

## Screw selecting guide for Norex & Noroc panels installation (metal screw)

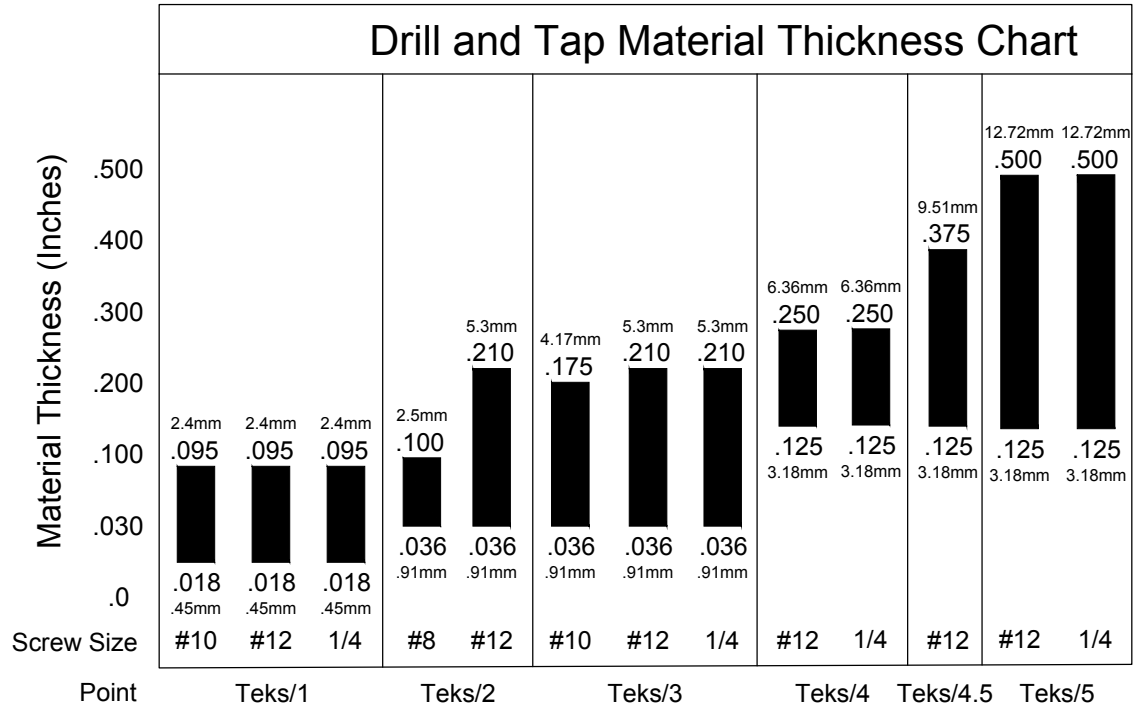
Panel type	Mfg.	Desc.	Anchor Capacity (lbs.) <sup>(1)(3)(4)</sup>					
			Girt thickness <sup>(2)</sup>					
			16 Ga. Galv. Steel (0,060")	14 Ga. Galv. Steel (0,075")	12 Ga. Galv. Steel (0,105")	1/8" (0,125")	3/16" (0,188")	1/4" (0,250")
NOREX	Buildex	2 x TEKS (1/4 - 14)	663	829	1160	1200	1200	---
	Buildex	2 x TEKS (1/4 - 28)	---	---	---	1200	1200	1200
	SFS Intec	2 x IMPAX SD3 (1/4 - 14)	663	829	1160	1200	1200	---
	SFS Intec	2 x IMPAX SD5 (1/4 - 20)	---	---	1160	1200	1200	1200
	Les attaches Evolution Fasteners	2 x Evoguard HHD (#14 - 14)	642	802	1123	1200	1200	1200
	Buildex	1 x TEKS (1/4 - 14)	331	414	580	690	1000	---
	Buildex	1 x TEKS (1/4 - 28)	---	---	---	690	1000	1000
	SFS Intec	1 x IMPAX SD3 (1/4 - 14)	331	414	580	690	1000	---
	SFS Intec	1 x IMPAX SD5 (1/4 - 20)	---	---	580	690	1000	1000
Les attaches Evolution Fasteners	1 x Evoguard HHD (#14 - 14)	320	401	561	668	1000	1000	
NOROC	Buildex	2 x TEKS (1/4 - 14)	663	750	750	750	750	---
	Buildex	2 x TEKS (1/4 - 28)	---	---	---	750	750	750
	SFS Intec	2 x IMPAX SD3 (1/4 - 14)	663	750	750	750	750	---
	SFS Intec	2 x IMPAX SD5 (1/4 - 20)	---	---	750	750	750	750
	Les attaches Evolution Fasteners	2 x Evoguard HHD (#14 - 14)	642	750	750	750	750	750

- Notes :
- (1) Data valide with NORBEC 5in. - 14ga. clips for NOREX and NOROC
  - (2) Steel HSLAS, Grade 50 Class 1 according to ASTM A1011/A 1011M-07  
Fu = 65 ksi minimum.
  - (3) For FM approval, 1/4"-14 Buildex screws shall be used, 2 screws / clip, with 14ga. minimum thickness structure steel, refer to drawing # REX-IC 2.06
  - (4) Anchor capacity only. The panel capacity must be verified with Load Span Table according with ASTM E72.
  - (5) Pull-out strenght of the screws based on standard CSA S-136
  - (6) Norbec Architectural reserves the right to change the specification of the product or its performance, or the contents of the guide, without notice.

# TEKS Metal Roof and Wall Applications

## APPLICATIONS

Roof panels to purlin or bar joist.  
 Wall panels to girt.  
 Mansard panel to structural.



\*Drill & tap capacities may vary with special feature designs. Refer to product reports for specifics.

## SELECTION CHART

### TEKS® w/Bonded Washer Finish: Climaseal Coating.

PART NUMBER	REFERENCE NUMBER	DESCRIPTION	HEAD STYLE	WASHER DIAMETER	DRILL POINT	DRILL & TAP CAPACITY	MAX. MATERIAL ATTACHMENTS	BOX QTY	APPLICATIONS
1790W	1416000	1/4-14 x 7/8"	5/16" HWH	9/16"	#1	.018-.095	.260	3,000	- Brick tie to steel framing - Mansard panel to steel framing - Roof panel to purlin - Stitch roof
1850W	1160000	1/4-14 x 1"	3/8" HWH	9/16"	#3	.036-.210	.280	2,500	
1890W	1020000	1/4-14 x 1-1/2"	3/8" HWH	9/16"	#3	.036-.210	.780	1,500	
1920W	1021000	1/4-14 x 2"	3/8" HWH	9/16"	#3	.036-.210	1.280	1,000	
1950W	1022000	1/4-14 x 3"	3/8" HWH	9/16"	#3	.036-.210	2.280	750	
1429000	1429000	1/4-14 x 4"	3/8" HWH	9/16"	#3	.036-.210	3.280	500	
1003000	1003000	1/4-28 x 3"	5/16" HWH	9/16"	#5	.125-.500	2.030	1,000	
1004000	1004000	1/4-28 x 4"	5/16" HWH	9/16"	#5	.125-.500	3.030	500	
1647000	1647000	1/4-28 x 5"	3/8" HWH	3/4"	#5	.125-.500	4.030	250	
1432000	1432000	1/4-28 x 6"	3/8" HWH	3/4"	#5	.125-.500	5.030	250	
1619000	1619000	1/4-28 x 8"	3/8" HWH	3/4"	#5	.125-.500	7.030	150	

# TEKS Metal Roof and Wall Applications

## PERFORMANCE TABLES

### Sheet Steel Gauges

GAUGE NO.	12	14	16	18	20	22	24	26
Nominal Decimal Equivalent (Inch)	.105	.075	.060	.048	.036	.030	.024	.018

### Pullout Values (avg. lbs. ultimate)

FASTENER		STEEL GAUGE (lbs.)									
DIA.	PT	26	24	22	20	18	16	14	12	3/16	1/4
#10	3	124	208	266	299	499	708	967	1474	-----	-----
#12	2	156	243	283	375	605	848	1181	1856	3520	-----
	3	142	211	289	341	551	757	1063	1631	2998	-----
#12	4	-----	-----	-----	-----	-----	-----	-----	1532	3485	3844
	4.5	-----	-----	-----	-----	-----	-----	-----	1508	3865	4104
	5	-----	-----	-----	-----	-----	-----	-----	1527	3701	3999
1/4	1	208	329	428	562	800	1151	-----	-----	-----	-----
	3	141	231	293	346	613	880	1145	1877	4550	-----
	5	-----	-----	-----	-----	-----	607	918	1507	3300	5059

### Shear Values (avg. lbs. ultimate)

FASTENER		STEEL GAUGE (lapped)									
DIA.	PT	26	24	22	20	18	16	14	12	1/8	1/4
#10	3	-----	445	526	728	1266	1540	1552	-----	-----	-----
#12	2	365	600	623	898	1370	1758	2138	-----	-----	-----
	3	-----	-----	-----	769	1358	1620	1970	1986	-----	-----
#12	4	-----	-----	-----	-----	-----	-----	-----	2048	2030	-----
	4.5	-----	-----	-----	-----	-----	-----	-----	2641	2887	-----
	5	-----	-----	-----	-----	-----	-----	-----	2650	2700	-----
1/4	1	511	849	885	1244	1764	-----	-----	-----	-----	-----
	3	-----	-----	-----	930	1442	2100	2584	2650	-----	-----
	5	-----	-----	-----	-----	-----	1597	2005	2350	2792	3310

### Fastener Values

FASTENER (dia-tpi)	TENSILE (lbs. min)	SHEAR (avg. lbs. ult.)	TORQUE (min. in. lbs.)
10-16	1936	1400	61
12-14	2778	2000	92
12-24	3020	2100	100
1/4-14	4060	2600	150
1/4-28	5577	3310	234

The values listed are ultimate averages achieved under laboratory conditions and apply to Buildex manufactured fasteners only. Appropriate safety factors should be applied to these values for design purposes.

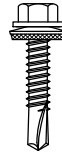
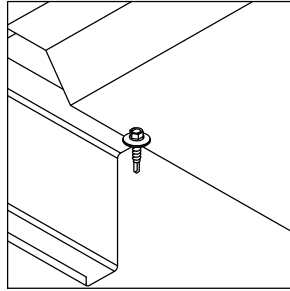
**SFS Intec Self-Drilling Fasteners**  
**1/4-14 and 1/4-20 Impax self-drill**  
 For metal to metal

Delivers ultimate performance in medium and heavy gage applications.  
 Designed and engineered to have low driving and thread engagement torque and provide maximum clamp load.  
 Corrosion resistant coating system.  
 Designed for insulated metal panel application

**Application**

**1/4-14 Impax SD2 & SD3**

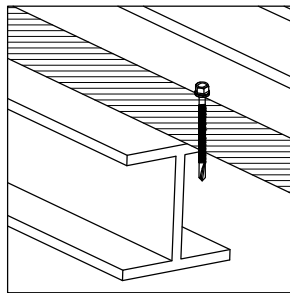
Assembled bondSeal  
 Metal to metal  
 Drilling capacity:  
 #2 point: .050 – .150"  
 #3 point: .050 – .210"  
 Thickness is based on normal, single thickness purlin/girt or multiple material thickness combined for total.  
 Min projection: 3/16" of threads below substrate



#2 – 5/16" AF Hex Washer Head  
 #3 – 3/8" AF Hex Washer Head  
 Thread Major Dia: .246 – .240  
 Thread Minor Dia: .192 – .185  
 Strength (lbs ult.):  
 Tensile: 3800  
 Torsional: 150 in-lbs  
 Shear: 2850  
 #2 Point Pull-out (lbs ult.):  
 12 ga (.105): 2088  
 14 ga (.075): 1312  
 16 ga (.060): 903  
 #3 Point Pull-out (lbs ult.):  
 12 ga (.105): 1697  
 14 ga (.075): 1151  
 16 ga (.060): 687  
 Pull-over with Bond Seal (lbs ult.):  
 22 ga (.030): 1079  
 24 ga (.024): 884  
 26 ga (.018): 616

**1/4-20 Impax SD5**

Assembled bondSeal  
 Metal to metal  
 Drilling capacity: .105 – .500"  
 Thickness is based on normal, single thickness girt or multiple material thickness combined for total.  
 Min projection: 3/16" of threads below substrate



3/8" AF Hex Washer Head  
 Thread Major Dia: .249 – .241  
 Thread Minor Dia: .200 – .184  
 Strength (lbs ult.):  
 Tensile: 4200  
 Torsional: 156 in-lbs  
 Shear: 2920  
 Pull-out (lbs ult.):  
 12 ga (.105): 1532  
 1/4" (.250): Exceeds tensile value  
 3/8" (.375): Exceeds tensile value  
 1/2" (.500): Exceeds tensile value  
 Pull-over with Bond Seal (lbs ult.):  
 22 ga (.030): 1117  
 24 ga (.024): 988  
 26 ga (.018): 629  
 Test values obtained from lab report #5006.13

**Notes**

Dimensions are nominal inches unless noted. Self-drill pull-out values (pounds ultimate) are based on 57,000 psi hot rolled steel material. Ultimate values listed are the result of laboratory testing. The specific job conditions should be considered and appropriate safety factors applied when specifying the proper fasteners.

**Selection**

		Example Code				
		SD5-	#14x	3-	HW3/8-	GB19/32
Description	Available Lengths (L)	Type	Diameter	Length	Head Style	Washer
1/4-20 Impax SD5 bondSeal	3", 4", 5", 6", 7", 8"	SD5-	#14x	L-	HW3/8-	GB19/32
1/4-20 Impax SD5 No Washer	3", 4", 5", 6", 7", 8"	SD5-	#14x	L-	HW3/8-	–
1/4-14 Impax SD3 bondSeal	3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2", 3", 4"	SD3-	#14x	L-	HW3/8-	GB19/32
1/4-14 Impax SD3 No Washer	3/4", 1", 1-1/4", 1-1/2", 2", 2-1/2", 3", 4"	SD3-	#14x	L-	HW3/8-	–

**Installation**

Tools: 0 – 2000 rpm screw gun equipped with depth sensing nose piece.  
 Use of impact guns or hammer drills is not recommended.

Les Attaches Evolution Fasteners  
 Modele: EVOGUARD HHD

CODE DU PRODUIT	DIMENSION	TÊTE	POINTE	CAPACITÉ DE PERCAGE	FINITION	QUANTITÉ PAR VRAC
HHD - 14034EVG	#14 - 14 x 3/4"	3/8" HWH	#3	0.220" / 5.59mm	EVOGUARD	3,000
HHD - 14078EVG	#14 - 14 x 7/8"	5/16" HWH	#1	0.095" / 2.42mm	EVOGUARD	3,500
HHD - 14100EVG	#14 - 14 x 1"	3/8" HWH	#3	0.220" / 5.59mm	EVOGUARD	3,000
HHD - 14114EVG	#14 - 14 x 1-1/4"	3/8" HWH	#3	0.220" / 5.59mm	EVOGUARD	2,000
HHD - 14112EVG	#14 - 14 x 1-1/2"	3/8" HWH	#3	0.220" / 5.59mm	EVOGUARD	2,000
HHD - 14200EVG	#14 - 14 x 2"	3/8" HWH	#3	0.220" / 5.59mm	EVOGUARD	1,500
HHD - 14212EVG	#14 - 14 x 2-1/2"	3/8" HWH	#3	0.220" / 5.59mm	EVOGUARD	1,000
HHD - 14300EVG	#14 - 14 x 3"	3/8" HWH	#3	0.220" / 5.59mm	EVOGUARD	1,000
HHD - 14400EVG	#14 - 14 x 4"	3/8" HWH	#3	0.220" / 5.59mm	EVOGUARD	500
HHD - 14600EVG	#14 - 14 x 6"	3/8" HWH	#3	0.220" / 5.59mm	EVOGUARD	500

**Screw selecting guide for  
Norex & Noroc panels installation  
(wood screw)**

Panel type	Mfg.	Desc.	Panel thickness		Screw lenght		Anchor Capacity	
			mm	in	mm	in	N	lbs
NOREX	Schmid	1 x StarDrive GPR Flat head - Ø6mm	51	2"	140	5 1/2"	980	220
			76	3"	160	6 1/4"	980	220
			102	4"	180	7 1/6"	980	220
			127	5"	200	7 7/8"	980	220
			152	6"	---	---	---	---
		1 x StarDrive GPR Flat head - Ø8mm	51	2"	140	5 1/2"	1720	386
			76	3"	160	6 1/4"	1720	386
			102	4"	200	7 7/8"	2000	450
			127	5"	240	9 1/2"	2000	450
			152	6"	260	10 1/4"	2000	450
		2 x StarDrive GPR Flat head - Ø6mm	51	2"	140	5 1/2"	1960	441
			76	3"	160	6 1/4"	1960	441
			102	4"	180	7 1/6"	1960	441
			127	5"	200	7 7/8"	1960	441
			152	6"	---	---	---	---
		2 x StarDrive GPR Flat head - Ø8mm	51	2"	140	5 1/2"	3441	773
			76	3"	160	6 1/4"	3441	773
			102	4"	200	7 7/8"	4000	899
			127	5"	240	9 1/2"	4000	899
			152	6"	260	10 1/4"	4000	899
NOROC	Schmid	1 x StarDrive GPR Flat head - Ø6mm	102	4"	180	7 1/6"	980	220
			127	5"	200	7 7/8"	980	220
			152	6"	---	---	---	---
		1 x StarDrive GPR Flat head - Ø8mm	102	4"	200	7 7/8"	2000	450
			127	5"	240	9 1/2"	2000	450
			152	6"	260	10 1/4"	2000	450
		2 x StarDrive GPR Flat head - Ø6mm	102	4"	180	7 1/6"	1960	441
			127	5"	200	7 7/8"	1960	441
			152	6"	---	---	---	---
		2 x StarDrive GPR Flat head - Ø8mm	102	4"	200	7 7/8"	3113	700
			127	5"	240	9 1/2"	3113	700
			152	6"	260	10 1/4"	3113	700

- Notes :
- (1) Valid data with the NOREX 5" clip - 14 Ga., for NOREX and NOROC.
  - (2) The threaded part must be completely inserted into the wood.
  - (3) The calculated data is for a Glued laminated (Glulam) Timber structure (350 kg/m3)
  - (4) Performance of anchors only. The capabilities of the panels shall be verified using loading tables of sagging tests standard ASTM E72,
  - (5) Pull-out strenght of the screws based on standard CSA 086-14
  - (6) Ø8mm Screws - NOREX 5" clip with special holes diametre
  - (7) Table does not apply for firewalls.

# StarDrive GPR®

Characteristic		Unit	Ø 6,0	Ø 8,0
Head diameter	Countersunk head	dk [mm]	12,0	15,0
	Washer head	dk [mm]	14,0	20,0
Core diameter		di [mm]	4,0	5,3
Shaft diameter		ds [mm]	4,3	5,9
Drive	Countersunk head	TX	30	40
	Washer head	TX	30	40
Tensile load	Steel	ftens,k [kN]	12,8	22,7
	Stainless Steel	ftens,k [kN]	-	16,0
Yield moment	Steel	My,k [Nm]	10,1	22,6
	Stainless Steel	My,k [Nm]	-	16,6

Washers		Unit	Ø 6,0	Ø 8,0
Washer diameter		[mm]	22,0	28,0
Thickness of washer		[mm]	4,5	6,0
Head traction parameter	Washer	[N/mm²]	20,4	13,7
	Countersunk head	[N/mm²]	14,6	12,4
	Washer head	[N/mm²]	16,7	17,6
Head traction resistance	Washer	[kN]	9,87	10,74
	Countersunk head	[kN]	2,10	2,79
	Washer head	[kN]	3,27	7,04

Dimensions		Extraction resistance		Head traction resistance				Wood - wood Shearing								Steel - wood shearing				
				Countersunk head		Washer head		Countersunk head				Washer head								
d x L [mm]	b [mm]	zul. Nz [kN]	Fax,R,k [kN]	zul. Nz [kN]	Fhead,R,k [kN]	zul. Nz [kN]	Fhead,R,k [kN]	zul. N [kN]	1. Fv,R,k [kN]	2. Fv,R,k [kN]	3. Fv,R,k [kN]	4. Fv,R,k [kN]	zul. N [kN]	1. Fv,R,k [kN]	2. Fv,R,k [kN]	3. Fv,R,k [kN]	4. Fv,R,k [kN]	zul. N [kN]	1. Fv,R,k [kN]	2. Fv,R,k [kN]
Ø 6,0																				
6,0 x 60	36	1,08	2,81	0,72	2,10	0,98	3,27	0,58	1,76	1,76	1,76	1,76	0,61	1,94	1,94	1,94	1,94	0,77	3,01	3,01
6,0 x 70	36	1,08	2,81	0,72	2,10	-	-	0,61	1,98	1,98	1,98	1,98	-	-	-	-	-	0,77	3,01	3,01
6,0 x 80	48	1,44	3,74	0,72	2,10	0,98	3,27	0,61	1,96	1,96	1,96	1,96	0,61	2,25	2,25	2,25	2,25	0,77	3,25	3,25
6,0 x 90	48	1,44	3,74	0,72	2,10	-	-	0,61	1,96	1,96	1,96	1,96	-	-	-	-	-	0,77	3,25	3,25
6,0 x 100	48	1,44	3,74	0,72	2,10	0,98	3,27	0,61	2,16	2,16	2,16	2,16	0,61	2,45	2,45	2,45	2,45	0,77	3,25	3,25
6,0 x 110	64	1,92	4,99	0,72	2,10	-	-	0,61	2,16	2,16	2,16	2,16	-	-	-	-	-	0,77	3,56	3,56
6,0 x 120	64	1,92	4,99	0,72	2,10	0,98	3,27	0,61	2,16	2,16	2,16	2,16	0,61	2,45	2,45	2,45	2,45	0,77	3,56	3,56
6,0 x 130	64	1,92	4,99	0,72	2,10	-	-	0,61	2,16	2,16	2,16	2,16	-	-	-	-	-	0,77	3,56	3,56
6,0 x 140	64	1,92	4,99	0,72	2,10	0,98	3,27	0,61	2,16	2,16	2,16	2,16	0,61	2,45	2,45	2,45	2,45	0,77	3,56	3,56
6,0 x 150	64	1,92	4,99	0,72	2,10	-	-	0,61	2,16	2,16	2,16	2,16	-	-	-	-	-	0,77	3,56	3,56
6,0 x 160	64	1,92	4,99	0,72	2,10	0,98	3,27	0,61	2,16	2,16	2,16	2,16	0,61	2,45	2,45	2,45	2,45	0,77	3,56	3,56
6,0 x 180	64	1,92	4,99	0,72	2,10	0,98	3,27	0,61	2,16	2,16	2,16	2,16	0,61	2,45	2,45	2,45	2,45	0,77	3,56	3,56
6,0 x 200	64	1,92	4,99	0,72	2,10	0,98	3,27	0,61	2,16	2,16	2,16	2,16	0,61	2,45	2,45	2,45	2,45	0,77	3,56	3,56
6,0 x 220	64	1,92	4,99	0,72	2,10	-	-	0,61	2,16	2,16	2,16	2,16	-	-	-	-	-	0,77	3,56	3,56
6,0 x 240	64	1,92	4,99	0,72	2,10	-	-	0,61	2,16	2,16	2,16	2,16	-	-	-	-	-	0,77	3,56	3,56
6,0 x 260	64	1,92	4,99	0,72	2,10	-	-	0,61	2,16	2,16	2,16	2,16	-	-	-	-	-	0,77	3,56	3,56
6,0 x 280	64	1,92	4,99	0,72	2,10	-	-	0,61	2,16	2,16	2,16	2,16	-	-	-	-	-	0,77	3,56	3,56
6,0 x 300	64	1,92	4,99	0,72	2,10	-	-	0,61	2,16	2,16	2,16	2,16	-	-	-	-	-	0,77	3,56	3,56
Ø 8,0																				
8,0 x 80	54	2,16	4,62	1,13	2,79	2,00	7,04	a)	a)	a)	a)	a)	a)	a)	a)	a)	a)	1,36	6,18	5,29
8,0 x 100	54	2,16	4,62	1,13	2,79	2,00	7,04	1,10	3,68	4,25	3,50	3,89	1,10	4,14	4,70	3,95	4,35	1,36	6,18	5,29
8,0 x 120	54	2,16	4,62	1,13	2,79	2,00	7,04	1,10	3,68	4,25	3,50	3,89	1,10	4,35	4,70	4,08	4,35	1,36	6,18	5,29
8,0 x 140	84	3,36	7,19	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	6,82	5,94
8,0 x 160	84	3,36	7,19	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	6,82	5,94
8,0 x 180	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 200	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 220	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 240	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 260	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 280	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 300	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 320	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 340	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 360	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 380	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28
8,0 x 400	100	4,00	8,56	1,13	2,79	2,00	7,04	1,10	3,89	4,25	3,62	3,89	1,10	4,95	5,31	4,69	4,95	1,36	7,16	6,28