

Halton TLD

Wall Diffuser Unit



20/TLD/3500/0606/EN

- Horizontal plane jet air supply
- Directional nozzles with two-slot air path, which deflect the air streams effectively
- Installation of the diffuser on the wall in the vicinity of the ceiling
- Airflow rate measurement and adjustment functions
- Circular duct connection with gasket on the back or on the side of the plenum

- Cleaning of the terminal unit and supply ductwork enabled by the detachable diffuser section

Product models & Accessories

- Plenum with duct connection on the back
- Plenum with duct connection on the side
- Cover sleeve for exposed installations

MATERIAL AND FINISHING

PART	MATERIAL	NOTE
Diffuser section	Steel	
Nozzle	Polyacetal POM	Colour options: White RAL 9010, Grey RAL 7040 and Black
Plenum	Galvanised steel	
Attenuation material	Polyester fibre	Cutting edges protected
Cover sleeve	Galvanised steel	Painted in diffuser colour
Coupling sleeve with gasket	Galvanised steel	Gasket of rubber compound
Finishing	Epoxy painted, Standard colour RAL 9010	Only diffuser section, special colours available

QUICK SELECTION

qv	Pa	192	288	384	480	576	672	768	960	1152	1344	1536
	l/s	20	30	40	50	60	70	80	100	120	140	160
	m³/h	72	108	144	180	216	252	288	360	432	504	576
TLD/A-100(B)	LpA	<20	25	32	39							
	ΔPst	11	25	44	68							
	ΔPtot	15	33	59	93							
	dP_t	135	130	99	-							
	Ld	1,8	2,7	4,0	4,9							
	L0.2	2,5	5,0	6,6	8,4							
TLD/A-125(B)	LpA			22	28	34	39	43				
	ΔPst			20	31	44	60	79				
	ΔPtot			26	41	59	80	105				
	dP_t			120	101	73	-	-				
	Ld			2,7	3,3	4,2	5,0	5,7				
	L0.2			6,0	7,6	9,0	10,6	12,5				
TLD/A-160(B)	LpA					22	27	31	39	47		
	ΔPst					22	30	40	62	89		
	ΔPtot					28	38	49	77	111		
	dP_t					112	92	72	-	-		
	Ld					2,7	3,3	3,8	4,7	5,8		
	L0.2					7,8	10,0	11,5	14,5	17,5		
TLD/A-200(B)	LpA						20	23	29	35	40	44
	ΔPst						15	19	30	44	59	77
	ΔPtot						18	23	36	52	71	93
	dP_t						86	112	100	-	-	-
	Ld						2,2	2,5	3,3	4,0	4,7	5,5
	L0.2						7,6	9,0	11,5	14,0	16,0	18,5

LpA values presented with room attenuation 4 dB (red 10m² - sab). When using room attenuation 8 dB (red 25m² - sab): LpA - 4dB.

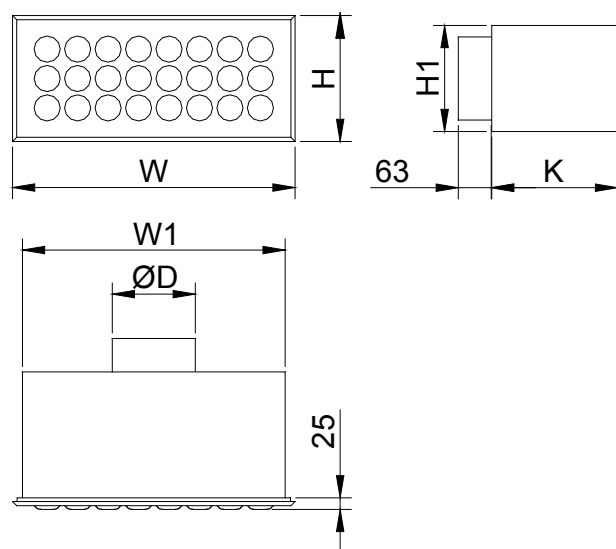
Pa Supply air cooling capacity, W
 LpA A-weighted sound pressure level, reduced by total equivalent absorption surface of 10m², dB(A) red 10m² - sab
 ΔPst Static pressure drop, Pa

ΔPtot Total pressure drop, Pa
 Ld Distance from the supply unit, at which air jet detaches from ceiling, m
 dP_t Maximum ΔPtot (Pa), when a-weighted sound pressure level (Lp) is 35 dB(A)
 L0.2 Isothermal throw length, m when residual velocity of supply air jet 0,2 m/s
 Room temperature (Tr) = 24 °C
 Supply air temperature (Ta) = 16 °C

DIMENSIONS

TLD/B, mm

NS	W	W1	H	H1	K	ØD
100	441	403	191	153	204	99
125	441	403	241	203	204	124
160	541	503	241	203	241	159
200	741	703	291	253	280	199



QUICK SELECTION

qv	Pa	192	288	384	480	576	672	768	960	1152	1344	1536
	l/s	20	30	40	50	60	70	80	100	120	140	160
	m³/h	72	108	144	180	216	252	288	360	432	504	576
TLD/A-100(D)	LpA	<20	25	33	39							
	ΔPst	12	26	46	72							
	ΔPtot	15	35	62	97							
	dP_t		153	76	-							
	Ld	1,8	2,7	4,0	4,9							
	L0.2	2,5	5,0	6,6	8,4							
TLD/A-125(D)	LpA			23	29	34	38	42				
	ΔPst			22	35	50	68	88				
	ΔPtot			28	45	64	87	114				
	dP_t			169	112	69	-	-				
	Ld			2,7	3,3	4,2	5,0	5,7				
	L0.2			6,0	7,6	9,0	10,6	12,5				
TLD/A-160(D)	LpA			<20	22	27	31	35	41	47		
	ΔPst			12	19	28	37	49	76	110		
	ΔPtot			15	23	33	45	58	91	131		
	dP_t			80	126	143	81	-	-	-		
	Ld			1,7	2,2	2,7	3,3	3,8	4,7	5,8		
	L0.2			3,4	4,5	7,8	10,0	11,5	14,5	17,5		
TLD/A-200(D)	LpA					21	25	28	33	38	43	47
	ΔPst					13	18	24	37	53	72	95
	ΔPtot					15	21	28	43	62	84	
	dP_t					75	102	133	59	-	-	-
	Ld					1,8	2,2	2,5	3,3	4,0	4,7	5,5
	L0.2					4,3	7,6	9,0	11,5	14,0	16,0	18,5

LpA values presented with room attenuation 4 dB (red 10m² - sab). When using room attenuation 8 dB (red 25m² - sab): LpA - 4dB.

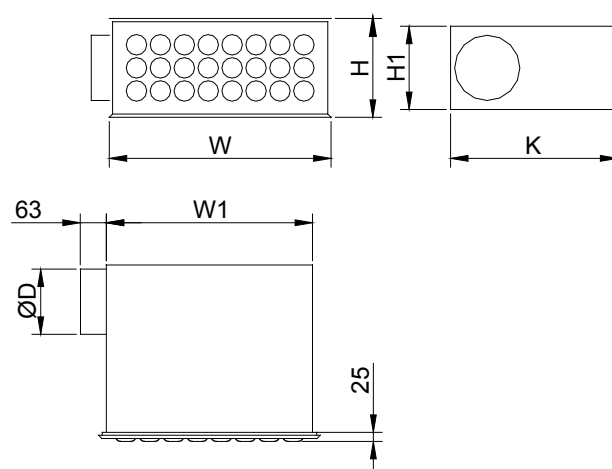
Pa Supply air cooling capacity, W
 LpA A-weighted sound pressure level, reduced by total equivalent absorption surface of 10m², dB(A) red 10m² - sab
 ΔPst Static pressure drop, Pa

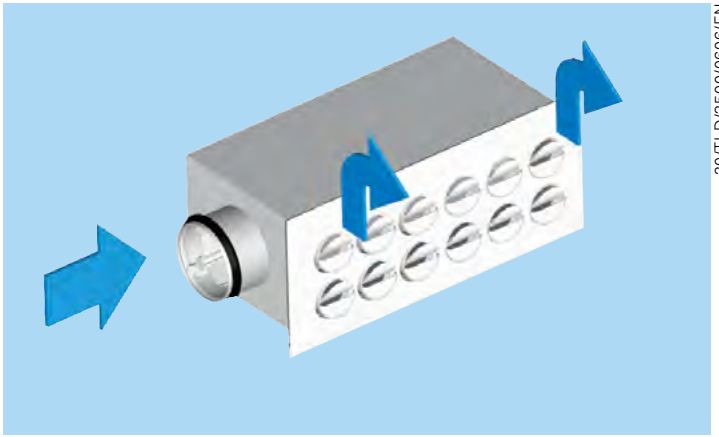
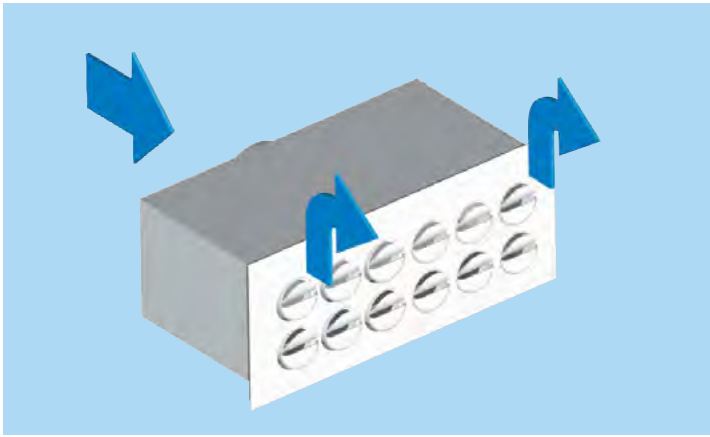
ΔPtot Total pressure drop, Pa
 Ld Distance from the supply unit, at which air jet detaches from ceiling, m
 dP_t Maximum ΔPtot (Pa), when a-weighted sound pressure level (Lp) is 35 dB(A)
 L0.2 Isothermal throw length, m when residual velocity of supply air jet 0,2 m/s
 Room temperature (Tr) = 24 °C
 Supply air temperature (Ta) = 16 °C

DIMENSIONS

TLD/D, mm

NS	W	W1	H	H1	K	K1	ØD
100	441	403	191	153	301	211	99
125	441	403	241	203	301	198	124
160	541	503	241	203	408	286	159
200	741	703	291	253	408	265	199





Function

The nozzles of the diffuser direct the airflow obliquely toward the ceiling surface.

The supply air pattern can be directed by rotating the nozzles.

Direction of the supply air jet does not affect the pressure drop or the airflow rate.

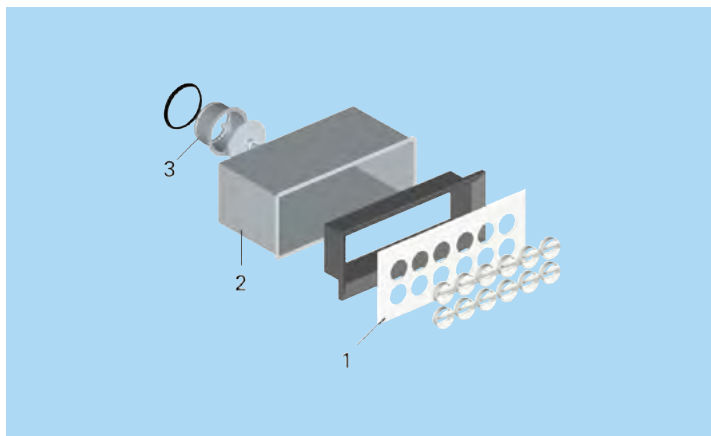
The recommended maximum air temperature difference between supply and room air is 8 °C.

The maximum recommended operating temperature for the plastic material is 60 °C.

Note: The airflow pattern data has been prepared for a wall installation with a distance of 200 mm from the ceiling surface (I) for a direct discharge without ceiling (II).

ACCESSORIES

ACCESSORY	CODE	DESCRIPTION
Cover sleeve	CE	Cover sleeve for exposed installation (only for TLD/B plenum)

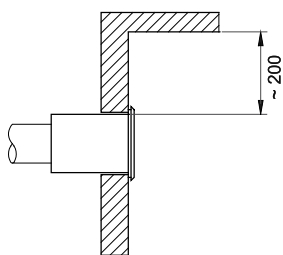


Installation

CODE DESCRIPTION

- | | |
|---|-----------------------------------|
| 1 | diffuser section |
| 2 | Plenum |
| 3 | Measurement and adjustment module |

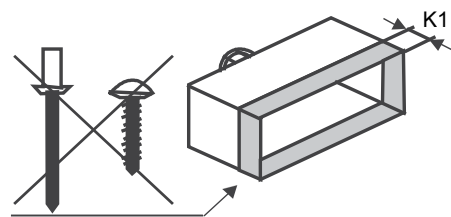
The recommended installation distance below ceiling level is approx. 200 mm.



Installation opening

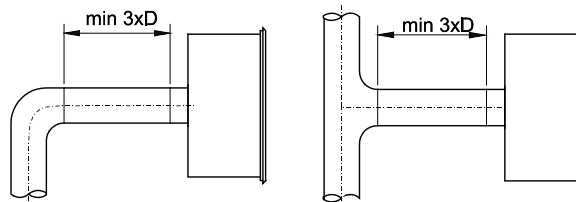


TLD	W2 x H2
100	405 x 155
125	405 x 205
160	505 x 205
200	705 x 255



TLD	K1
80	75
100	85
125	85
160	100
200	125

Do not fasten screws or rivets in the section at distance K1 from the front edge of the plenum, in order to keep the section clear for diffuser section (1) fastening.



The recommended minimum safety distance before the supply unit is 3xD (D = duct diameter).

Adjustment

The supply flow rate is determined by using measurement and adjustment module MSM. The tubes and control spindle are passed through the nozzles of the diffuser section, which is then replaced. Measure the differential pressure with a manometer. The flow rate is calculated using the formula below.

$$q_v = k * \sqrt{\Delta p_m}$$

Adjust the airflow rate by rotating the control spindle until the desired setting is achieved.

Lock the damper position with a screw.

Replace the tubes and spindle in the diffuser section.

The k factor for installations with different safety distances (D= duct diameter) is as follows.

SUPPLY AIR

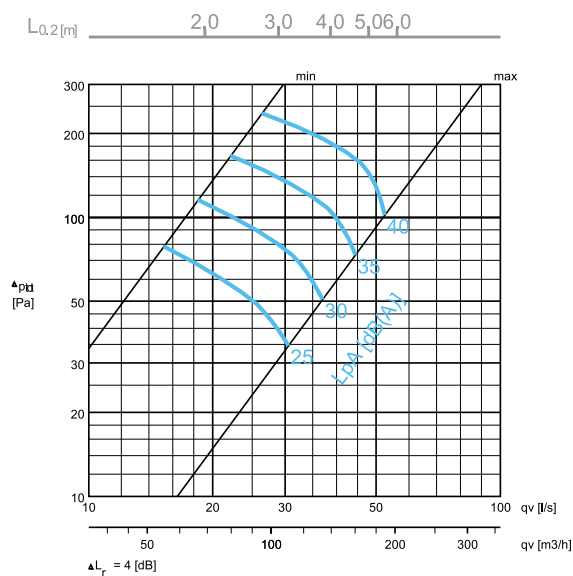
TLD	>8XD	min 3XD
100	5,8	6,4
125	9,4	12,6
160	16,1	22,0
200	26,9	32,7

The supply air pattern can be adjusted by rotating the nozzles manually.

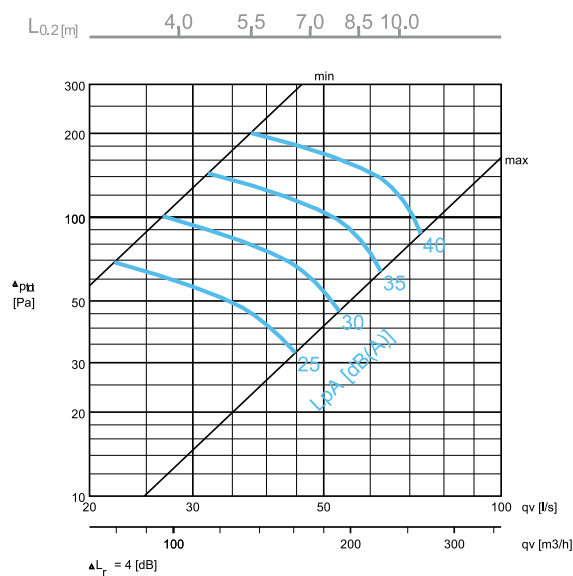
The wide throw pattern reduces the throw length about 20%.

Pressure drop, throw pattern and sound data

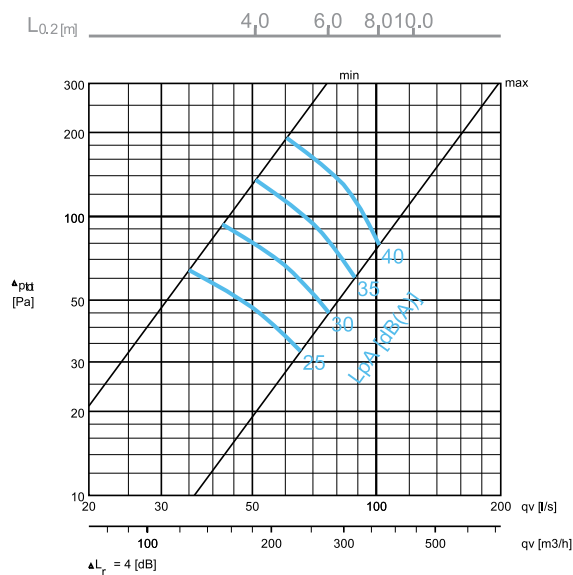
TLD/A-100(B)



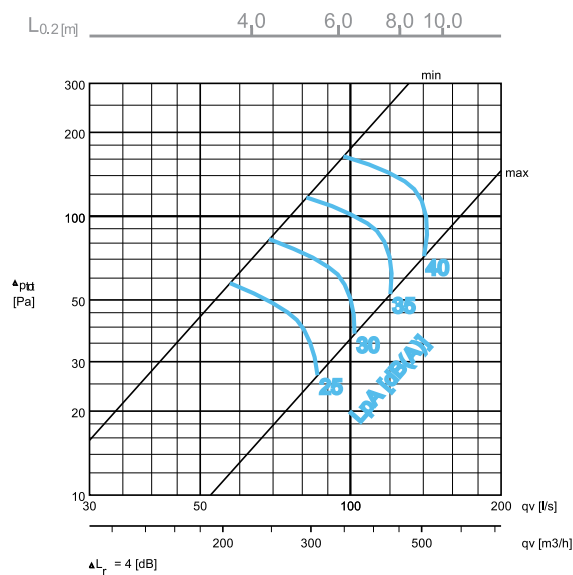
TLD/A-125(B)



TLD/A-160(B)



TLD/A-200(B)



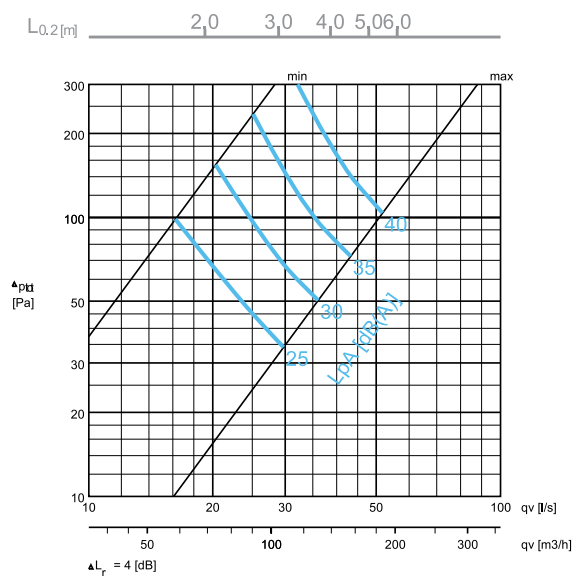
Selection example :

Requirements :	$q_v = 100$ l/s	Selection :	TLD/A-200(D)
	$L_{pA} < 35$ dB(A)		$L_{pA} < 33$ dB(A)
	$L_{0,2} < 7,0$ m		$L_{0,2} < 6,3$ m
			$\Delta P_{tot} = 43$ Pa

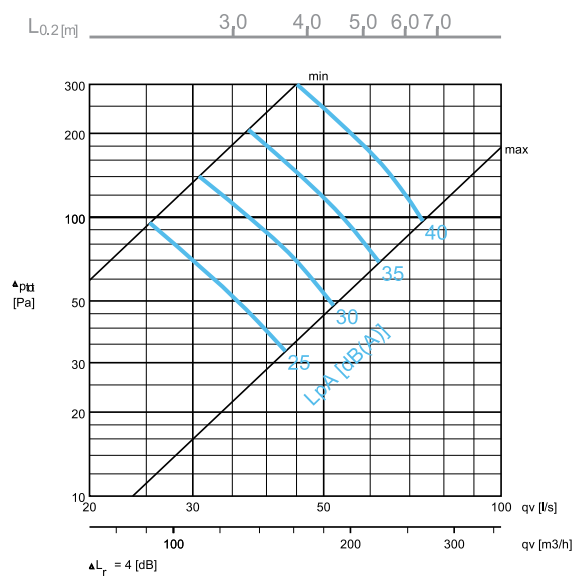
Installation 200 mm below ceiling

Pressure drop, throw pattern and sound data

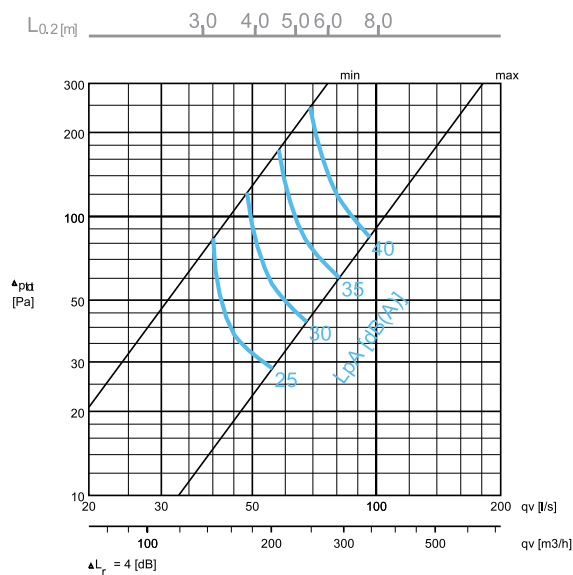
TLD/A-100(C)



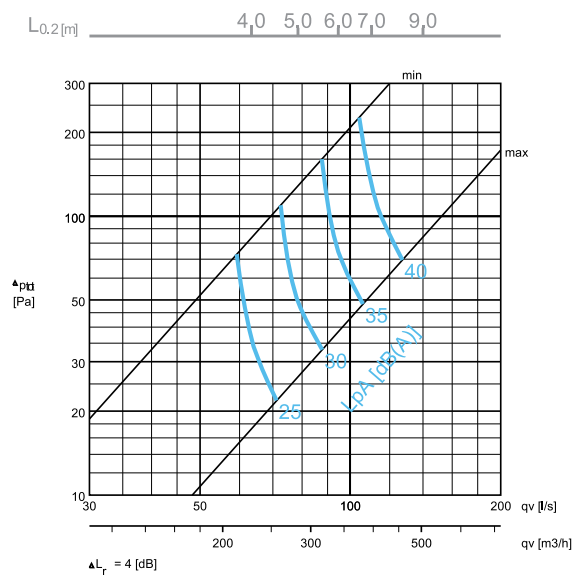
TLD/A-125(C)



TLD/A-160(C)



TLD/A-200(C)



Servicing

Open the diffuser section, and remove the measurement and adjustment module by gently pulling from the shaft (not from the control spindle or measurement tubes).

Wipe the parts with a damp cloth, instead of immersing in water.

Reassemble the measurement and adjustment module by pushing the shaft until it meets the stopper.

The diffuser section is replaced by pushing it into the plenum until the springs lock.

Suggested specifications

The diffuser shall consist of a hot galvanised steel plenum and a detachable diffuser section made of epoxy-painted steel, with white (RAL 9010) as standard colour.

The detachable diffuser section shall include adjustable nozzles and be attached to the plenum with invisible springs.

The wall diffuser unit shall have the supply air pattern obliquely toward the ceiling or directly forward. The ductwork connection shall be located at the back or side of the unit.

The throw pattern size and shape shall be adjustable individually by rotating the nozzles.

The diffuser shall provide access to the plenum and ductwork for cleaning and maintenance.

Product code

TLD/S-D(J)

S = Construction

A	Diffuser section
B	TLB Plenum (with MSM module)
C	TLB Plenum (without MSM module)
D	TLC Plenum (with MSM module)
E	TLC Plenum (without MSM module)

D = Diameter of duct connection

100, 125, 160, 200

Specifics and accessories

CO = Colour

W	White
X	Special colour

Code example

TLD/A-100(A), CO=W

Sub products

CE Cover sleeve (TLB)