duct Size (in.)	Blade Deflection	Core Velocity Total Pressure	Core Velocity									
			300	400	500	600	700	800	1000	1200	1400	1600
			0° 0.010	0.017	0.028	0.038	0.052	0.069	0.107	0.156	0.211	0.275
			22.5° 0.011	0.019	0.031	0.043	0.058	0.078	0.120	0.175	0.237	0.308
			45° 0.016	0.029	0.047	0.064	0.088	0.117	0.181	0.263	0.356	0.464

  

Duct Size	Blade Deflection	Airflow (CFM)	Throw									
			300	400	500	600	700	800	1000	1200	1400	1600
6x6	0° Ak = 0.137	55	4-7-13	6-8-15	7-11-17	9-13-19	10-15-20	11-16-22	14-17-24	15-19-26	17-21-29	18-22-31
	22.5° Ak = 0.129	70	3-6-10	5-6-12	6-9-14	7-10-15	8-12-16	9-13-18	11-14-19	12-15-21	14-17-23	14-18-25
	45° Ak = 0.105	90	2-3-7	3-4-8	4-5-9	4-7-10	5-7-10	6-8-11	7-9-12	8-10-13	8-10-14	9-11-15
	NC	-	-	-	-	15	19	25	31	36	40	
8x6	0° Ak = 0.198	80	5-8-16	7-11-19	9-13-21	10-16-23	12-17-24	14-19-26	17-21-29	19-23-32	20-25-34	22-26-37
	22.5° Ak = 0.187	105	4-6-13	6-9-15	7-10-17	8-13-18	10-14-19	11-15-21	14-17-23	15-18-26	16-20-27	18-21-30
	45° Ak = 0.153	130	3-4-8	4-5-9	4-7-10	5-8-11	6-9-12	7-9-13	8-11-15	9-12-16	10-12-17	11-13-18
	NC	-	-	-	-	16	20	26	32	37	41	
8x8	0° Ak = 0.296	115	6-9-19	9-13-23	11-16-25	13-19-28	15-22-30	17-23-32	21-26-36	23-27-40	25-30-42	27-33-45
	22.5° Ak = 0.280	155	5-7-15	7-10-18	9-13-20	10-15-22	12-18-24	14-18-26	17-21-29	18-22-32	20-24-34	22-26-36
	45° Ak = 0.228	195	3-5-10	4-6-11	5-8-13	7-10-14	8-11-15	9-12-16	11-13-18	12-14-20	12-15-21	13-16-23
	NC	-	-	-	-	18	22	28	34	39	43	
10x10	0° Ak = 0.456	180	7-12-24	11-16-28	14-20-31	16-24-34	19-27-37	22-29-40	26-32-45	29-35-48	31-38-52	23-40-56
	22.5° Ak = 0.431	240	6-10-19	9-13-22	11-16-25	13-19-27	15-22-30	18-23-32	21-26-36	23-28-38	25-30-42	26-32-45
	45° Ak = 0.352	300	4-6-12	5-8-14	7-10-16	8-12-17	10-13-19	11-14-20	13-16-22	14-17-24	15-19-26	16-20-28
	NC	-	-	-	15	20	24	30	36	41	45	
12x10	0° Ak = 0.524	205	8-13-26	12-17-30	15-22-34	18-26-37	21-29-40	24-31-43	28-34-47	30-38-52	33-40-56	35-43-60
	22.5° Ak = 0.495	275	6-10-21	10-14-24	12-18-27	14-23-30	17-23-32	19-28-34	22-27-38	24-30-42	26-32-45	28-34-48
	45° Ak = 0.404	345	4-6-13	6-9-15	7-11-17	9-13-18	10-14-20	12-15-21	14-17-24	15-19-26	16-20-28	18-22-30
	NC	-	-	-	15	20	24	30	36	41	45	
12x12	0° Ak = 0.684	270	9-15-30	14-20-34	17-25-39	21-30-42	24-33-45	27-35-48	32-39-55	35-43-59	37-46-63	40-49-68
	22.5° Ak = 0.647	360	7-12-24	11-16-27	14-20-31	17-24-34	19-26-36	22-28-38	26-31-44	28-34-47	30-37-50	32-39-54
	45° Ak = 0.528	450	5-8-15	7-10-17	9-13-19	10-15-21	12-16-23	14-17-24	16-20-27	17-21-29	19-23-32	20-24-32
	NC	-	-	-	16	21	25	31	37	42	46	
16x12	0° Ak = 0.897	355	10-17-34	15-23-40	19-28-44	23-35-48	27-38-52	31-40-56	36-45-62	40-48-67	43-52-73	45-56-78
	22.5° Ak = 0.848	470	8-14-27	12-18-32	15-22-35	18-28-38	22-30-42	25-32-45	29-36-50	32-38-54	34-42-58	36-45-62
	45° Ak = 0.692	590	5-8-17	8-11-20	10-14-22	12-17-24	13-19-26	15-20-28	18-22-31	20-24-34	21-26-36	23-28-39
	NC	-	-	-	17	22	26	32	38	43	47	

**Notes:**

1. Tests conducted in accordance with ANSI/ASHRAE 70-1991.
2. Units: Face Velocity = Airflow/Ak; Total Pressure = in. wc.; Ak = ft<sup>2</sup>; Throw = ft at 150, 100, and 50 fpm terminal velocity.
3. NC is based upon 10 dB room absorption (Re: 10<sup>-12</sup> watts) evaluated at 125 through 4000 Hz octave bands.
4. For deflection settings of 22.5° or 45° increase the stated NC level by 1 and 7 respectively.
5. Dash "-" indicates NC value less than 10.

Nominal Duct Size (in.)	Blade Deflection	Core Velocity										
		Total Pressure	300	400	500	600	700	800	1000	1200	1400	1600
			0°	0.010	0.017	0.028	0.038	0.052	0.069	0.107	0.156	0.211
		22.5°	0.011	0.019	0.031	0.043	0.058	0.078	0.120	0.175	0.237	0.308
		45°	0.016	0.029	0.047	0.064	0.088	0.117	0.181	0.263	0.356	0.464

  

22x10		Airflow (CFM)	400	535	670	805	940	1070	1340	1610	1880	2140
	0° Ak = 1.018	Throw	11-18-36	16-24-42	20-30-47	24-37-51	28-40-56	32-43-59	39-47-65	45-52-72	45-56-78	48-60-83
	22.5° Ak = 0.963	Throw	9-14-29	13-19-34	16-24-38	19-30-41	22-32-45	26-34-47	31-38-52	34-42-58	36-45-62	38-48-66
	45° Ak = 0.785	Throw	6-9-18	8-12-21	10-15-23	12-18-25	14-20-28	16-21-29	19-23-33	21-26-36	23-28-39	24-30-42
		NC	-	-	-	18	23	27	33	39	44	48

  

24x12		Airflow (CFM)	540	720	900	1080	1260	1440	1800	2160	2520	2880
	0° Ak = 1.368	Throw	13-21-42	19-28-48	24-35-55	29-43-59	32-46-63	37-49-68	45-55-76	48-60-84	52-65-90	56-69-97
	22.5° Ak = 1.293	Throw	10-17-34	15-22-38	19-28-44	23-34-47	26-37-50	30-39-54	36-44-61	38-48-67	42-52-72	45-55-78
	45° Ak = 1.055	Throw	7-11-21	9-14-24	12-17-27	14-21-29	16-23-32	19-24-34	22-27-38	24-30-42	26-32-45	28-35-48
		NC	-	-	-	19	24	28	34	40	45	49

  

26x14		Airflow (CFM)	735	980	1220	1470	1720	1960	2450	2940	3430	3920
	0° Ak = 1.862	Throw	15-25-49	22-33-57	27-40-62	32-48-68	38-54-74	43-57-80	52-64-89	57-70-97	61-76-106	65-81-113
	22.5° Ak = 1.760	Throw	12-20-39	18-26-46	22-32-50	26-38-54	30-43-74	34-46-64	45-51-71	46-56-78	49-61-85	52-65-90
	45° Ak = 1.436	Throw	7-12-24	11-16-28	14-20-31	16-24-34	19-27-37	22-28-40	26-32-45	28-35-49	32-38-53	33-42-56
		NC	-	-	15	20	25	29	35	41	46	50

  

18x18		Airflow (CFM)	835	1110	1390	1670	1950	2220	2780	3340	3890	4450
	0° Ak = 1.900	Throw	16-26-52	23-34-60	29-42-67	35-50-73	40-57-79	45-61-85	55-68-95	60-75-104	65-81-112	70-87-122
	22.5° Ak = 1.796	Throw	13-21-42	18-27-48	23-34-54	28-40-58	32-46-63	34-49-68	44-54-76	48-60-83	52-65-90	56-70-98
	45° Ak = 1.467	Throw	8-13-26	12-17-30	14-21-33	17-25-37	20-28-40	23-30-42	28-34-47	30-37-52	33-40-56	35-43-61
		NC	-	-	16	21	26	30	36	42	47	51

  

36x18		Airflow (CFM)	1290	1720	2140	2570	3000	3430	4290	5150	6010	6860
	0° Ak = 3.260	Throw	19-31-64	28-41-74	35-50-83	42-60-91	49-74-98	56-76-106	69-85-118	76-93-130	82-102-140	88-108-149
	22.5° Ak = 3.082	Throw	15-25-51	22-35-59	28-40-66	34-48-73	39-57-78	45-61-85	55-68-94	61-74-104	66-82-112	70-86-119
	45° Ak = 2.515	Throw	10-15-32	14-20-37	17-25-42	21-30-46	24-35-49	28-38-53	34-43-59	38-47-65	41-51-70	44-54-75
		NC	-	-	18	23	28	32	38	44	49	53

  

36x24		Airflow (CFM)	1670	2230	2790	3350	3910	4460	5580	6700	7810	8930
	0° Ak = 4.239	Throw	22-36-73	31-47-85	40-59-95	47-72-104	55-81-113	63-87-122	79-97-135	87-107-148	93-116-160	100-125-171
	22.5° Ak = 4.008	Throw	18-29-58	25-38-68	32-47-76	38-25-83	44-65-90	50-70-98	63-78-108	70-86-118	74-93-103	80-100-137
	45° Ak = 3.271	Throw	11-18-37	16-23-43	20-30-48	23-36-52	28-41-57	31-44-61	39-49-67	43-53-74	47-53-80	50-62-85
		NC	-	-	19	24	29	33	39	45	50	54

  

30x30		Airflow (CFM)	1880	2500	3120	3750	4380	5000	6250	7500	8750	10000
	0° Ak = 4.751	Throw	23-37-78	33-49-90	42-62-100	50-75-103	58-86-119	67-96-128	84-104-143	92-113-156	98-123-169	106-132-180
	22.5° Ak = 4.492	Throw	18-30-62	26-39-72	34-50-80	40-60-82	46-69-95	54-74-102	67-83-114	74-90-125	78-98-135	85-105-140
	45° Ak = 3.665	Throw	12-19-39	17-25-45	21-31-50	25-37-51	29-43-60	34-46-64	45-52-72	46-57-78	49-61-85	53-66-90
		NC	-	-	20	25	30	34	40	46	51	55



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