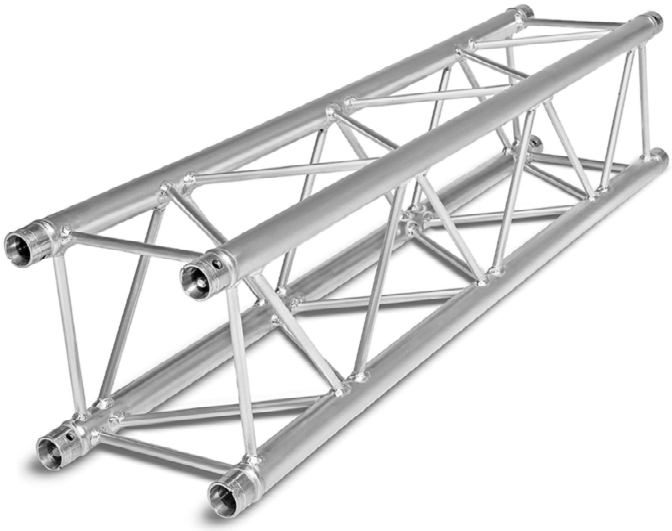
PROLYTE

E20 Truss

User manual

Part 2: Product-specific instructions



Original instructions

DN00165 Issue 1
July 2023

Area Four Industries

Manufacturer:

Area Four Industries s.r.o.

Spindlerova 286

413 01 Roudnice nad Labem

Czech Republic

T +420 416 810 800

sales@prolyte.com

If you have a warranty claim, malfunction or spare part inquiry, contact your point of sale or the manufacturer.

If you have comments or improvement ideas for this document, please contact us by using the e-mail address found on the back cover of the document. All comments and ideas will be carefully considered in the future development of the product or this document.

Contents

Change history

Issue	Date	Changes
1	July 2023	First issue.

1 Introduction

This manual is intended for truss owners, providers and skilled riggers and any person who has been trained in working safely with trusses.

This manual is Part 2 of the User Manual. The User Manual consists of the following parts:

- Part 1: General instructions
- Part 2: Product-specific instructions

This manual must be read in conjunction with *Part 1: General instructions* of the User Manual.

If there are discrepancies between *Part 1* and *Part 2*, the information given in *Part 2* is the information that applies to the product and overrides the information given in *Part 1*.

This manual assumes that you have been trained or work under the control of a competent or qualified person who has been trained in safety and assembly.

1.1 About this product

PROLYTE trusses are structural elements designed to be repeatedly assembled and disassembled to carry loads in temporary or permanent installations. Depending on the application, PROLYTE trusses can be referred to as lifting accessories or construction products. For information on the related standards, see Chapter 1.5.

The E20 series can be used for indoor and outdoor structures.

1.2 Related information

For more information on the product, see www.prolyte.com/products/aluminium-truss.

1.3 About this manual

Before working with the product, read this manual carefully and pay attention to the information provided. Use this manual to familiarize yourself with the product, its proper use and safety regulations.

1.3.1 Safety conventions

DANGER

Indicates a hazardous situation, which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations.

WARNING

Indicates a hazardous situation, which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a hazardous situation, which, if not avoided, could result in minor or moderate injury.

NOTICE

Indicates information considered important but not hazard-related.

1.4 Terminology

See *PROLYTE Trusses User Manual, Part 1: General instructions*.

Trusses and truss modules are hereinafter referred to by the term “truss”.

1.5 Standards

See *Prolyte Trusses User Manual, Part 1: General instructions*.

2 Safety

Before working with the product, see the section *Safety* in *PROLYTE Trusses User Manual, Part 1: General instructions*. Read the Safety information carefully and pay attention to the information provided.

In addition to the Safety information provided in Part 1, make sure you read the Safety information provided in this product-specific user manual.

NOTICE

Read these safety texts carefully before working with the product.

NOTICE

Make sure manuals are available at all times for all users and employees.

3 Limitations of use

Make sure you read the information provided in section *Limitations of use* in *PROLYTE Trusses User Manual, Part 1: General instructions*.

PROLYTE trusses described in this manual are not specifically designed for lifting people. Adequate load reduction and safety precautions, according to local legislation, must be considered when people are lifted.

3.1 Allowable loading

For load capacity information, see Chapter 0.

3.2 Structural data

All our trusses are calculated according to the Eurocode 9 (DIN-EN 1999) standard. Eurocodes are standards based on Load and Resistance Factor Design (LRFD).

⚠ WARNING

The structural data provided before January 2016 was based on the German DIN 4113 standard. As this standard had a different safety principle, the structural values cannot be compared.

NOTICE

TÜV certificates issued after February 2015 are all based on Eurocode 9.

Code	Type	Material	Geometry								
			Dimensions centre to centre		Main chord [mm]	diagonals [mm]	Cross-section complete truss				Average dead weight
			Height	Width			A	I_y	I_z	I_T	g
			[mm]	[mm]			[cm^2]	[cm^4]	[cm^4]	[cm^4]	[kg/m]
E20D	Triangular	6060 T66	165	190	32x1.5	10x1	4.31	224.67	224.79	30	1.6
E20V	Square	6060 T66	190	190	32x1.5	10x1	5.75	446.73	446.73	60	2.1

Table 1: Geometry

Code	Design values of resistances				
	Main chord	Complete truss			
	$N_{,rd}$	$M_{y,rd}$	$M_{z,rd}$	$V_{z,rd}$	$Vy_{,rd}$
	[kN]	[kNm]	[kNm]	[kN]	[kN]
E20D	10.12	1.66	1.92	2.44	1.41
E20V	10.12	3.85	3.85	2.82	2.82

Table 2: Design values of resistances

Table 3: Geometry

4 Transport, handling and storage

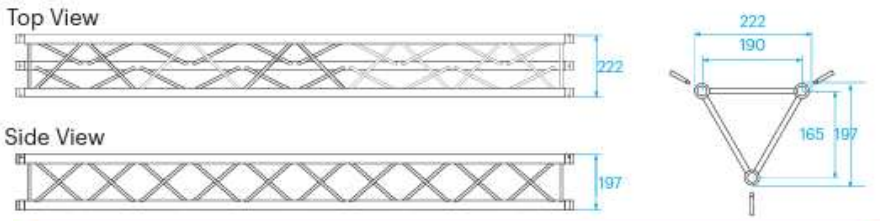
See *PROLYTE Trusses User Manual, Part 1: General instructions*.

5 Identification

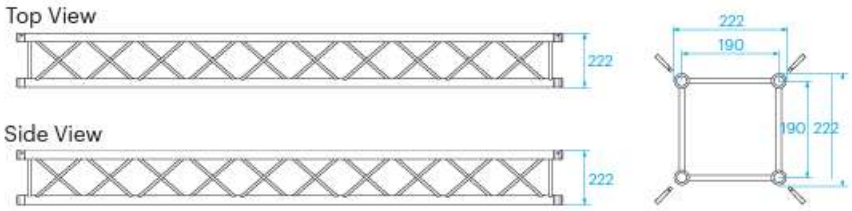
See *PROLYTE Trusses User Manual, Part 1: General instructions*.

6 Technical specifications

E20D



E20V



Technical Specifications - E20 Series	
Types	Triangular (D), Square (V)
Alloy	EN AW 6060 T66
Main Chords	32 x 1,5 mm
Diagonal Members	10 x 1,0 mm
Coupling System	CCS4

E20 Series - Standard available Lengths and Codes

Metres	Feet	Code*
0.25/1.00 m in 5 mm steps	0.82'/3.28', in 0.2' steps	
0,25	0.82	E20•-L025
0,50	1.64	E20•-L050
0,58	1.90	E20•-L058
1,00	3.28	E20•-L100
1,50	4.92	E20•-L150
2,00	6.56	E20•-L200
2,50	8.20	E20•-L250
3,00	9.84	E20•-L300
4,00	13.12	E20•-L400

*on • indicate D for Triangular or V for Square truss

7 Load capacity

In addition to the information and instructions provided in *Prolyte Trusses User Manual, Part 1: General instructions*, the truss loads shall never exceed the values stated in the load tables below.

E20D - Allowable Loading

SPAN		Uniformly Distributed Load		DEFLECTION		MAXIMUM ALLOWABLE POINT LOADS										SPAN
		UDL				Centre Point Load CPL		DEFLECTION		Single Load Third Points Load per Point TPL		Single Load Fourth Points Load per Point QPL		Single Load Fifth Points Load per Point FPL		
m	ft	kg/m	lbs/ft	mm	inch	kgs	lbs	mm	inch	kgs	lbs	kgs	lbs	kgs	lbs	total weight
3	9,8	97,2	65,4	10	0,4	125,9	277,8	8	0,3	88,4	195,1	67,6	149,1	53,7	118,4	4,8
4	13,1	54,0	36,4	18	0,7	96,7	213,5	14	0,6	69,0	152,4	51,0	112,7	41,0	90,6	6,4
5	16,4	34,1	22,9	28	1,1	78,0	172,1	22	0,9	56,3	124,2	40,7	89,8	33,0	72,8	8,0
6	19,7	23,2	15,6	40	1,6	64,8	142,9	32	1,3	47,1	104,1	33,6	74,1	27,3	60,3	9,6
7	23,0	16,7	11,2	54	2,1	54,9	121,1	43	1,7	40,3	88,9	28,3	62,4	23,1	51,1	11,2
8	26,2	12,4	8,4	71	2,8	47,2	104,1	56	2,2	34,8	76,9	24,2	53,4	19,9	43,9	12,8
9	29,5	9,5	6,4	89	3,5	40,9	90,3	71	2,8	30,4	67,2	20,9	46,2	17,3	38,1	14,4
10	32,8	7,4	5,0	110	4,3	35,7	78,9	88	3,5	26,8	59,1	18,2	40,2	15,1	33,3	16,0
11	36,1	5,9	4,0	133	5,3	31,3	69,1	107	4,2	23,6	52,1	15,9	35,2	13,2	29,2	17,6
12	39,4	4,7	3,2	159	6,2	27,5	60,7	127	5,0	20,9	46,1	14,0	30,8	11,6	25,6	19,0
13	42,6	3,8	2,6	186	7,3	24,1	53,3	149	5,9	18,4	40,7	12,2	27,0	10,2	22,5	20,6
14	45,9	3,1	2,1	216	8,5	21,1	46,6	173	6,8	16,2	35,8	10,7	23,6	8,9	19,7	22,2
15	49,2	2,5	1,7	248	9,8	18,4	40,6	199	7,8	14,1	31,1	9,3	20,5	7,8	17,2	23,8
16	52,5	2,0	1,4	282	11,1	15,9	35,2	226	8,9	12,2	26,9	8,0	17,7	6,8	14,9	25,4
17	55,8	1,6	1,1	319	12,5	13,7	30,2	255	10,0	10,4	23,0	6,9	15,2	5,8	12,8	27,0
18	59,0	1,3	0,9	357	14,1	11,6	25,5	286	11,3	8,8	19,4	5,8	12,8	4,9	10,8	28,6

1 inch = 25,4 mm | 1m = 3.28 ft | 1 lbs = 0,453 kg

E20V - Allowable Loading

SPAN		Uniformly Distributed Load		DEFLECTION		MAXIMUM ALLOWABLE POINT LOADS										SPAN
		UDL				Centre Point Load CPL		DEFLECTION		Single Load Third Points Load per Point TPL		Single Load Fourth Points Load per Point QPL		Single Load Fifth Points Load per Point FPL		
m	ft	kg/m	lbs/ft	mm	inch	kgs	lbs	mm	inch	kgs	lbs	kgs	lbs	kgs	lbs	total weight
3	9,8	123,2	82,9	8	0,3	265,7	586,3	6	0,2	184,8	407,9	123,2	272,0	92,4	204,0	6,3
4	13,1	91,9	61,9	14	0,5	209,5	462,3	11	0,4	145,7	321,6	115,4	254,6	91,9	202,9	8,4
5	16,4	73,2	49,2	21	0,8	172,3	380,2	17	0,7	120,8	266,6	92,6	204,4	73,5	162,1	10,5
6	19,7	55,1	37,1	31	1,2	145,6	321,4	25	1,0	103,3	227,9	77,4	170,8	61,9	136,6	12,6
7	23,0	40,0	26,9	42	1,6	125,6	277,1	33	1,3	89,8	198,2	66,2	146,0	53,2	117,5	14,7
8	26,2	30,2	20,3	55	2,2	109,8	242,4	44	1,7	79,1	174,7	57,5	126,9	46,5	102,6	16,8
9	29,5	23,4	15,8	69	2,7	97,1	214,3	55	2,2	70,4	155,4	50,5	111,5	41,0	90,6	18,9
10	32,8	18,6	12,5	85	3,4	86,5	191,0	68	2,7	63,2	139,4	44,8	99,0	36,5	80,6	21
11	36,1	15,1	10,1	103	4,1	77,6	171,2	83	3,3	56,9	125,7	40,1	88,4	32,7	72,3	23,1
12	39,4	12,4	8,3	123	4,8	69,9	154,2	98	3,9	51,6	113,8	36,0	79,4	29,5	65,1	25,2
13	42,6	10,2	6,9	144	5,7	63,2	139,4	115	4,5	46,9	103,4	32,4	71,5	26,6	58,8	27,3
14	45,9	8,6	5,8	167	6,6	57,2	126,3	134	5,3	42,7	94,2	29,3	64,6	24,1	53,3	29,4
15	49,2	7,2	4,9	192	7,6	51,9	114,5	154	6,1	38,9	85,9	26,5	58,5	21,9	48,3	31,5
16	52,5	6,1	4,1	219	8,6	47,1	103,9	175	6,9	35,5	78,4	24,0	53,0	19,9	43,9	33,6
17	55,8	5,2	3,5	247	9,7	42,7	94,3	198	7,8	32,4	71,5	21,7	48,0	18,1	39,8	35,7
18	59,0	4,4	3,0	277	10,9	38,7	85,4	221	8,7	29,5	65,1	19,7	43,4	16,4	36,1	37,8
19	62,3	3,8	2,6	308	12,1	35,0	77,2	247	9,7	26,8	59,3	17,7	39,2	14,8	32,7	39,9
20	65,6	3,2	2,2	342	13,4	31,5	69,6	273	10,8	24,3	53,6	16,0	35,3	13,4	29,5	42

1 inch = 25,4 mm | 1m = 3.28 ft | 1 lbs = 0,453 kg

- Tüv certification only valid for loading table above.
- Loading figures are only valid for static loads.
- Loading figures are only valid for single spans with supports at both ends.
- All static systems, other than single spans, need an individual structural calculation. Please contact a structural engineer or Prolyte for assistance.
- Loading figures are calculated according to and in full compliance with European standards (Eurocode).
- The self-weight of the trusses is already taken into account.
- Loading figures are only valid for the cross sectional orientation of the truss as shown by the icon in the loading table.
- The interaction between bending moment and shear force at the connection point is already taken into account.
- Truss spans can be assembled from different truss lengths.
- Read the manual before assembling, using and loading the truss.

8 Approved accessories

For a complete overview of approved accessories, see our brochures or www.prolyte.com.

WARNING

By using excessive force when tightening accessories such as lamp hooks or cell clamps, you may cause damage to the truss chords.

CAUTION

Pay special attention when using lamp hooks or cell clamps. Their inside radius may not meet the tube they need to be attached to. This can lead to severe damage.

NOTICE

You should never allow accessories to damage other products.

9 Coatings and surface treatments

See *PROLYTE Trusses User Manual, Part 1: General instructions*.

10 Slinging methods

See *PROLYTE Trusses User Manual, Part 1: General instructions*.

11 Assembly and disassembly

See *PROLYTE Trusses User Manual, Part 1: General instructions*.

12 Maintenance

See *PROLYTE Trusses User Manual, Part 1: General instructions*.

13 Inspection

See *PROLYTE Trusses User Manual, Part 1: General instructions*.

14 Discard criteria

See *PROLYTE Trusses User Manual, Part 1: General instructions*.

15 Warranty

See *PROLYTE Trusses User Manual, Part 1: General instructions*.

16 Certificates

The TÜV certificates for this product are available at:

https://www.prolyte.com/support/certificates/certificates-download

Contact details:
PROLYTE BV.
Industriepark 9
9351PC Leek
The Netherlands
T +31 594 85 15 15
sales@prolyte.com

Area Four Industries

www.prolyte.com