

Rectangular to Circular Waveguide Transitions

Series 64*

Features

- **Low Ellipticity Ratio**
- **Precision Electroformed**
- **Linear to Linear Polarization Versions**
- **Linear to Circular Polarization Versions**

Each transition consists of a short length of rectangular waveguide and a stepped or tapered section leading into circular waveguide.

Models are available optionally fitted with combinations of rectangular port flanges, circular port flanges, resistive elements and dielectric elements. The standard rectangular flange types are listed in the table below. Alternative flange types can be fitted to order. The circular waveguide ports are fitted with the flange as detailed below or to customers requirements as other flange styles are available to special order.

The simple rectangular to circular waveguide transition will launch linearly polarized waves into the circular waveguide section (10643 to 32643). However, line reflections from the circular waveguide section may interact with the incident wave resulting in cross polarization.

If cross polarization is undesirable then the transition selected should be one fitted with a resistive film element to absorb the cross polarized waves (models 10644 to 32644).

For circular polarization, the transitions are fitted with resistive film element and have an extended circular waveguide section containing a dielectric quarter wave plate (models 10648 to 32648).



Model 17648-RH

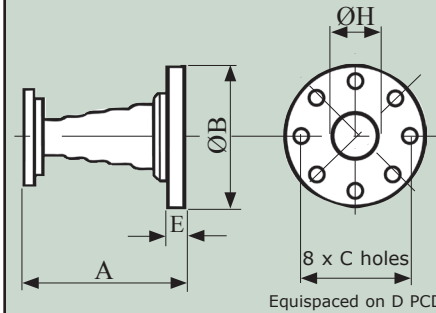
Model 17648-LH

ORDERING INFORMATION

Model: polarization suffix (Series 648 only); description

Example: Model 18648-RH rectangular to circular waveguide transition, right hand polarization (fitted with a dielectric quarter wave plate producing right hand polarization)

Series	Rectangular Port Flange Fitted	Circular Port Flange Fitted	Resistive Vane Fitted	Dielectric Quarter Wave Plate Fitted
643	Yes	Yes	No	No
644	Yes	Yes	Yes	No
648-*	Yes	Yes	Yes	Yes
↑	LH for left hand polarization (standard)			
	RH for right hand polarization (optional)			



Series 64*

Model	Frequency Range (GHz)	Waveguide			Overall Length A		Rectangular Port Flange Type	Circular Port Flange Dimensions					Weight (kg) Series 643/4 Only	
		WG	R	WR	Series 643 & 644	Series 648		B	C	D (PCD)	E	H		
1064*	2.6 - 3.95	10	32	284	241	on request	5985-99-083-1560/0010	146	6.9	132.0	11	73.91	4.30	
11A64*	3.22 - 4.9	11A	40	229	178	330	UDR 40	101	5.4	93.0	7	59.69	1.90	
1264*	3.94 - 5.99	12	48	187	140	249	UAR 48	89	5.4	80.0	7	48.77	1.50	
1364*	4.64 - 7.05	13	58	159	120	on request	UAR 58	89	5.4	80.0	7	41.42	1.10	
1464*	5.38 - 8.18	14	70	137	102	232	UAR 70	76	4.4	60.3	7	35.81	0.80	
1564*	6.58 - 10.0	15	84	112	82.5	222	UBR 84	60	3.2	52.0	7	28.58	0.30	
1664*	8.2 - 12.5	16	100	90	76.0	174	UBR 100	56	3.2	48.0	6	23.36	0.25	
1764*	9.84 - 15.0	17	120	75	64.0	149	UBR 120	56	3.2	48.0	6	19.35	0.20	
1864*	11.9 - 18.0	18	140	62	51.0	120	UBR 140	50	3.2	41.0	6	16.10	0.10	
1964*	14.5 - 22.0	19	180	51	51.0	120	UBR 180	50	3.2	41.0	6	13.25	0.10	
2064*	17.6 - 26.7	20	220	42	77.5	141	UBR 220	50	3.2	41.0	5	10.93	0.10	
2164*	21.7 - 33.0	21	260	34	67.5	122.5	UBR 260	50	3.2	41.0	5	8.76	0.10	
2264*	26.4 - 40.1	22	320	28	51.5	79.5	UG-599/U	44	3.2	35.0	3.5	7.24	0.06	
2364*	33.0 - 50.1	23	400	22	46.0	on request	UG-383/U	Fixing detail as for UG-383/U					5.80	0.06
2464*	39.3 - 59.7	24	500	19	43.0	68	UG-383/U MOD	Fixing detail as for UG-383/U					4.85	0.05
2564*	49.9 - 75.8	25	620	15	33.5	61.5	UG-385/U	Fixing detail as for UG-385/U					3.86	0.03
2664*	60.5 - 92.0	26	740	12	28.0	51.5	UG-387/U	Fixing detail as for UG-387/U					3.12	0.03
2764*	73.8 - 112	27	900	10	28.0	43	UG 387/U MOD	Fixing detail as for UG-387/U					2.57	0.03
2864*	92.3 - 140	28	1200	8	28.0	on request	UG 387/U MOD	Fixing detail as for UG-387/U					2.03	0.03
2964*	114 - 173	29	1400	6				Dimensions available on request						
3064*	145 - 220	30	1800	5										
3164*	172 - 261	31	2200	4										
3264*	217 - 330	32	2600	3										

For standard flange types and recommendations see pages 118 onwards