



HASCO
COMPONENTS

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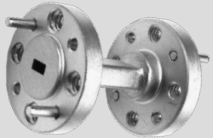
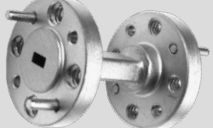
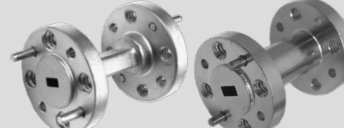
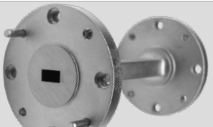
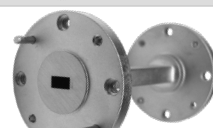
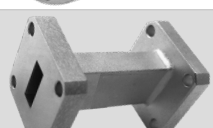
WAVEGUIDE SECTIONS

HASCO waveguide sections provide different configurations to route waveguide signals between devices using Straight Waveguides, Twist Waveguides, E-Bend Waveguides, H-Bend Waveguides in common 1 inch, 1.5 inch, 2 inch and 2.5 inch lengths.

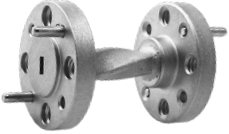
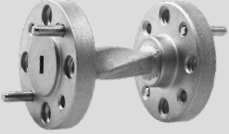
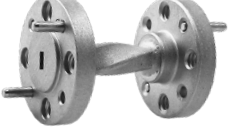
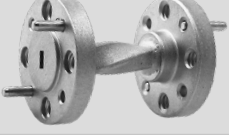
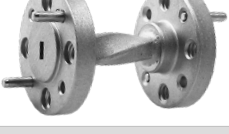
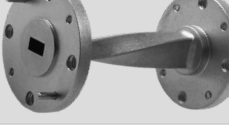
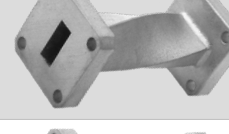
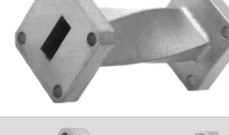
HASCO's waveguides come in standard WR designs and operate across the full waveguide band from 18 GHz to 325 GHz. Whether it is WR-42, WR12, WR-03 or WR sizes in between, HASCO has them in stock.

WAVEGUIDE STRAIGHT SECTIONS

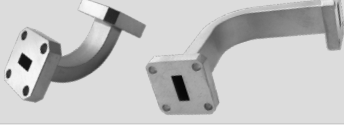
XX = LENGTH

PHOTO	TYPE/PART #	FREQUENCY	TEMP RANGE	VSWR	MATERIALS
	WR-3 HWSS03-XX-ER (Available in 1.0, 1.5 & 2.0 Inch)	220 to 325 GHz	+220°C Max	1:04:1 Typ.	● Waveguide: Silver ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	G-Band, WR-5 HWSS05-XX-ER (Available in 1.0, 1.5 & 2.0 Inch)	140 to 220 GHz	+220°C Max	1:04:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	D-Band, WR-6 HWSS06-XX-ER (Available in 1.0, 1.5 & 2.0 Inch)	110 to 175 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	F Band, WR-8 HWSS08-XX-ER (Available in 1.0, 1.5 & 2.0 Inch)	90 to 1400 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	W Band, WR-10 HWSS10-XX-ER HWSS10-XX-ER-1 (Available in 1.0 & 2.0 Inch)	75 to 110 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	E Band, WR-12 HWSS12-XX-ER HWSS12-XX-ER-1 (Available in 1.0 & 2.0 Inch)	60 to 90 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U ● Finish: Gold Plated
	V Band, WR-15 HWSS15-XX-ER HWSS15-XX-ER-1 (Available in 1.0 & 2.0 Inch)	50 to 75 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-385/U ● Finish: Gold Plated
	U Band, WR-19 HWSS19-XX-ER (Available in 1.0, 1.5 & 2.0 Inch)	40 to 60 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-383/U-M ● Finish: Gold Plated
	Q Band, WR-22 HWSS22-XX-ER (Available in 1.0, 1.5 & 2.0 Inch)	33 to 50 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-383/U-M ● Finish: Gold Plated
	Q Band, WR-28 HWSS28-XX-ES (Available in 1.0, 1.5 & 2.0 Inch)	26.5 to 40 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-599/U ● Finish: Gold Plated
	WR-34 HWSS34-XX-ES (Available in 1.0, 1.5 & 2.0 Inch)	22 to 33 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-595/U-M ● Finish: Gold Plated
	WR-42 HWSS42-XX-ES (Available in 1.0, 1.5 & 2.0 Inch)	18 to 26.5 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-595/U ● Finish: Gold Plated

WAVEGUIDE 90° TWISTS

PHOTO	TYPE/PART #	FREQUENCY	TEMP RANGE	VSWR	MATERIALS
	WR-3 HWTW03-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	220 to 325 GHz	+220°C Max	1:04:1 Typ.	● Waveguide: Silver ● Flange: Brass , UG-387/U-M ● Finish: Gold Plated
	G-Band, WR-5 HWTW05-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	140 to 220 GHz	+220°C Max	1:04:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	D-Band, WR-6 HWTW06-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	110 to 175 GH	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	F Band, WR-8 HWTW08-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	90 to 1400 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	W Band, WR-10 HWTW10-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	75 to 110 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	E Band, WR-12 HWTW12-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	60 to 90 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U ● Finish: Gold Plated
	V Band, WR-15 HWTW15-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	50 to 75 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-385/U ● Finish: Gold Plated
	U Band, WR-19 HWTW19-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	40 to 60 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-383 /U-M ● Finish: Gold Plated
	Q Band, WR-22 HWTW22-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	33 to 50 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-383/U-M ● Finish: Gold Plated
	Q Band, WR-28 HWTW28-XX-ES (Available in 1.0, 2.0 & 2.5 Inch)	26.5 to 40 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-599/U ● Finish: Gold Plated
	WR-34 HWTW34-XX-ES (Available in 1.0, 2.0 & 2.5 Inch)	22 to 33 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-595/U-M ● Finish: Gold Plated
	WR-42 HWTW42-XX-ES (Available in 1.0, 2.0 & 2.5 Inch)	18 to 26.5 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-595/U ● Finish: Gold Plated

WAVEGUIDE E BENDS

PHOTO	TYPE/PART #	FREQUENCY	TEMP RANGE	VSWR	MATERIALS
	WR-3 HWEB03-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	220 to 325 GHz	+220°C Max	1:04:1 Typ.	● Waveguide: Silver ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	G-Band, WR-5 HWEB05-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	140 to 220 GHz	+220°C Max	1:04:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	D-Band, WR-6 HWEB06-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	110 to 175 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	F Band, WR-8 HWEB08-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	90 to 1400 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	W Band, WR-10 HWEB10-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	75 to 110 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	E Band, WR-12 HWEB12-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	60 to 90 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U ● Finish: Gold Plated
	V Band, WR-15 HWEB15-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	50 to 75 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-385/U ● Finish: Gold Plated
	U Band, WR-19 HWEB19-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	40 to 60 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-383/U-M ● Finish: Gold Plated
	Q Band, WR-22 HWEB22-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	33 to 50 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-383/U-M ● Finish: Gold Plated
	Q Band, WR-28 HWEB28-XX-ES (Available in 1.0, 2.0 & 2.5 Inch)	26.5 to 40 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-599/U ● Finish: Gold Plated
	WR-34 HWEB34-XX-ES (Available in 1.0, 2.0 & 2.5 Inch)	22 to 33 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-595/U-M ● Finish: Gold Plated
	WR-42 HWEB42-XX-ES (Available in 1.0, 2.0 & 2.5 Inch)	18 to 26.5 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-595/U ● Finish: Gold Plated

WAVEGUIDE H BENDS

PHOTO	TYPE/PART #	FREQUENCY	TEMP RANGE	VSWR	MATERIALS
	WR-3 HWHB03-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	220 to 325 GHz	+220°C Max	1:04:1 Typ.	● Waveguide: Silver ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	G-Band, WR-5 HWHB05-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	140 to 220 GHz	+220°C Max	1:04:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	D-Band, WR-6 HWHB06-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	110 to 175 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	F Band, WR-8 HWHB08-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	90 to 1400 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	W Band, WR-10 HWHB10-XX-ER (Available in 1.0, 2.05 & 2.5 Inch)	75 to 110 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U-M ● Finish: Gold Plated
	E Band, WR-12 HWHB12-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	60 to 90 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-387/U ● Finish: Gold Plated
	V Band, WR-15 HWHB15-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	50 to 75 GHz	+220°C Max	1:03:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-385/U ● Finish: Gold Plated
	U Band, WR-19 HWHB19-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	40 to 60 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-383/U-M ● Finish: Gold Plated
	Q Band, WR-22 HWHB22-XX-ER (Available in 1.0, 2.0 & 2.5 Inch)	33 to 50 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-383/U-M ● Finish: Gold Plated
	Q Band, WR-28 HWHB28-XX-ES (Available in 1.0, 2.0 & 2.5 Inch)	26.5 to 40 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-599/U ● Finish: Gold Plated
	WR-34 HWHB34-XX-ES (Available in 1.0, 2.0 & 2.5 Inch)	22 to 33 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-595/U-M ● Finish: Gold Plated
	WR-42 HWHB42-XX-ES (Available in 1.0, 2.0 & 2.5 Inch)	18 to 26.5 GHz	+220°C Max	1:02:1 Typ.	● Waveguide: OFHC Copper ● Flange: Brass, UG-595/U ● Finish: Gold Plated