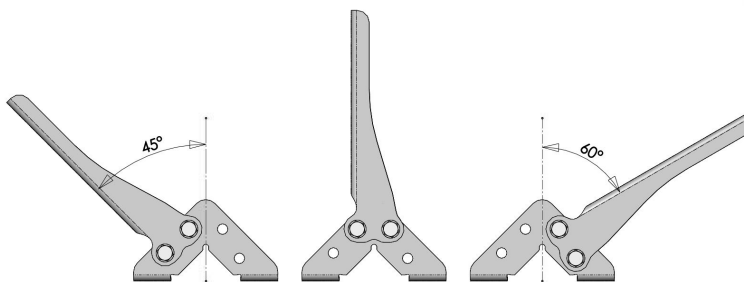


# MAFI 3610\*

## Raking Tower Leg Offset Family



Angle options for **3610**



Designed for mounting an equipment pole on a raking parent member in a perpendicular or oblique direction. The kits consist of a pair of brackets with all necessary fasteners.

### Flexibility

The raking tower leg offset can carry equipment up to 250 kg (551 lb), offset member included. This can be useful when radio and antenna equipment is to be preassembled off site and then lifted and mounted to a tower.

The hole pattern on the **3610** front clamp is designed to allow oblique installation on angular tower legs.

The bracket arm can be fixed at angles 45° or 60°, to the left or right, of the parent member. Offset poles for either kit can range from Ø 60.3–76.1 mm (2.4–3 in). When using the option **2867-1** the range increases up to 114.3 mm (4.5 in).

### Additional Data

For more detailed product data see sections **Bracket Properties**, **Rotational Slip Table** and **Package Data**.

Additional information for this product can be found at [www.mafigroup.com](http://www.mafigroup.com), or use the QR-codes on next page.

### How to Order

To order this kit, please contact MAFI quoting article number:

**3610** or E-order number (SEG): **6000676**

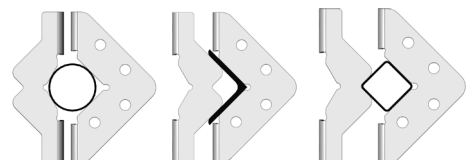
**3613** or E-order number (SEG): **6000677**

Contact information can be found at [www.mafigroup.com](http://www.mafigroup.com).



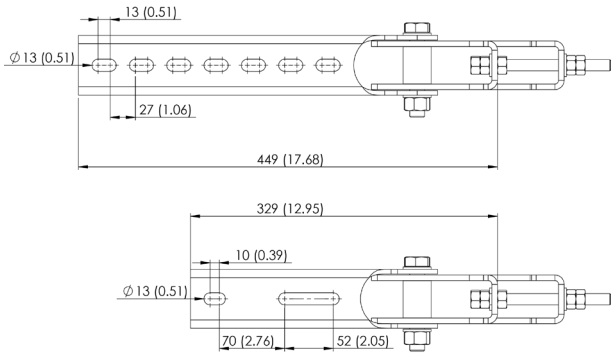
Content of kit 3610

Content of kit 3613

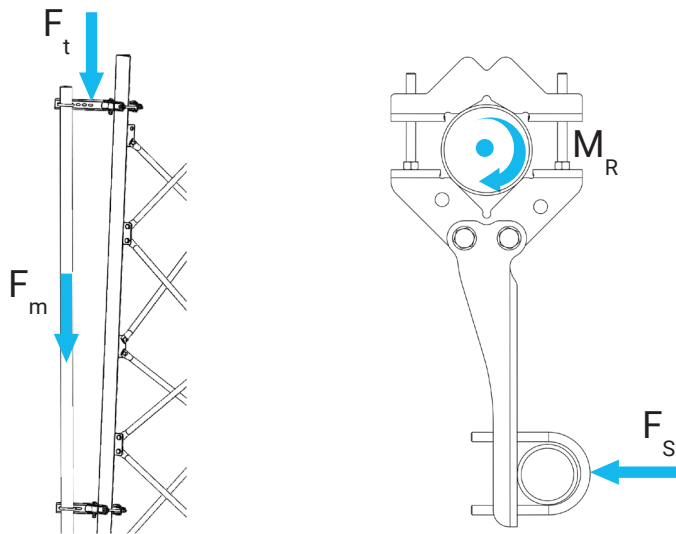
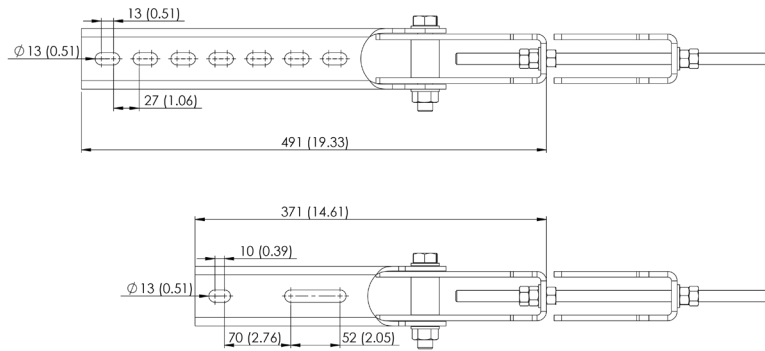


Measurements in mm (in)

**3610**



**3613**



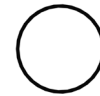
**Parent member**

**3610:**

60 × 60–120 × 120 mm  
2.4 × 2.4–4.7 × 4.7 in

**3613:**

120 × 120–200 × 200 mm  
4.7 × 4.7–7.9 × 7.9 in



**3610:**

Ø 76.1–139.7 mm  
Ø 3–5.5 in

**3613:**

Ø 139.7–244.5 mm  
Ø 5.5–9.6 in



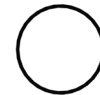
**3610:**

60 × 60–120 × 120 mm  
2.4 × 2.4–4.7 × 4.7 in

**3613:**

120 × 120–200 × 200 mm  
4.7 × 4.7–7.9 × 7.9 in

**Offset member**



Ø 60.3–76.1 mm  
Ø 2.4–3 in

Optional:

Ø 88.9–114.3 mm  
Ø 3.5–4.5 in

**Performance**

Ultimate transient man-load ( $F_t$ ): 2.4 kN  
Maximum side force/offset arm ( $F_s$ ): 4000 N  
Load capacity ( $F_m$ ): 250 kg (551 lb)  
Rot. slip resistance ( $M_R$ ): See *Rotational Slip Table*

**Parts list**

Part	Material	Quantity
Clamp	S355MC HDG	4
Bracket	S355MC HDG	2
U-bolt M12	8.8 HDG	2
Threaded rod M12	8.8 HDG	4
Fasteners	8.8 HDG	Incl.

**Product options**

**2867-1:** U-bolt kit for circular members Ø 88.9–114.3 mm ( 3.5–4.5 in).



3610



3613



EN 1090

# Rotational Slip Table

## Design resistance data

Use the table below to check for rotational slip when mounting brackets on a circular member.

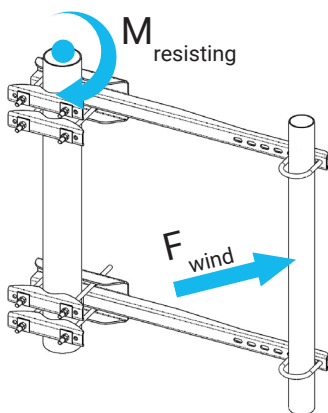
Use the unfactored wind load on the equipment multiplied by the actual offset dimension from the centreline of the parent tube to the centroid of the equipment to calculate the applied torque. The unfactored load is to be used because rotational slip is regarded as a serviceability failure and not a strength failure.

The values shown in the table are for a single bracket, so for a normal pair of brackets, the total torque resistance would be double that shown in the table.

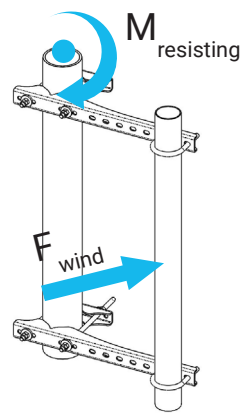
Each bracket added to the offset pole increases rotational slip resistance by the figure shown in the table. The resistance increases linearly with the diameter of the parent pole.

### Resisting torque per single bracket

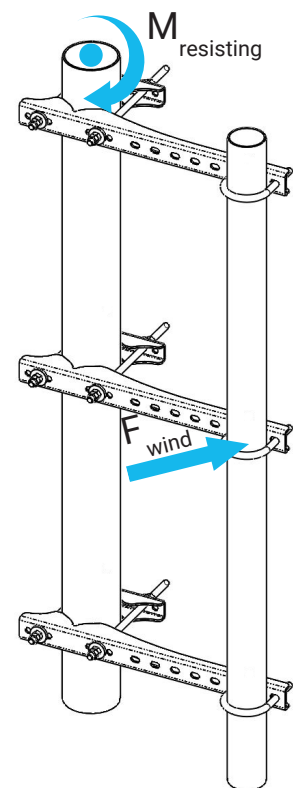
Parent member ø mm (in)	Torque (Nm) General	Torque (Nm) Product: 3272	Torque (Nm) Product: 3541	Torque (Nm) Product: 3544	Torque (Nm) Product: 2414
25 (1)	77	-	-	-	-
42.3 (1.7)	152	-	-	-	-
48.3 (1.9)	178	356	-	-	-
60.3 (2.4)	230	460	115	172	-
76.1 (3)	298	596	159	223	-
88.9 (3.5)	353	706	176	264	-
101.6 (4)	408	816	204	306	816
114.3 (4.5)	462	924	231	346	924
139.7 (5.5)	572	1144	-	-	-
152.4 (6)	627	1254	-	-	-
168.9 (6.6)	698	1396	-	-	-
193 (7.6)	802	1396	-	-	-
244.5 (9.6)	1025	-	-	-	-



Example using two brackets with double clamps. Parent member is ø 114.3 mm (4.5 in). Maximum torque is then  $2 \times 924 = 1848$  Nm.



Example using two brackets with single clamps. Parent member is ø 114.3 mm (4.5 in). Maximum torque is then  $2 \times 462 = 924$  Nm.



Example using three brackets with single clamps. Parent member is ø 114.3 mm (4.5 in). Maximum torque is then  $3 \times 462 = 1386$  Nm.

# Bracket Properties

## Guidance

MAFI brackets are flexible – they can fit different sizes and profiles of parent member, and the offset distance can be varied. This table allows a quick comparison of load capacity, parent member, offset member and offset range. **Please read our disclaimer found on page 4.**

It's OK to have the pole a size less than the U-bolt. A U-bolt works by squeezing the pole against the bracket through the tangential point of contact, not by gripping the sides of the pole. It's important to follow the installation instructions regarding the specified nut-tightening torque. The tightening torque is calculated for every MAFI U-bolt leg or threaded rod to produce the required tension. It's not going to slip if it's installed properly.

Ø U-bolt mm (in)	Offset Member Allowed Ø mm (in)				
	60.3 (2.4)	76.1 (3)	88.9 (3.5)	101.1 (4)	114.3 (4.5)
76.1 (3)	✓	✓	✗	✗	✗
114.3 (4.5)	✗	✗	✓	✓	✓

Load Capacity is the maximum mass (equipment plus offset member) that you can hang on a pair of brackets at the maximum offset. Extra brackets can be added to increase the load capacity proportionately e.g. two pairs of brackets supporting a single offset member can carry double the mass of a single pair.

In addition to the permitted equipment mass, brackets mounted at least as a pair can support a 160 kg rigger standing on the end, exceptions are **53XX** and **4324X**.

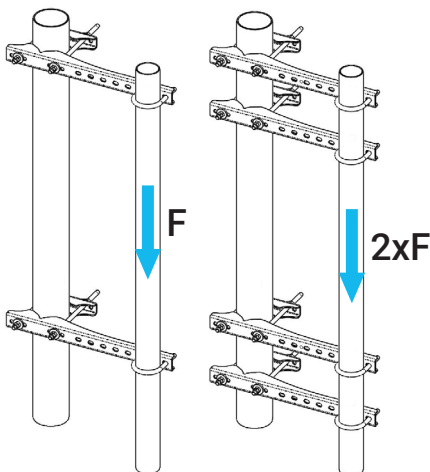
In addition to the permitted equipment mass, brackets mounted at least as a pair can support a fall arrest load of 6 kN. Exceptions are **3274**, **53XX** and **4324X**. If a fall arrest event would occur, all involved brackets should be replaced.

All brackets in the table apart from **532X** and **4324X** are sold as pairs.

## Load Capacity

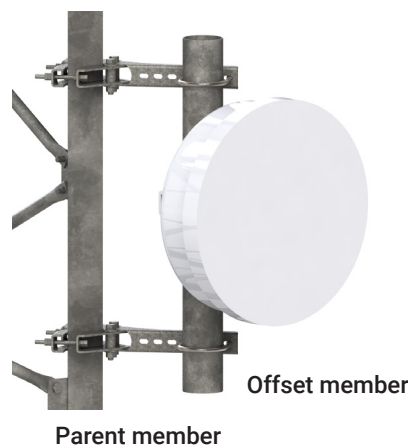
The **3263** bracket pair to the left can carry 120 kg/265 lb.

Using two pairs of bracket means that the load capacity doubles to 240 kg/529 lb.



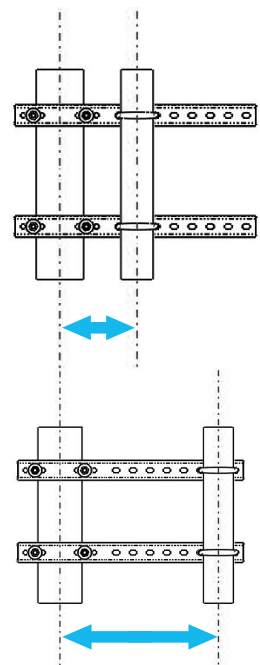
## Parent Member versus Offset Member











The parent member is what the bracket is attached to, while the offset member is where the equipment goes.



## Min and Max Offset

The minimum and maximum c/c distance between parent and offset member.



Product	Load Capacity	Parent Member	Offset Member	Min Offset	Max Offset
<b>3263</b> 	120 kg (265 lb)	○ 25 - 168.9 mm (1 - 6.7 in) □ 40 - 120 mm (1.6 - 4.7 in) └ 40 - 120 mm (1.6 - 4.7 in)	○ 60.3 - 76.1 mm (2.4 - 3 in)	195 mm (7.7 in)	420 mm (16.5 in)
<b>3265</b> 	120 kg (265 lb)	○ 25 - 168.9 mm (1 - 6.7 in) □ 40 - 120 mm (1.6 - 4.7 in) └ 40 - 120 mm (1.6 - 4.7 in)	○ 88.9 - 114 mm (3.5 - 4.5 in)	217 mm (8.5 in)	397 mm (15.6 in)
<b>3272</b> 	60 kg (132 lb)	○ 48.3 - 193 mm (1.9 - 7.6 in) □ 40 - 120 mm (1.6 - 4.7 in) └ 40 - 120 mm (1.6 - 4.7 in)	○ 60.3 - 76.1 mm (2.4 - 3 in) 88.9 - 114.3 mm <sup>1)</sup> (3.5 - 4.5 in) <sup>1)</sup>	617 mm (24.3 in)	797 mm (31.4 in)
<b>3273</b> 	120 kg (265 lb)	○ 25 - 168.9 mm (1 - 6.7 in) □ 40 - 120 mm (1.6 - 4.7 in) └ 40 - 120 mm (1.6 - 4.7 in)	○ 60.3 - 76.1 mm (2.4 - 3 in)	195 mm (7.7 in)	240 mm (9.4 in)
<b>3268</b> 	90 kg per offset (198 lb per offset)	○ 76.1 - 168.9 mm (3 - 6.7 in)	○ 60.3 - 76.1 mm (2.4 - 3 in) 88.9 - 114.3 mm <sup>1)</sup> (3.5 - 4.5 in) <sup>1)</sup>	217 mm (8.5 in)	422 mm (16.6 in)
<b>3270</b> 	60 kg per offset (132 lb per offset)	○ 76.1 - 168.9 mm (3 - 6.7 in)	○ 60.3 - 76.1 mm (2.4 - 3 in)	400 mm (15.7 in)	850 mm (33.5 in)
<b>3610</b> 	250 kg (551 lb)	○ 76.1 - 139.7 mm (3 - 5.5 in) □ 60 - 120 mm (2.4 - 4.7 in) └ 60 - 120 mm (2.4 - 4.7 in)	○ 60.3 - 76.1 mm (2.4 - 3 in) 88.9 - 114.3 mm <sup>1)</sup> (3.5 - 4.5 in) <sup>1)</sup>	<b>Upper arm:</b> 219 mm (8.6 in) <b>Lower arm:</b> 250 mm (9.8 in)	<b>Upper arm:</b> 424 mm (16.7 in) <b>Lower arm:</b> 305 mm (12 in)
<b>3611</b> 	250 kg (551 lb)	○ 76.1 - 139.7 mm (3 - 5.5 in) □ 60 - 120 mm (2.4 - 4.7 in) └ 60 - 120 mm (2.4 - 4.7 in)	○ 60.3 - 76.1 mm (2.4 - 3 in) 88.9 - 114.3 mm <sup>1)</sup> (3.5 - 4.5 in) <sup>1)</sup>	219 mm (8.6 in)	424 mm (16.7 in)
<b>3612</b> 	250 kg (551 lb)	○ 76.1 - 139.7 mm (3 - 5.5 in) □ 60 - 120 mm (2.4 - 4.7 in) └ 60 - 120 mm (2.4 - 4.7 in)	○ 60.3 - 76.1 mm (2.4 - 3 in) 88.9 - 114.3 mm <sup>1)</sup> (3.5 - 4.5 in) <sup>1)</sup>	250 mm (9.8 in)	305 mm (12 in)
<b>3613</b> 	250 kg (551 lb)	○ 139.7 - 244.5 mm (5.5 - 9.6 in) □ 120 - 200 mm (4.7 - 7.9 in) └ 120 - 200 mm (4.7 - 7.9 in)	○ 60.3 - 76.1 mm (2.4 - 3 in) 88.9 - 114.3 mm <sup>1)</sup> (3.5 - 4.5 in) <sup>1)</sup>	<b>Upper arm:</b> 264 mm (10.4 in) <b>Lower arm:</b> 295 mm (11.6 in)	<b>Upper arm:</b> 499 mm (19.6 in) <b>Lower arm:</b> 379 mm (14.9 in)

<sup>1)</sup> Requires U-bolt kit option 2867-1 for mounting on circular member 88.9 - 114.3 mm (3.5 - 4.5 in).

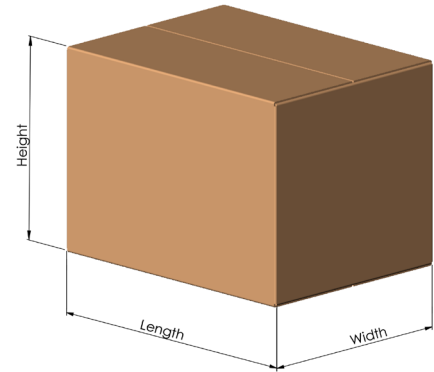
Product	Load Capacity	Parent Member	Offset Member	Min Offset	Max Offset
<b>3614</b> 	250 kg (551 lb)	○ 139.7 - 244.5 mm (5.5 - 9.6 in) □ 120 - 200 mm (4.7 - 7.9 in) └ 120 - 200 mm (4.7 - 7.9 in)	○ 60.3 - 76.1 mm (2.4 - 3 in) 88.9 - 114.3 mm <sup>1)</sup> (3.5 - 4.5 in) <sup>1)</sup>	264 mm (10.4 in)	499 mm (19.6 in)
<b>3615</b> 	250 kg (551 lb)	○ 139.7 - 244.5 mm (5.5 - 9.6 in) □ 120 - 200 mm (4.7 - 7.9 in) └ 120 - 200 mm (4.7 - 7.9 in)	○ 60.3 - 76.1 mm (2.4 - 3 in) 88.9 - 114.3 mm <sup>1)</sup> (3.5 - 4.5 in) <sup>1)</sup>	295 mm (11.6 in)	379 mm (14.9 in)
<b>3274</b> 	250 kg (551 lb)	○ 25 - 114.3 mm (1 - 4.5 in) □ 40 - 80 mm (1.6 - 3.1 in) └ 40 - 80 mm (1.6 - 3.1 in)	○ 48.3 - 114.3 mm (1.9 - 4.5 in)	96 mm (3.8 in)	186 mm (7.3 in)
<b>4415</b> 	60 kg per offset (132 lb per offset)	○ 76.1 - 114.3 mm (3 - 4.5 in)	○ 60.3 - 76.1 mm (2.4 - 3 in)	164 mm (6.5 in)	186 mm (7.3 in)
<b>4418</b> 	60 kg per offset (132 lb per offset)	○ 76.1 - 114.3 mm (3 - 4.5 in)	○ 60.3 - 76.1 mm (2.4 - 3 in)	264 mm (10.4 in)	286 mm (11.3 in)
<b>5310</b> 	100 kg (220 lb)	○ 25 - 35 mm (1 - 1.4 in)	□ 50 - 60 mm (2 - 2.4 in)	37.5 mm (1.5 in)	47.5 mm (1.9 in)
<b>5311</b> 	100 kg (220 lb)	○ 35 - 60.3 mm (1.4 - 2.4 in)	□ 50 - 60 mm (2 - 2.4 in)	42.5 mm (1.7 in)	60 mm (2.4 in)
<b>5312</b> 	100 kg (220 lb)	□ 50 - 60 mm (2 - 2.4 in)	□ 50 - 60 mm (2 - 2.4 in)	50 mm (2 in)	60 mm (2.4 in)
<b>5320</b> 	100 kg (220 lb)	□ 50 - 60 mm (2 - 2.4 in)	○ 76.1 mm (3 in)	82 mm (3.2 in)	87 mm (3.4 in)
<b>5321</b> 	100 kg (220 lb)	□ 50 - 60 mm (2 - 2.4 in)	○ 114.3 mm (4.5 in)	101 mm (4 in)	106 mm (4.2 in)
<b>43246</b> 	200 kg (441 lb)	○ 60.3 mm (2.4 in)	○ 48.3 mm (1.9 in)	96 mm (3.8 in)	96 mm (3.8 in)
<b>43247</b> 	200 kg (441 lb)	○ 76.1 mm (3 in)	○ 76.1 mm (3 in)	116 mm (4.6 in)	116 mm (4.6 in)
<b>43248</b> 	200 kg (441 lb)	○ 114.3 mm (4.5 in)	○ 76.1 mm (3 in)	131 mm (5.2 in)	131 mm (5.2 in)
<b>43249</b> 	200 kg (441 lb)	○ 114.3 mm (4.5 in)	○ 114.3 mm (4.5 in)	150 mm (5.9 in)	150 mm (5.9 in)

<sup>1)</sup> Requires U-bolt kit option 2867-1 for mounting on circular member 88.9 - 114.3 mm (3.5 - 4.5 in).

# Package data

## Package data

Product	Length mm (in)	Width mm (in)	Height mm (in)	Weight kg (lb)
1234	300 (11.8)	300 (11.8)	30 (1.2)	2.4 (5.3)
1236	200 (7.9)	50 (2)	50 (2)	0.5 (1.1)
1237	460 (18.1)	110 (4.3)	40 (1.6)	1.5 (3.3)
1241	200 (7.9)	180 (7.1)	140 (5.5)	2.9 (6)
1242	570 (22.4)	125 (4.9)	25 (1)	1.6 (3.5)
2230	1100 (43.3)	160 (6.3)	100 (3.9)	13.8 (30.4)
2231	2100 (82.7)	160 (6.3)	100 (3.9)	20.3 (44.8)
2232	3100 (122)	160 (6.3)	100 (3.9)	26.8 (59.1)
2233	1100 (43.3)	160 (6.3)	100 (3.9)	14.8 (32.6)
2234	2100 (82.7)	160 (6.3)	100 (3.9)	21.3 (47)
2235	3100 (122)	160 (6.3)	100 (3.9)	27.8 (61.3)
2414	385 (15.2)	295 (11.6)	200 (7.9)	17 (37.5)
3022	1040 (40.9)	170 (6.7)	95 (3.7)	21 (46.3)
3058	420 (16.5)	100 (3.9)	110 (4.3)	2.6 (5.7)
3115	250 (9.8)	150 (5.9)	100 (3.9)	4 (8.8)
3116	178 (7)	175 (6.9)	82 (3.2)	3.2 (7.1)
3117	280 (11)	180 (7.1)	120 (4.7)	6.2 (13.7)
3263	640 (25.2)	115 (4.5)	65 (2.6)	7.3 (16.1)
3265	640 (25.2)	150 (5.9)	70 (2.8)	7.5 (16.5)
3268	1050 (41.3)	170 (6.7)	65 (2.6)	12.1 (26.7)
3270	2000 (78.7)	160 (6.3)	160 (6.3)	40 (88.2)
3272	1050 (41.3)	170 (6.7)	65 (2.6)	19.4 (42.8)
3273	460 (18.1)	115 (4.5)	60 (2.4)	6.2 (13.7)
3274	410 (16.1)	110 (4.3)	50 (2)	5.8 (12.8)
3510	210 (8.3)	160 (6.3)	120 (4.7)	6 (13.2)
3541	385 (15.2)	300 (11.8)	90 (3.5)	4.9 (10.8)
3544	590 (23.2)	450 (17.7)	150 (5.9)	13.8 (30.4)
3610	440 (17.3)	280 (11)	80 (3.1)	12.1 (26.7)
3611	500 (19.7)	280 (11)	80 (3.1)	12.9 (28.4)
3612	500 (19.7)	280 (11)	80 (3.1)	11.2 (24.7)
3613	500 (19.7)	400 (15.7)	100 (3.9)	16.5 (36.4)
3614	440 (17.3)	400 (15.7)	100 (3.9)	17.5 (38.6)
3615	440 (17.3)	400 (15.7)	100 (3.9)	16.1 (35.5)
4019-2	360 (14.2)	230 (9.1)	90 (3.5)	5.8 (12.8)
4019-3	430 (16.9)	360 (14.2)	60 (2.4)	10.6 (23.4)
4019-4	810 (31.9)	260 (10.2)	60 (2.4)	11.5 (25.4)
4020	230 (9.1)	210 (8.3)	85 (3.3)	4.3 (9.5)
4036	405 (15.9)	105 (4.1)	100 (3.9)	5.7 (12.6)
4037	395 (15.6)	105 (4.1)	60 (2.4)	1.9 (4.2)



**Package data**

<b>Product</b>	<b>Length mm (in)</b>	<b>Width mm (in)</b>	<b>Height mm (in)</b>	<b>Weight kg (lb)</b>
4112	1200 (47.2)	800 (31.5)	340 (13.4)	122 (269)
4120	1130 (44.5)	310 (12.2)	130 (5.1)	16.7 (36.8)
4309	1200 (47.2)	800 (31.5)	340 (13.4)	111 (244.7)
4310	1200 (47.2)	800 (31.5)	340 (13.4)	65.7 (144.8)
4316	1850 (72.8)	350 (13.8)	230 (9.1)	27 (59.5)
4415	390 (15.4)	230 (9.1)	120 (4.7)	13.5 (29.8)
4418	390 (15.4)	275 (10.8)	120 (4.7)	15.3 (33.7)
4600	1250 (49.2)	350 (13.8)	350 (13.8)	65 (143.3)
4601	1750 (68.9)	350 (13.8)	350 (13.8)	105 (231.5)
4602	2300 (90.6)	350 (13.8)	350 (13.8)	137 (302)
5012	300 (11.8)	255 (10)	65 (2.6)	5.2 (11.5)
5013	265 (10.4)	240 (9.4)	65 (2.6)	4.4 (9.7)
5022	300 (11.8)	255 (10)	65 (2.6)	5.7 (12.6)
5023	265 (10.4)	240 (9.4)	65 (2.6)	4.4 (9.7)
5030	390 (15.4)	240 (9.4)	130 (5.1)	12.5 (27.6)
5031	260 (10.2)	230 (9)	75 (2.9)	8 (17.6)
5110	540 (21.3)	345 (13.6)	20 (0.8)	3.3 (7.3)
5310	150 (5.9)	110 (4.3)	40 (1.6)	2.8 (6.2)
5311	180 (7.1)	110 (4.3)	40 (1.6)	3.1 (6.8)
5312	180 (7.1)	110 (4.3)	40 (1.6)	3.1 (6.8)
5320	220 (8.7)	140 (5.5)	50 (2)	2.4 (5.3)
5321	250 (9.8)	150 (5.9)	50 (2)	2.7 (6)
6029	500 (19.7)	100 (3.9)	70 (2.8)	4.9 (10.8)
6030	215 (8.5)	155 (6.1)	70 (2.8)	1.5 (3.3)
7000	390 (15.4)	370 (14.6)	50 (2)	0.5 (1.1)
8051	1400 (55.1)	800 (31.5)	350 (13.8)	86 (189.6)
8057	1400 (55.1)	800 (31.5)	350 (13.8)	57 (125.7)
32655/57/58	400 (15.7)	100 (3.9)	50 (2)	1.2 (2.6)
32660/63	550 (21.7)	100 (3.9)	70 (2.8)	2 (4.4)
32664	550 (21.7)	100 (3.9)	70 (2.8)	2.7 (6)
41121	1200 (47.2)	800 (31.5)	340 (13.4)	118 (260.1)
43091	1200 (47.2)	800 (31.5)	340 (13.4)	94.9 (209.2)
43092	1200 (47.2)	800 (31.5)	340 (13.4)	100.7 (222)
43246	210 (8.3)	210 (8.3)	75 (2.9)	3.2 (7.1)
43247	230 (9.1)	230 (9.1)	75 (2.9)	4.4 (9.7)
43248	280 (11)	280 (11)	100 (3.9)	6.9 (15.2)
43249	280 (11)	280 (11)	100 (3.9)	7.8 (17.2)
43692	800 (31.5)	600 (23.6)	340 (13.4)	12.5 (27.6)
91100	1640 (64.6)	450 (17.7)	310 (12.2)	105 (231.5)
91101	2140 (84.2)	450 (17.7)	310 (12.2)	120 (264.6)
91110	2300 (90.6)	300 (11.8)	200 (7.9)	22 (48.5)