



STAR
outdoor
it's easy!

MARQUEE MANUAL

Set Up Guide	2-3
Care Instructions	4
Warranty	5-6
Spare Parts	7-11
Engineers Report	12-22



CARE INSTRUCTIONS

Use for:

**MARQUEES
TABLE COVERS
DECK CHAIRS**

Do not use harsh detergents
Do not machine wash
Do not bleach

Hand wash with warm, soapy water
if hosing down, ensure it is completely
dry before packing away.

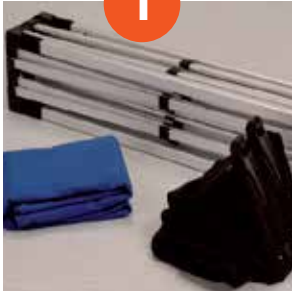
To remove creases - use a warm iron with a
piece of cotton between the fabric and iron

Do not iron directly onto fabric.

**STAR OUTDOOR DOES NOT ACCEPT ANY RESPONSIBILITY
FOR DAMAGED PRINT DUE TO INCORRECT HANDLING**

MARQUEE SET UP GUIDE

1



Unpack
all boxes

2



Stand frame up
with feet on
the floor

3



Using
2 PEOPLE ONLY
hold legs and semi
extend the frame

4



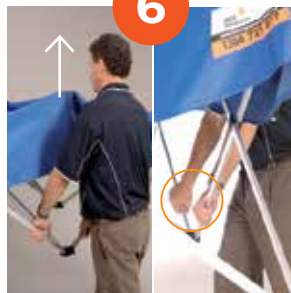
'Parachute' the
canopy over
the frame

5



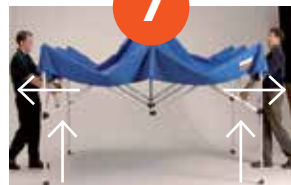
Attach velcro to
each corner of
frame and attach
elastic to peak pole
caps on the inside

6



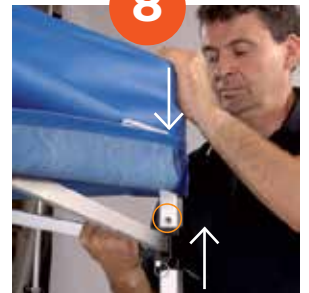
Place hands on
bottom centre of
truss and lift

7



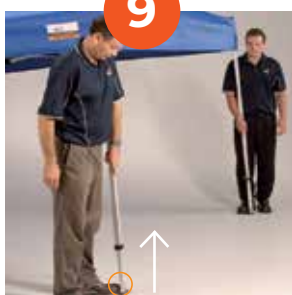
Walk back whilst
lifting until the
marquee is closed
to full extension

8



Place one hand on
top of the leg, push
strut up with other
hand until it locks
into the leg hole

9



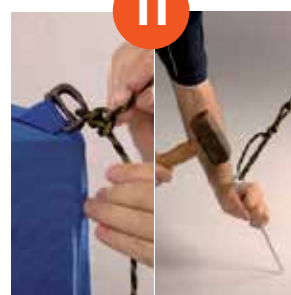
Place your foot on
the foot of the leg
and pull the leg up
until it locks into
place

10



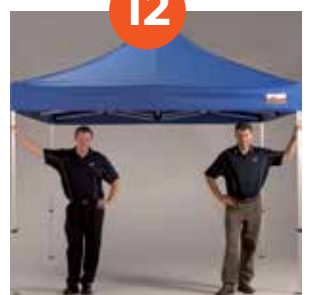
Secure the valance
to the frame by
fastening the clip
straps

11



Secure marquee
(from eyelets at
top corners) to the
ground using ropes,
pegs, weightbags

12



Congratulations!
Enjoy your marquee

MARQUEE PACK DOWN GUIDE

1



Unfasten all ropes & remove weight bags

2



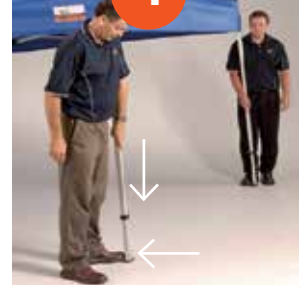
Undo all the clip straps inside the canopy

3



Pull the lower ring on each leg to undo the leg locking pin

4



Slide leg down to the footing. Repeat on all the legs

5



Pull the upper ring on each leg to release the locking pin

6



With **2 PEOPLE ONLY**, hold the top trusses and walk forward until the marquee fully closes

Caution!

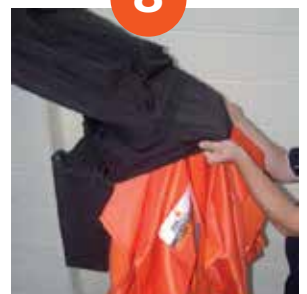


7



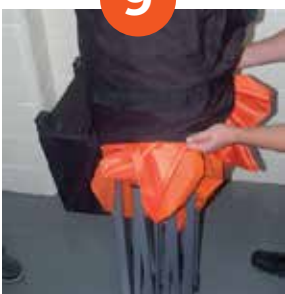
When completely collapsed hug the marquee to compress

8



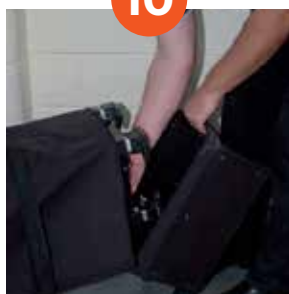
Place the bag over the marquee with the wheels at the back

9



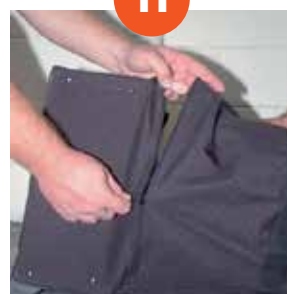
Gently pull the bag down until it reached the ground

10



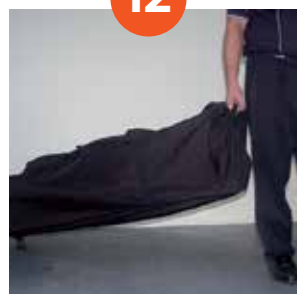
Lay the marquee down and place legs inside the hard base of the bag

11



Use the zips to close the bag completely

12



Holding the handle at the top of the bag, wheel the marquee away



Classic 32 Marquee Frame and Canopy Warranty

Our Classic 32 Marquee Frame and Canopy have a three (3) year warranty on manufacturing faults excluding print fading.

What this means is if a part - aluminium sections, nylon joiners, pull, latching pins or straps should fail in the normal course of use we will replace the parts FREE OF CHARGE. These parts will be supplied, not installed.

However, if the frame or canopy is damaged or broken through misadventure the warranty is void.

The most common types of misadventure include but are not limited to:

1. The marquee is not secured properly with pegs and guy ropes and/or weight plates or weight bags, and natural elements like a strong wind causes damage to the marquee.
2. The straps on the canopy are not secured properly, they must be behind the truss looking from the inside out. This is because when it rains the water will pool on the canopy and create a large weight-bearing onto the frame which will cause the frame to buckle and collapse.
3. The marquee is left unattended, and a storm or other weather event occurs and damage to the marquees. It is our strong recommendation to never leave marquees unattended and always pack away marquees when strong winds, heavy rain, storms, or other potentially damaging weather is imminent.
4. the marquee frame is damaged in transit.

Please note: A marquee warranty is similar to a car warranty. If there is a problem with the motor, it is a warranty claim. If the car is involved in a crash, it is an insurance claim.

We have the right to update our warranties at any time and without a requirement to inform clients. To view the latest version please visit staroutdoor.com.au



Deluxe 40 Marquee Frame and Canopy Warranty

Our Deluxe 40 Marquee Frame and Canopy have a five (5) year warranty on manufacturing faults excluding print fading.

What this means is if a part - aluminium sections, nylon joiners, pull, latching pins or straps should fail in the normal course of use we will replace the parts FREE OF CHARGE. These parts will be supplied, not installed.

However, if the frame or canopy is damaged or broken through misadventure the warranty is void.

The most common types of misadventure include but are not limited to:

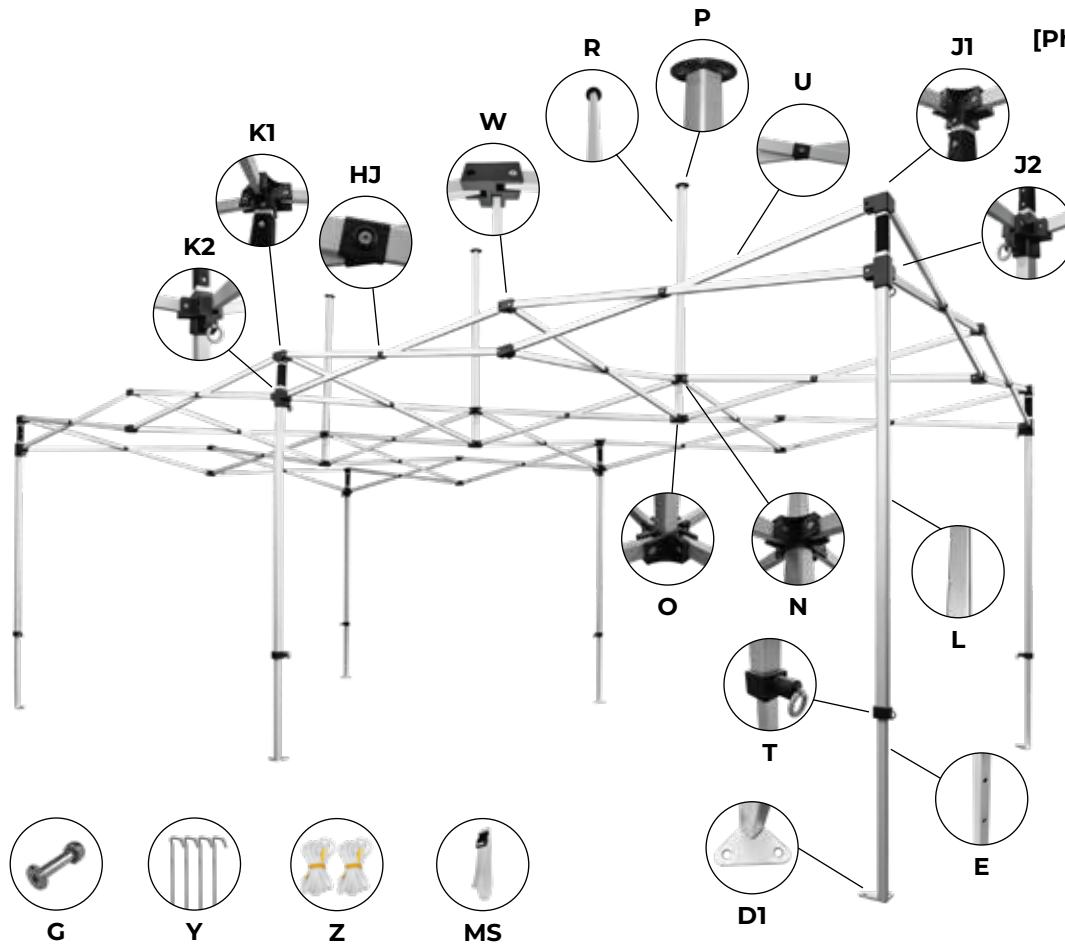
1. The marquee is not secured properly with pegs and guy ropes and/or weight plates or weight bags, and natural elements like a strong wind causes damage to the marquee.
2. The straps on the canopy are not secured properly, they must be behind the truss looking from the inside out. This is because when it rains the water will pool on the canopy and create a large weight-bearing onto the frame which will cause the frame to buckle and collapse.
3. The marquee is left unattended, and a storm or other weather event occurs and damage to the marquees. It is our strong recommendation to never leave marquees unattended and always pack away marquees when strong winds, heavy rain, storms, or other potentially damaging weather is imminent.
4. the marquee frame is damaged in transit.

Please note: A marquee warranty is similar to a car warranty. If there is a problem with the motor, it is a warranty claim. If the car is involved in a crash, it is an insurance claim.

We have the right to update our warranties at any time and without a requirement to inform clients. To view the latest version please visit staroutdoor.com.au



Classic Marquee Spare Parts Form



[Photos are indicative only
and may vary across
different models]

**THIS FORM IS FOR
CLASSIC FRAMES ONLY**

**PLEASE ENSURE THE OUTER LEG
IS 32x32mm**

Complete parts 1, 2, 3 and 4

1

CUSTOMER DETAILS

Business Name: _____	Contact Name: _____
Phone: _____	Mobile: _____
Email: _____	
Delivery Address: _____	Invoice Address: _____
_____	_____
Postcode: _____	Postcode: _____

2

PAYMENT DETAILS - Payment is required prior to dispatch

☐ Direct Deposit - Star Marquees Pty Ltd Bank: Westpac Acacia Ridge BSB: 034081 Acc: 203461	☐ Credit Card - ☐ VISA ☐ MASTERCARD
	Card Name: _____
	Card Number: _____
	Expiry Date: _____ CVC Code: _____
	Amount: AU \$ _____ Signature: _____



Classic Marquee Spare Parts Form

Please send your completed form (2 pages) to sales@staroutdoor.com.au
Payment is required prior to dispatch.

Contact Name: _____ Phone: _____

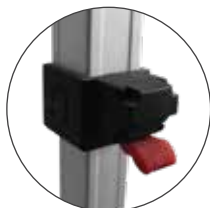
3

WHICH MODEL?

Check the leg pins and tick the appropriate model:



☐ **MK1**
 CHROME PULL RING
Limited Stock



☐ **MK2**
 RED PUSH LEVER
Limited Stock



☐ **MK3**
 RED PULL RING
Limited Stock



☐ **MK4**
 GRAY PULL RING

4

CLASSIC COMMON PARTS

ITEM	NAME	PHOTO	PRICE	QUANTITY
G	Joint Bolt 32		\$0.83 PRICE PER UNIT	
HJ	Truss Joint Bolt, Washer & Cap		\$2.20 PRICE PER UNIT	
J1	Outer Leg Bracket 2 Way		\$8.25 PRICE PER UNIT	
J2	Slider Bracket 2 Way		\$8.25 PRICE PER UNIT	
K1	Outer Leg Bracket 3 Way (3x6 ONLY)		\$8.25 PRICE PER UNIT	
K2	Slider Bracket 3 Way (3x6 ONLY)		\$8.25 PRICE PER UNIT	
N	Upper Peak Bracket 4 Way		\$8.25 PRICE PER UNIT	
O	Lower Peak Bracket 4 Way		\$8.25 PRICE PER UNIT	
T	Leg Adjustment Ring Pull		\$8.25 PRICE PER UNIT	
W	Truss Cap Upper & Lower		\$5.50 PRICE PER UNIT	
Y	Pegs		\$8.25 PRICE PER UNIT	
Z	Ropes - 4 Set		\$8.25 PRICE PER UNIT	
MS	Marquee Strap		\$5.00 PRICE PER UNIT	

CLASSIC ALUMINIUM PARTS

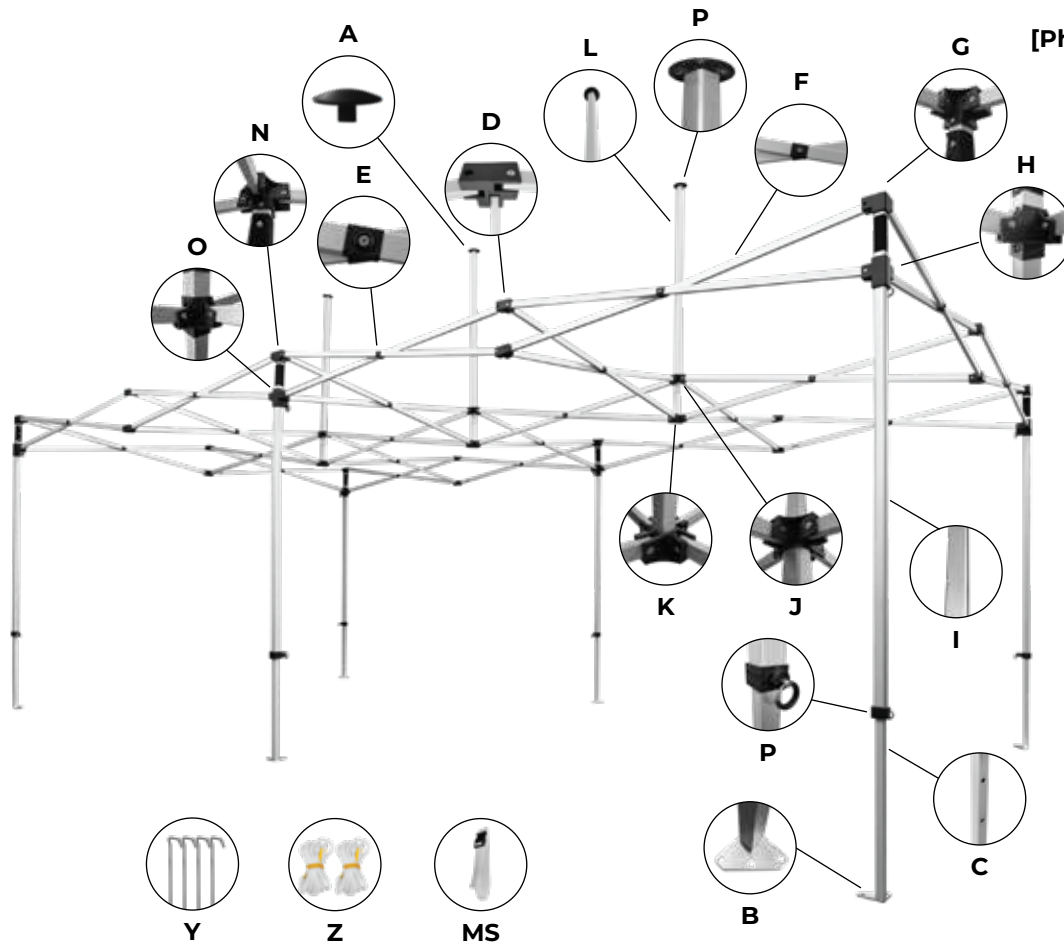
D1	Frame Foot Pad		\$5.50 PRICE PER UNIT	
E	Inner Leg - includes D1		\$22.00 PRICE PER UNIT	
L	Outer Leg - includes J1, J2 & T		\$44.00 PRICE PER UNIT	
P	Upper Peak Pole with Dome Cap		\$13.20 PRICE PER UNIT	
R	Lower Peak Pole - includes O		\$13.75 PRICE PER UNIT	
U	Scissor Truss (Pair) - includes HJ		\$36.30 PRICE PER UNIT	

[Photos are indicative only and may vary across different models]

EXCL. GST & FREIGHT



Deluxe Marquee Spare Parts Form



[Photos are indicative only
and may vary across
different models]

**THIS FORM IS FOR
DELUXE FRAMES ONLY**

**PLEASE ENSURE THE OUTER LEG
IS 40x40mm**

Complete parts 1, 2, 3 and 4

1

CUSTOMER DETAILS

Business Name: _____	Contact Name: _____
Phone: _____	Mobile: _____
Email: _____	
Delivery Address: _____	Invoice Address: _____
_____	_____
Postcode: _____	Postcode: _____

2

PAYMENT DETAILS - Payment is required prior to dispatch

☐ Direct Deposit - Star Marquees Pty Ltd Bank: Westpac Acacia Ridge BSB: 034081 Acc: 203461	☐ Credit Card - ☐ VISA ☐ MASTERCARD Card Name: _____ Card Number: _____ Expiry Date: _____ CVC Code: _____ Amount: AU \$ _____ Signature: _____
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Deluxe Marquee Spare Parts Form

Please send your completed form (2 pages) to sales@staroutdoor.com.au
Payment is required prior to dispatch.

Contact Name: _____ Phone: _____

4

ITEM	NAME	PHOTO	PRICE	QUANTITY
A	Dome Cap		\$6.60 PRICE PER UNIT	
B	Frame Foot Pad		\$5.50 PRICE PER UNIT	
C	Inner Leg - includes B		\$22.00 PRICE PER UNIT	
D	Truss Cap Upper & Lower		\$5.50 PRICE PER UNIT	
E	Truss Joint Bolt, Washer & Cap		\$2.20 PRICE PER UNIT	
F	Scissor Truss (Pair) - includes E		\$36.30 PRICE PER UNIT	
G	Outer Leg Bracket 2 Way		\$8.25 PRICE PER UNIT	
H	Slider Bracket 2 Way		\$8.25 PRICE PER UNIT	
I	Outer Leg - includes G, H & P		\$44.00 PRICE PER UNIT	
J	Upper Peak Bracket 4 Way		\$8.25 PRICE PER UNIT	
K	Lower Peak Bracket 4 Way		\$8.25 PRICE PER UNIT	
L	Upper Peak Pole with Dome Cap		\$13.20 PRICE PER UNIT	
M	Lower Peak Pole - includes K		\$13.75 PRICE PER UNIT	
N	Outer Leg Bracket 3 Way (3x6 ONLY)		\$8.25 PRICE PER UNIT	
O	Slider Bracket 3 Way (3x6 ONLY)		\$8.25 PRICE PER UNIT	
P	Leg Adjustment Ring Pull		\$8.25 PRICE PER UNIT	
Y	Pegs		\$8.25 PRICE PER UNIT	
Z	Ropes - 4 Set		\$8.25 PRICE PER UNIT	
MS	Marquee Strap		\$5.00 PRICE PER UNIT	

[Photos are indicative only and may vary across different models]

EXCL. GST & FREIGHT

DESIGN NOTES

Project: Base weight Specification
Shadestar Marquees

Project No: 22123
Date: Apr 2022
In: AS

For: Star Outdoor
Att: Mark Star

GENERAL

Magryn & Associates were engaged to provide the general counterweight specifications required (to resist wind uplift) for various Shadestar marquees, for general use in various locations.

The Shadestar "Classic" 32 and Shadestar "Deluxe" 40 marquees analysed are:

Shadestar "Classic" 32	1.8m x 1.8m
	3.0m x 3.0m
	3.0m x 4.5m
	3.0m x 6.0m
Shadestar "Deluxe" 40	3.0m x 3.0m
	3.0m x 6.0m
	4.0m x 8.0m

The design of the marquee frames is by others.

LOADS

Wind load has been assessed to AS 1170.2 for the wind speed of 20 knots.

DESIGN STANDARDS

The uplift on the marquees was checked in accordance with the latest versions of the following standards:

AS/NZS 1170.0:2002	Structural design actions: Part 0: General Principles
AS/NZS 1170.2:2021	Structural design actions: Part 2: Wind actions

NOTES

- The specifications are based on a maximum windspeed of 20 knots, with a safety factor of 1.5. Uplift forces were determined in accordance with AS 1170.2. This requirement should be clearly displayed on each marquee.
- Magryn and Associates accepts no responsibility for the marquees being used in wind speeds higher than 20 knots.
- Additional weight requirements are in addition to the self-weight of the marquee frame and canopy.
- Additional weights specified in tables shall be installed fully over the proprietary base system. The weights shall be securely fastened to the frame, to ensure that the weights cannot be moved.
- The above requirements do not allow for any vandalism loads exerted on the marquee frames.
- The marquees shall be located on flat ground, with firm soil or pavement.

RESULTS

Shadestar "Classic" 32 Marquee size	No of posts	Additional weight on each post (Kg)
1.8m x 1.8m	4	40
3.0m x 3.0m	4	60
3.0m x 4.5m	4	95
3.0m x 6.0m	6	85

Shadestar "Deluxe" 40 Marquee size	No of posts	Additional weight on each post (Kg)
3.0m x 3.0m	4	60
3.0m x 6.0m	6	80
4.0m x 8.0m	6	130

For Magryn & Associates Pty. Ltd.



A. Subedi
M. Eng. (Str.)

Attachments:

- SC22123



STRUCTURAL CALCULATIONS

FOR

BASE WEIGHT SPECIFICATION

FOR

GENERAL USE

Project No. 22123
APRIL 2022



All of the colours have a
UPF 50+ Protection rating

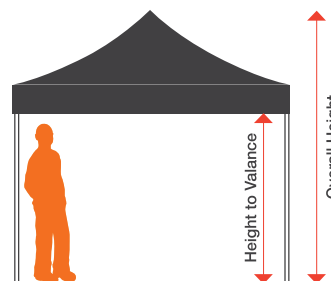


600d Polyester with a waterproof
polyurethane backing

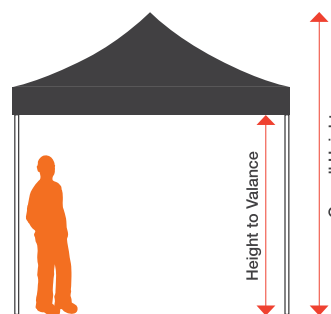


UV Stabilised-colours
stay brighter longer

ShadStar 32					ShadStar 40		
Specifications	1.8m	3m	4.5m	6m	3m	6m	8m
Frame Specs							
Outer Leg Size	32x32				40x40		
Inner Leg Size	28x28				35x35		
Reinforced Truss	25x12				30x15		
Marquee Footprint (m)							
Width	1.8	3.0	4.5	6.0	3.0	6.0	8.0
Depth	1.8	3.0	3.0	3.0	3.0	3.0	4.0
Coverage (m²)	3.24	9.0	13.5	18	9.0	18.0	32
People Standing	2	16	24	32	16	32	57
Overall Height Peak (m²)							
Max Extension	3.06	3.49	3.49	3.49	3.49	3.49	4.27
Min Extension	2.67	3.13	3.13	3.13	3.19	3.19	3.84
Canopy Measurements							
Height of Canopy	0.74	1.06	1.06	1.06	1.06	1.06	1.43
Valance Width	0.34	0.355	0.355	0.355	0.355	0.355	0.47
Head Height to Valance (m)							
Max Extension	1.88	2.07	2.07	2.07	2.09	2.09	2.28
Min Extension	1.58	1.72	1.72	1.72	1.79	1.79	1.85
Frame Packed Size (m)							
Height	1.55	1.61	1.6	1.61	1.59	1.59	2.06
Width	0.24	0.24	1.61	0.24	0.27	0.27	0.29
Depth	0.24	0.24	0.33	0.42	0.27	0.48	0.49
Packed Carry Bag (kg)							
Frame	11.3	19.0	24.0	33	26.5	46.50	61
Canopy	2.3	4.4	6.2	7.8	4.4	7.8	13
Carry Bag	1.7	1.7	2.1	2.3	1.7	2.3	5
Total of Kit	15.3	25.1	32.3	43.1	32.6	56.6	79



At minimum extension

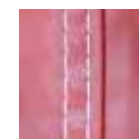


At maximum extension

ShadeStar Marquee Canopies are made from the best possible materials and are designed in a way to make them very easy to set up and take down.

Special Features

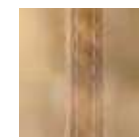
that EXTEND the LIFE of your canopy



Double Stitched seams



Peak pole protector, with elastic or cord locators, to keep the peak poles in the correct position and to reduce wear through



Hot taped seams to maximise water proofing



Double lined corners to reduce wear and tear, shower/rain proof



Easy clip strap to secure canopy against the wind



Easy hook & loop attachment pads for easy fitting and removal of the canopy to the frame

STRUCTURAL CALCULATIONS - 22123

	knots	km/hr	m/s
Wind Speed	20	37.04	10.28

Shadestar "Classic" 32

Size:

Width	1.8 m
Depth	1.8 m
Height of Canopy	0.74 m
Valance width	0.34 m
Overall Height (Max Extn)	3.06 m
Area	3.24 sq.m.

	degrees	radian
Conversion	35	0.605

Slope (degree)	55		
	Empty under		Blocked Under
Cp,w	-0.30	1.47	0.85
Cp,l	-1.04	0.00	-1.97

Cross Wind	Empty under		Blocked Under	
Cp,w	-0.3	0.4	-1	0.4
Cp,l	-0.4	0	-0.8	0.4

For uplift, critical case is with uplift on windward and leeward sides (blocked under case)

	Cp,e	P (kPa) (20knots)		FOS	Vertical Component (kPa)
Cp,w	-0.30	-0.019	-0.019	1.5	-0.016
Cp, l	-1.97	-0.125	-0.125	1.5	-0.107
Crosswind	-1	-0.063	-0.063	1.5	-0.054

For racking, critical wind case is with branding on at least one side

	Cp,e	P (kPa) (20knots)		FOS	Horizontal Component (Kpa)
Cp,w	1.47	0.094	0.094	1.5	0.115
Cp,l	-1.04	-0.066	-0.066	1.5	-0.081
Cpe, wall	1.29	0.082	0.082	1.5	0.101

Uplift		F (kN)
A_w (sqm)	0.81	-0.013
A_l (sqm)	0.81	-0.087
A_cw (sqm)	1.62	-0.088
Total Uplift Force (kN)		-0.187

Racking		F (kN)
A_w (sqm)	0.81	0.093
A_l (sqm)	0.81	-0.066
A_valance (Branding)	2.754	0.278
Total racking force (kN)		0.438
Moment due to Racking (kNm)		1.339
Uplift on 2 posts due to moment (KN)		0.744
Total Uplift on one post (KN)		0.419
Uplift (Kg)		42.70

Resistance to Uplift	Total	Single Post
Frame Weight (kg)	11.3	2.825
Canopy fabric weight (kg)	2.3	0.575
Base weight	0	0
Total Weight (x 0.9 S.F)		3.06
Resistance required		42.70
Additional weight needed (kg)		40 kg on each of the 4 posts

Shadestar "Classic" 32

Size:

Width	3	m
Depth	3	m
Height of Canopy	1.06	m
Valance width	0.355	m
Overall Height (Max Extn)	3.49	m
Area	9	sq.m.

	Conversion
degrees	radian
45	0.786

Slope (degree)	45		
	Empty under		Blocked Under
Cp,w	-0.30	1.20	0.30
Cp,l	-0.90	0.00	-1.70

Cross Wind	Empty under		Blocked Under	
Cp,w	-0.3	0.4	-1	0.4
Cp,l	-0.4	0	-0.8	0.4

For uplift, critical case is with uplift on windward and leeward sides (blocked under case)

	Cp,e	P (kPa) (20knots)		FOS	Vertical Component (kPa)
Cp,w	-0.30	-0.019	-0.019	1.5	-0.016
Cp, l	-1.70	-0.108	-0.108	1.5	-0.092
Crosswind	-1	-0.063	-0.063	1.5	-0.054

For racking, critical wind case is with branding on at least one side

	Cp,e	P (kPa) (20knots)		FOS	Horizontal Component (Kpa)
Cp,w	1.20	0.076	0.076	1.5	0.094
Cp,l	-0.90	-0.057	-0.057	1.5	-0.070
Cpe, wall	1.28	0.081	0.081	1.5	0.100

Uplift		F (kN)
A_w (sqm)	2.25	-0.037
A_l (sqm)	2.25	-0.207
A_cw (sqm)	4.5	-0.244
Total Uplift Force (kN)		-0.487

Racking		F (kN)
A_w (sqm)	2.25	0.211
A_l (sqm)	2.25	-0.158
A_valance	5.235	0.523
Total racking force (kN)		0.892
Moment due to Racking (kNm)		3.113
Uplift on 2 posts due to moment (kN)		1.038
Total Uplift on one post (kN)		0.641
Uplift (Kg)		65.29

Resistance to Uplift	Total	Single Post
Frame Weight (kg)	19	4.75
Canopy fabric weight (kg)	4.4	1.1
Base weight	0	0
Total Weight (x 0.9 S.F)		5.265
Resistance required		65.29
Additional weight needed (kg)		60 kg on each of the 4 posts

Shadestar "Classic" 32

Size:

Width	3 m
Depth	4.5 m
Height of Canopy	1.06 m
Valance width	0.355 m
Overall Height (Max Extn)	3.49 m
Area	13.5 sq.m.

	Conversion
degrees	radian
45	0.786

Slope (degree)	45		
	Empty under		Blocked Under
Cp,w	-0.30	1.20	0.30
Cp,l	-0.90	0.00	-1.70

Cross Wind	Empty under		Blocked Under	
Cp,w	-0.3	0.4	-1	0.4
Cp,l	-0.4	0	-0.8	0.4

For uplift, critical case is with uplift on windward and leeward sides (blocked under case)

	Cp,e	P (kPa) (20knots)		FOS	Vertical Component (kPa)
Cp,w	-0.30	-0.019	-0.019	1.5	-0.016
Cp, l	-1.70	-0.108	-0.108	1.5	-0.092
Crosswind	-1	-0.063	-0.063	1.5	-0.054

For racking, critical wind case is with branding on at least one side

	Cp,e	P (kPa) (20knots)		FOS	Horizontal Component (Kpa)
Cp,w	1.20	0.076	0.076	1.5	0.094
Cp,l	-0.90	-0.057	-0.057	1.5	-0.070
Cpe, wall	1.28	0.081	0.081	1.5	0.100

Uplift		F (kN)
A_w (sqm)	3.375	-0.055
A_l (sqm)	3.375	-0.310
A_cw (sqm)	6.75	-0.365
Total Uplift Force (kN)		-0.731

Racking		F (kN)
A_w (sqm)	3.375	0.316
A_l (sqm)	3.375	-0.237
A_valance	7.8525	0.784
Total racking force (kN)		1.338
Moment due to Racking (kNm)		4.669
Uplift on 2 posts due to moment (KN)		1.556
Total Uplift on one post (KN)		0.961
Uplift (Kg)		97.94

Resistance to Uplift	Total	Single Post
Frame Weight (kg)	24	6
Canopy fabric weight (kg)	6.2	1.55
Base weight	0	0
Total Weight (x 0.9 S.F)	6.795	
Resistance required	97.94	
Additional weight needed (kg)	91	kg on each of the 4 posts

Shadestar "Classic" 32

Size:

Width	3 m	(with 6 posts)
Depth	6 m	
Height of Canopy	1.06 m	
Valance width	0.355 m	
Overall Height (Max Extn)	3.49 m	
Area	18 sq.m.	

	Conversion
degrees	radian
45	0.786

Slope (degree)	45		
	Empty under	Blocked Under	
Cp,w	-0.30	1.20	0.30
Cp,l	-0.90	0.00	-1.70

Cross Wind	Empty under	Blocked Under		
Cp,w	-0.3	0.4	-1	0.4
Cp,l	-0.4	0	-0.8	0.4

For uplift, critical case is with uplift on windward and leeward sides (blocked under case)

	Cp,e	P (kPa) (20knots)		FOS	Vertical Component (kPa)
Cp,w	-0.30	-0.019	-0.019	1.5	-0.016
Cp, l	-1.70	-0.108	-0.108	1.5	-0.092
Crosswind	-1	-0.063	-0.063	1.5	-0.054

For racking, critical wind case is with branding on at least one side

	Cp,e	P (kPa) (20knots)		FOS	Horizontal Component (Kpa)
Cp,w	1.20	0.076	0.076	1.5	0.094
Cp,l	-0.90	-0.057	-0.057	1.5	-0.070
Cpe, wall	1.28	0.081	0.081	1.5	0.100

Uplift		F (kN)
A_w (sqm)	4.5	-0.073
A_l (sqm)	4.5	-0.414
A_cw (sqm)	9	-0.487
Total Uplift Force (kN)		-0.974

Racking		F (kN)
A_w (sqm)	4.5	0.422
A_l (sqm)	4.5	-0.317
A_valance	10.47	1.045
Total racking force (kN)		1.784
Moment due to Racking (kNm)		6.225
Uplift on 3 posts due to moment (kN)		2.075
Total Uplift on one post (kN)		0.854
Uplift (Kg)		87.06

Resistance to Uplift	Total	Single Post
Frame Weight (kg)	33	5.5
Canopy fabric weight (kg)	7.8	1.30
Base weight	0	0
Total Weight (x 0.9 S.F)		6.12
Resistance required		87.06
Additional weight needed		81 kg on each of the 6 posts

Shadestar "Deluxe" 40

Size:

Width	3 m
Depth	3 m
Height of Canopy	1.06 m
Valance width	0.355 m
Overall Height (Max Extn)	3.49 m
Area	9 sq.m.

	Conversion
degrees	radian
45	0.786

Slope (degree)	45		
	Empty under		Blocked Under
Cp,w	-0.30	1.20	0.30
Cp,l	-0.90	0.00	-1.70

Cross Wind	Empty under		Blocked Under	
Cp,w	-0.3	0.4	-1	0.4
Cp,l	-0.4	0	-0.8	0.4

For uplift, critical case is with uplift on windward and leeward sides (blocked under case)

	Cp,e	P (kPa) (20knots)		FOS	Vertical Component (kPa)
Cp,w	-0.30	-0.019	-0.019	1.5	-0.016
Cp, l	-1.70	-0.108	-0.108	1.5	-0.092
Crosswind	-1	-0.063	-0.063	1.5	-0.054

For racking, critical wind case is with branding on at least one side

	Cp,e	P (kPa) (20knots)		FOS	Horizontal Component (Kpa)
Cp,w	1.20	0.076	0.076	1.5	0.094
Cp,l	-0.90	-0.057	-0.057	1.5	-0.070
Cpe, wall	1.28	0.081	0.081	1.5	0.100

Uplift		F (kN)
A_w (sqm)	2.25	-0.037
A_l (sqm)	2.25	-0.207
A_cw (sqm)	4.5	-0.244
Total Uplift Force (kN)		-0.487

Racking		F (kN)
A_w (sqm)	2.25	0.211
A_l (sqm)	2.25	-0.158
A_valance	5.235	0.523
Total racking force (kN)		0.892
Moment due to Racking (kNm)		3.113
Uplift on 2 posts due to moment (KN)		1.038
Total Uplift on one post (KN)		0.641
Uplift (Kg)		65.29

Resistance to Uplift	Total	Single Post
Frame Weight (kg)	26.5	6.625
Canopy fabric weight (kg)	4.4	1.1
Base weight	0	0
Total Weight (x 0.9 S.F)		6.9525
Resistance required		65.29
Additional weight needed (kg)		58 kg on each of the 4 posts

Shadestar "Deluxe" 40

Size:

Width	3 m	(with 6 posts)
Depth	6 m	
Height of Canopy	1.06 m	
Valance width	0.355 m	
Overall Height (Max Extn)	3.49 m	
Area	18 sq.m.	

	Conversion
degrees	radian
45	0.786

Slope (degree)	45		
	Empty under		Blocked Under
Cp,w	-0.30	1.20	0.30
Cp,l	-0.90	0.00	-1.70

Cross Wind	Empty under		Blocked Under	
Cp,w	-0.3	0.4	-1	0.4
Cp,l	-0.4	0	-0.8	0.4

For uplift, critical case is with uplift on windward and leeward sides (blocked under case)

	Cp,e	P (kPa) (20knots)		FOS	Vertical Component (kPa)
Cp,w	-0.30	-0.019	-0.019	1.5	-0.016
Cp, l	-1.70	-0.108	-0.108	1.5	-0.092
Crosswind	-1	-0.063	-0.063	1.5	-0.054

For racking, critical wind case is with branding on at least one side

	Cp,e	P (kPa) (20knots)		FOS	Horizontal Component (Kpa)
Cp,w	1.20	0.076	0.076	1.5	0.094
Cp,l	-0.90	-0.057	-0.057	1.5	-0.070
Cpe, wall	1.28	0.081	0.081	1.5	0.100

Uplift		F (kN)
A_w (sqm)	4.5	-0.073
A_l (sqm)	4.5	-0.414
A_cw (sqm)	9	-0.487
Total Uplift Force (kN)		-0.974

Racking		F (kN)
A_w (sqm)	4.5	0.422
A_l (sqm)	4.5	-0.317
A_valance	10.47	1.045
Total racking force (kN)		1.784
Moment due to Racking (kNm)		6.225
Uplift on 3 posts due to moment (KN)		2.075
Total Uplift on one post (KN)		0.854
Uplift (Kg)		87.06

Resistance to Uplift	Total	Single Post
Frame Weight (kg)	46.5	7.75
Canopy fabric weight (kg)	7.8	1.3
Base weight	0	0
Total Weight (x 0.9 S.F)	8.145	
Resistance required	87.06	
Additional weight needed	79	kg on each of the 6 posts

Shadestar "Deluxe" 40

Size:

Width	4	m	(with 6 posts)
Depth	8	m	
Height of Canopy	1.43	m	
Valance width	0.47	m	
Overall Height (Max Extn)	4.27	m	
Area	32	sq.m.	

	Conversion
degrees	radian
44	0.774

Slope (degree)	46		
	Empty under		Blocked Under
Cp,w	-0.30	1.22	0.33
Cp,l	-0.91	0.00	-1.72

Cross Wind	Empty under		Blocked Under	
Cp,w	-0.3	0.4	-1	0.4
Cp,l	-0.4	0	-0.8	0.4

For uplift, critical case is with uplift on windward and leeward sides (blocked under case)

	Cp,e	P (kPa) (20 knots)		FOS	Vertical Component (kPa)
Cp,w	-0.30	-0.019	-0.019	1.5	-0.016
Cp, l	-1.72	-0.109	-0.109	1.5	-0.093
Crosswind	-1	-0.063	-0.063	1.5	-0.054

For racking, critical wind case is with branding on at least one side

	Cp,e	P (kPa) (20 knots)		FOS	Horizontal Component (Kpa)
Cp,w	1.22	0.077	0.077	1.5	0.095
Cp,l	-0.91	-0.058	-0.058	1.5	-0.071
Cpe, wall	1.27	0.081	0.081	1.5	0.100

Uplift		F (kN)
A_w (sqm)	8	-0.130
A_l (sqm)	8	-0.744
A_cw (sqm)	16	-0.866
Total Uplift Force (kN)		-1.740

Racking		F (kN)
A_w (sqm)	8	0.761
A_l (sqm)	8	-0.568
A_valance	17.08	1.700
Total racking force (kN)		3.030
Moment due to Racking (kNm)		12.938
Uplift on 3 posts due to moment (KN)		3.235
Total Uplift on one post (KN)		1.368
Uplift (Kg)		139.46

Resistance to Uplift	Total	Single Post
Frame Weight (kg)	61	10.17
Canopy fabric weight (kg)	13	2.17
Base weight	0	0
Total Weight (x 0.9 S.F)		11.1
Resistance required		139.46
Additional weight needed		128 kg on each of the 6 posts