

TACTICAL PARACHUTE DELIVERY SYSTEMS, Inc.

LIGHT LOAD TACTICAL (LLT) BROCHURE



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Airborne Harness/Container System

The **Light Load Tactical** is a complete assembly of military equipment manufactured to the highest standards using the best **Military Specification** materials available in today’s market. The **LLT** is manufactured in the United States in a facility that is Federal Aviation Administration (**FAA**) certified for manufacturing parachute equipment.

The **Light Load Tactical** is designed for HALO-HAHO operations and training with a single operator carrying full combat equipment and bundles without the use of a drogue pilot chute.

The **Light Load Tactical** consists of a **Main Container** with a choice of multiple main parachutes and a **Reserve Container** with a choice of multiple reserve parachutes.

The **Light Load Tactical** may be set up for **Static Line** or **Freefall**.

It is a designed to accommodate any size jumper with any aircraft commonly used in military operations. There are seven (7) points of adjustment to the harness and three (3) easy dress-up points for quick gear-up and gear-off.

Main Container Capabilities and Features:

Physical Specifications:

Materials:

Container-	1000 Denier Nylon Cordura
Deployment Bag-	500 Denier Cordura

Webbing:

Main Lift Webbing-

1 23/32” (4.3 cm.) wide Type 7 Mil-W-4088	<i>Tensile Strength</i> 6000 lbs. / 2721 kg.
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Main Risers-

1 23/32” (4.3 cm.) wide Type 8 Mil-W-4088	<i>Tensile Strength</i> 4000 lbs. / 1814 kg.
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Reserve Risers-

1 23/32” (4.3 cm.) wide Type 13 Mil-W-4088	<i>Tensile Strength</i> 7000 lbs. / 3175 kg.
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Leg Straps-

1 23/32” (4.3 cm.) wide Type 7 Mil-W-4088	<i>Tensile Strength</i> 6000 lbs. / 2721 kg.
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Chest Strap-

1 23/32” (4.3 cm.) wide Type 8 Mil-W-4088	<i>Tensile Strength</i> 4000 lbs. / 1814 kg.
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Laterals-

1 23/32” (4.3 cm.) wide Type 8 Mil-W-4088	<i>Tensile Strength</i> 4000 lbs. / 1814 kg.
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Materials cond. :

Hardware:

Main Canopy Release System-

3-Ring Release System

Tensile Strength **5000 lbs. / 2270 kg.**

Main Lift Webbing Adjusters-

Quick Fit Ring w/Friction Lock #555-2

Tensile Strength **2500 lbs. / 1130 kg.**

Lateral Adjusters-

Locking Adapter PS 70124-1

Tensile Strength **2500 lbs. / 1130 kg.**

Chest Strap Hardware-

B-12 PS 22044-1 / PS 22017 Quick Ejector or
PS22040 with "V" Ring Quick Fit Bar PS 27765

Tensile Strength **2500 lbs. / 1130 kg.**

or

PS-70101 Friction Adapter

Tensile Strength **2500 lbs. / 1130 kg.**

Leg Strap Hardware-

B-12 PS 22044-1 / PS 22017 Quick Ejector or
PS22040 with "V" Ring Quick Fit Bar PS 27765

Tensile Strength **2500 lbs. / 1130 kg.**

Tensile Strength **2500 lbs. / 1130 kg.**

Top Connector Point-

"D" Ring PS 22046-1

Tensile Strength **5000 lbs. / 2270 kg.**

Lower Connector Point-

Accessory Ring

Tensile Strength **500 lbs. / 230 kg.**

Static Line Snap Hook

Grommets

Tensile Strength **1750 lbs. / 800 kg.**

#0 Stainless Steel

Size:

Container -

22" high x 15" wide x 10" deep
55.88 cm. x 38.1 cm. x 25.4 cm.

Weight:

Container -

13 lbs. (5.9 kg.)

Fabric Colors:

Black, Smoke, Desert Camouflage, Woodland Camouflage, Multi-Camouflage, Olive Drab Green and others upon request.

Harness Colors:

Black, Smoke, Silver, Olive Drab Green and others upon request.





Light Load Tactical (LLT)

Military TPDS-LLT

- Outboard Reserve Ripcord Handle
- Outboard Main Canopy Release Handle
- Outboard Main Ripcord Handle
- D-Ring Hook-up x6

The **TPDS Light Load Tactical (LLT)** is designed for HALO-HAHO operations and training with a single operator carrying full combat equipment and bundles.

The **TPDS-LLT System** accommodates TPDS Main and Reserve Canopy sizes from 220-400 sq. ft. according to the end user's tactical and training requirements.

TPDS specializes in the custom applications and requirements of the end user.

TPDS- LLT Specs:

Maximum Suspended Weight: **550 lbs.** / (249.5 kg.) depending on the canopy size.

Maximum Deployment Altitude: 35,000 ft. (10,668 m) Some restrictions apply depending on canopy size and type.

Minimum Deployment Altitude:

Main Canopy- 4500 ft. (1400 m)

Reserve Canopy- 2000 ft. (600 m)

Equipment Configuration: 6 attachment points for bundles Front, Front Lower and Back Lower.

Main Canopies: TPDS 220- 400 sq. ft.

Reserve Canopies: TPDS 220- 400 sq. ft.

Harness/Container Weight: 13 lbs. (5.9 kg.)

Reserve AAD Set-up:

Military Cypres AAD

Astra by FXC

Military Vigil

Military Argus

Installation according to AAD and/or end user's requirements.

Reserve Static Line: Standard RSL with attachment to the Left Main Riser and Reserve Cable.

Main Deployment Options:

- Throw-out Bottom of Container (BOC)
- Spring-Loaded Pilot Chute w/BOC and/or Chest Mounted Ripcord.
- Static Line Deployment with Direct Bag, Spring Loaded Pilot-chute Assist or Throw-out Pilot-chute Options.





TPDS- LLT Specs cond.:

Main AAD Options:

AR-2 or equivalent.

Main Risers:

Type 8

Main Toggles/Trim:

HAHO Toggles w/HAHO Extensions and Front Riser Trim Tabs and Front Riser Loops.

Harness:

Adjustable Main Lift Web

Adjustable Laterals.

Adjustable Leg Straps.

Adjustable Chest Strap.

Adjustable Bellyband or

Removable/Adjustable Bellyband.

Leg Hardware:

B-12 Snaps, Thread-Thru or Quick Ejector

Chest Hardware:

B-12 Snaps, Thread-Thru or Quick Ejector

Container Material:

1000 Denier Nylon

Container Colors:

Black, Silver, Dark Grey, Olive Drab Green, Desert Camouflage, Woodland Camouflage, Multi-Camouflage, others upon request.

TPDS- LLT Standard System

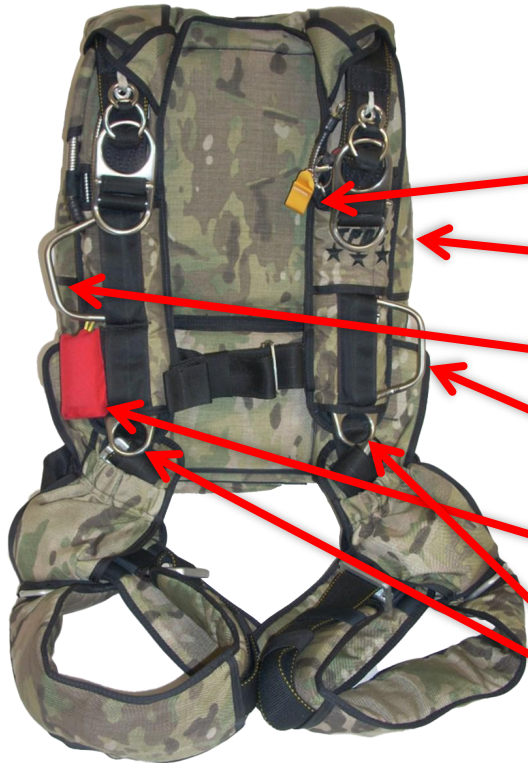
Features:

- 6 Cargo Attachment Points
- Fully Adjustable Harness
- Adjustable or Detachable Bellyband

TPDS- LLT Optional System

Features:

- Removable **HAHO** Seat Sling.
- **Main Assisted Reserve Deployment (MARD) “Reserve Boost” System**



TPDS- LLT Light Load Tactical

Reserve Static Line Release Clasp

Upper D-Ring Hook-up (x2)

Outboard Main Ripcord Handle

Outboard Reserve Ripcord Handle

Outboard Main Canopy Release Handle

Lower D-Ring Hook-ups (x2 in front, 2 on

TPDS- LLT (rear view)



AAD Clear Inspection Window

Reserve Pin Inspection Window

Static Line Stow Band Loops

Chest Main Ripcord Housing

Rear Ripcord Housing

Throw-out Pilot Chute Handle



The **TPDS-LLT** Light Load Tactical Parachute Assembly with Static-Line.
Direct Bag, Spring-loaded Assist or T/O Pilot-chute Assist



TPDS LLT MAIN DEPLOYMENT HANDLES



Spring-loaded Pilot-chute with Plastic BOC Handle



TPDS LLT MAIN DEPLOYMENT HANDLES



Throw-out Pilot-chute with Hacky Handle on BOC



Spring-loaded Pilot-chute with Stainless Steel "D" Handle.



AFF Jumpmaster Handle for Throw-out Pilot-chute



AFF Jumpmaster Handle for Spring-loaded Pilot-chute



CANOPY FABRIC SPECIFICATIONS

<u>TEST NAME</u>			<u>TEST METHODS</u>	
			<u>COMMERCIAL</u>	<u>FEDERAL STANDARD 191</u>
MATERIAL	■ 30 Denier, High Tenacity, Bright Nylon, Heat and Light Inhibitors	■ AATCC 20		Method 1530
TWIST	■ Producers Warp and Fill	■ ASTM-D-1423		Method 4050
MELTING POINT	■ 489°F + or - 10°F	■ AATCC-20		Method 1534
WEAVE PATTERN	■ Rip Stop 7.5 Minimum Repeats Per Inch	■ Visual		(Visual)
WEIGHT (max.)	■ 1.17 OSY	■ ASTM-2376 Opt. C		Method 5041
THICKNESS(max.)	■ .0030 Inches	■ ASTM-D-1777		Method 5030
STRENGTH (min.)	■ 47 x 47 Pounds	■ ASTM-D-50351 R		Method 5104
1"strip				
ELONGATON (min.)	■ 25%	■ ASTM-D-50351 R		Method 5104
TEAR STRENGTH (min.)	■ 5 x 5 Pounds	■ ASTM		Method D 2261 or 2262 (1983)
AIR PERMEABILITY	■ .5-3.0 CFM	■ ASTM-D737		Method 5450
CONSTRUCTION (min.)	■ 130 x 132	■ ASTM-D-3775		Method 5050
pH	■ 5.5-9.0	■ AATCC-81		Method 2811
COLOR FASTNESS	■ Good (Regular colors)	■ AATCC-61		Method 5614 - Laundering
		■ AATCC-107		Method 5630 - Cold Water
		■ AATCC-16 A		Method 5660 - Light (20 hrs.)
		■ AATCC-8		Method 5651 - Crocking (3.4 or better)
WIDTH (min.)	■ 48 Inches or 65 Inches	■ FED STD 191A		Method 5020
HEAT/LIGHT RESISTANCE	■ Max. 25% Change	■ MIL C 44378		Para. 4.5.3.1 Light
				Para. 4.5.3.2. Heat
BIAS/BOW (max.)	■ 2 Inches on 48": ■ 2 ^{1/2} Inches on 65"	■ ASTM-D-3882		Method 5060

Specification	Yarn	Construction	Weave	Widths**	Weight	Thickness	Air Perm	Tear W/F	Break W/F	pH
PIA C 44378	<i>denier</i>	<i>count/inch</i>	<i>pattern</i>	<i>inches</i>	<i>oz/sq yd</i>	<i>inches</i>	<i>Cfm</i>	<i>lbs</i>	<i>lbs</i>	
Type 1	30d	114 X 132	Ripstop	48"/65"	1.17	0.003	0-5	5/5	45/45	5.5-9.0
Type 2	30d	126 X 132	Ripstop	36"/48"/72"	1.11	0.003	30-50	5/5	42/42	5.5-9.0
Type 3	30d	114 X 132	Ripstop	48"/65"	1.17	0.003	30-50	5/5	45/45	5.5-9.0
Type 4	30d	126 X 132	Ripstop	36"/48"/65"	1.20	0.003	0.5-3.0	5/5	45/45	5.5-9.0



Light Load Tactical-Main Parachute 9 CELL-ELLIPTICAL (DS-LLT-M)



Maximum Weight:

Model	LBS.	KGS.
M-200H	240	109
M-220H	265	120
M-240H	290	132
M-260H	316	143
M-280H	342	155
M-300H	368	167
M-330H	406	184
M-360H	445	202

Main Canopy Specifications:

Canopy Class

LLT

Lines

Dacron

Fabric

Hybrid
(TOP SKIN)

Z-P

(BOTTOM SKIN)

F-111 /

PIA-C 44378

Type IV





TPDS-LLT-MAIN CANOPIES 9 CELL ELLIPTICAL								
		TACTICAL PARACHUTE DELIVERY SYSTEMS, INC.		MAIN CANOPY SPECIFICATIONS				
LINE	FABRIC	PART NUMBER	MODEL	SPAN feet	CHORD feet	ASPECT :1	LOAD lbs/ft^2	WMAX lbs/kgs
DACRON	HYBRID	TPDS-LLT-M-200	M-200H	28.46	9.68	2.94	1.19	240/109
		TPDS-LLT-M-220	M-220H	29.85	10.16	2.94	1.94	265/120
		TPDS-LLT-M-240	M-240H	31.18	10.61	2.94	1.198	290/132
		TPDS-LLT-M-260	M-260H	32.45	11.04	2.94	1.202	316/143
		TPDS-LLT-M-280	M-280H	33.67	11.45	2.94	1.206	342/155
		TPDS-LLT-M-300	M-300H	34.86	11.86	2.94	1.21	368/167
		TPDS-LLT-M-330	M-330H	36.56	12.44	2.94	1.21	406/184
		TPDS-LLT-M-360	M-360H	38.18	12.99	2.94	1.218	445/202
	ZP	TPDS-LLT-M-200	M-200Z	28.46	9.68	2.94	1.19	240/109
		TPDS-LLT-M-220	M-220Z	29.85	10.16	2.94	1.194	265/120
		TPDS-LLT-M-240	M-240Z	31.18	10.61	2.94	1.198	290/132
		TPDS-LLT-M-260	M-260Z	32.45	11.04	2.94	1.202	316/143
		TPDS-LLT-M-280	M-280Z	33.67	11.46	2.94	1.206	342/155
		TPDS-LLT-M-300	M-300Z	34.86	11.86	2.94	1.21	368/167
		TPDS-LLT-M-330	M-330Z	36.56	12.44	2.94	1.214	406/184
		TPDS-LLT-M-360	M-360Z	38.18	12.99	2.94	1.218	445/202



Light Load Tactical-Reserve Parachute 7 CELL RECTANGLE (TPDS-LLT-R7)



Maximum Weight:

Model	LBS.	KGS.
R7-220	262	119
R7-240	283	128
R7-260	304	138
R7-280	325	148
R7-300	345	156
R7-320	365	166
R7-340	384	174
R7-360	403	183
R7-380	422	191

Canopy Class
LLT

Fabric
F-111 /
PIA-C-44378
Type IV

Lines
Spectra





**TPDS-LLT-RESERVE CANOPIES
7 CELLS RECTANGLE**

		TACTICAL PARACHUTE DELIVERY SYSTEMS, INC.		RESERVE CANOPY SPECIFICATIONS				
LINE	FABRIC	PART NUMBER	MODEL	SPAN feet	CHORD feet	ASPECT :1	LOAD lbs/ft ²	WMAX lbs/kgs
Spectra	F-111	TPDS-LLT-R7-220	R7-220	23.18	9.89	2.345	1.19	262/119
		TPDS-LLT-R7-240	R7-240	24.21	10.33	2.345	1.18	283/129
		TPDS-LLT-R7-260	R7-260	25.2	10.75	2.345	1.17	304/138
		TPDS-LLT-R7-280	R7-280	26.15	11.15	2.345	1.16	325/148
		TPDS-LLT-R7-300	R7-300	27.07	11.54	2.345	1.15	345/156
		TPDS-LLT-R7-320	R7-320	27.96	11.92	2.345	1.14	365/166
		TPDS-LLT-R7-340	R7-340	28.82	12.29	2.345	1.13	384/174
		TPDS-LLT-R7-360	R7-360	29.65	12.65	2.345	1.12	403/183
		TPDS-LLT-R7-380	R7-380	30.47	12.99	2.345	1.11	422/191



Light Load Tactical-Reserve Parachute 9 CELL RECTANGLE (TPDS-LLT-R9)



Maximum Weight:

Model	LBS.	KGS.
R9-220	312	142
R9-240	340	154
R9-260	368	167
R9-280	396	180
R9-300	424	192
R9-320	451	205
R9-340	479	217
R9-360	506	230
R9-380	534	242
R9-400	561	254
R9-420	588	267

Canopy Class

LLT

Fabric

F-111 /
PIA-C 44378
Type IV

Lines

Spectra





TPDS-LLT-RESERVE CANOPIES

9 CELL RECTANGLE

		TACTICAL PARACHUTE DELIVERY SYSTEMS, INC.		RESERVE CANOPY SPECIFICATIONS				
LINE	FABRIC			SPAN	CHORD	ASPECT	LOAD	WMAX
		PART NUMBER	MODEL	feet	feet	:1	lbs./ ft^2	lbs./ kgs
SPECTRA	F-111	TPDS-LLT-R9-220	R9-220	25.69	8.56	3	1.42	312/ 142
		TPDS-LLT-R9-240	R9-240	26.83	8.94	3	1.418	340/ 154
		TPDS-LLT-R9-260	R9-260	27.93	9.31	3	1.416	368/ 167
		TPDS-LLT-R9-280	R9-280	28.98	9.66	3	1.414	396/ 180
		TPDS-LLT-R9-300	R9-300	30	10	3	1.412	424/ 192
		TPDS-LLT-R9-320	R9-320	30.98	10.33	3	1.41	451/ 205
		TPDS-LLT-R9-340	R9-340	31.94	10.65	3	1.408	479/ 217
		TPDS-LLT-R9-360	R9-360	32.86	10.95	3	1.406	506/ 230
		TPDS-LLT-R9-380	R9-380	33.76	11.25	3	1.404	534/ 242
		TPDS-LLT-R9-400	R9-400	34.64	11.55	3	1.402	561/ 254
		TPDS-LLT-R9-420	R9-420	35.5	11.83	3	1.4	588/ 267





• Max Deployment Speed	150 knots thru airspeed
• Max Deployment Altitude Static Line	18,000 ft. MSL
• Min Deployment Altitude Static Line	1500 ft. AGL
• Min Deployment Altitude Free-fall	2000 ft. AGL
• Max Deployment Speed Static Line	130 knots thru airspeed
• Min Deployment Speed Static Line	60 knots
• Max Exit Weight	202 kg./ 445 lbs. (depends on size of canopy and weight of jumper)
• Min Exit Weight	135 lbs./ 60 kg.
• HALO Altitude	30,000 ft. MSL
• HAHO Altitude	25,000 ft. MSL
• Glide Ratio	3 to 1
• Aspect Ratio	2.94:1
• Average Opening Force	4.2 G's
• Rate of Descent- Speed Full Flight	10-15 ft/sec. (depends on size of canopy and weight of jumper)
• Rate of Descent- 50% Brakes	5 ft/sec. (depends on size of canopy and weight of jumper)
• Forward Speed	40-50 mph. (depends on size of canopy and weight of jumper)
• Pack Volume	500 - 600 cu. in.





• Weight of Canopy	46 lbs./ 21 kg. and less
• Hardware	Mil. Spec Forged Cadmium Plated Steel or equivalent
• Canopy Fabric	PIA C 44378 Type-4 Ripstop 0.5-3.0 and/ or Z-P combination
• Container Fabric	1000 denier Cordura
• Webbing	Mil. Spec. W-4088 or equivalent



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