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Please read these operating instructions carefully before operating this equipment.
The instruction manual is part of the product and must remain with it during its entire lifetime.
If the product is transferred to another user, the instruction manual must also be transferred.
If there are any questions or problems regarding the use,
please contact:

450 - 1000 W Xe
Arc Lamp Power Supply
LSN555

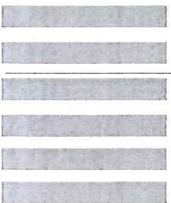
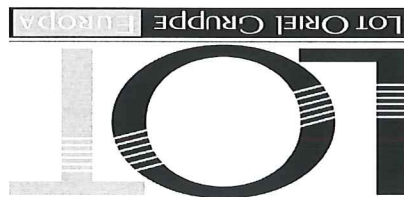




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WARNING SYMBOLS

The following hazard warning symbols are used:

CAUTION  Hazard which can damage the product or any component(s) connected to it.

WARNING  Hazard which can cause injury to the user or another person. Read and understand the operating instructions!

CAUTION  Electrical shock hazard

WARNING  Lamp explosion

I. SAFETY NOTES

There are six hazards in the operation of a Xe arc lamp light source:

UV-radiation

Ozone

EMI

Heat/fire

Electrical

Lamp explosion

The first 4 are directly lamp housing related issues and we talk about them in the appropriate lamp housing manual.

ELECTRICAL HAZARDS



A high transitory voltage (25 – 45 kV) is used to ignite arc lamps. The lamp terminals may have a potential difference of up to 200 V prior to lamp start.

Warning:

1. Make sure the power is off when connecting to or from the power supply
2. Keep personnel clear of all exposed terminals.
3. To ensure that internal capacitors are fully discharged, disconnect the input power and ensure that the power supply voltmeter is set to zero voltage (if available) before changing lamps or working on the system.
4. Make sure all connections have been made correctly (and check the polarity) before starting a lamp.
5. Do not handle lamp leads during lamp ignition.
6. Only use the power supply with closed housing, as there are lethal voltages inside.

LAMP EXPLOSION



When arc lamps are cold, they are under several atmospheres of pressure (Xe and Hg(Xe) lamps up to 20 bar, Hg up to 3 bar), and may explode due to internal strains or physical abuse. When hot, both Xenon and Mercury arc lamps have internal pressures up to 100 atmospheres so there is a possibility of violent explosions. In normal operation lamp explosions are rare and usually only occur if the lamp is not handled (and operated) in the recommended manner.

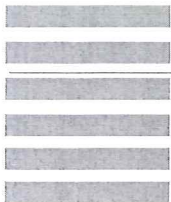
Possible reasons for lamp explosions are:

Possible reasons for lamp explosions are:

- Incorrect polarity.
- Insufficient cooling.
- Excessive wattage or over current. The higher the wattage input, the higher the internal pressure.
- The lamp life exceeded by more than 25 %. Advanced recrystallization of the quartz weakens the mechanical strength of the bulb.
- Blackening of the lamp bulb. This is caused by tungsten gradually evaporating from the electrodes. So gradually temperature and pressure rises in the bulb due to absorption of the radiation.
- Too many lamp ignitions or lamp starts respectively (the stated average lamp life refers to an average operating time of 2 h for each lamp start). Too many lamp starts will shorten the lamp life.
- Stress to the lamp envelope. Stress can occur from scratches due to improper handling, from deterioration of the lamp envelope, from improper mounting or microscopic cracks caused by dusty cooling air.
- Finger prints and other contaminations left on the lamp will burn in and cause a deterioration of the envelope while acting as a seed for ongoing recrystallization of the quartz.

Recommendations:

1. Read and understand the lamp housing operation manual for correct lamp installation.
2. Replace the lamp before the specified lamp life is exceeded by more than 25 %.
3. Do not handle a bare arc lamp without safety goggles and protect all exposed areas of the skin.
4. Do not touch the lamp envelope with your fingers. In case it happens accidentally, clean the envelope with alcohol.
5. Do not operate the lamp at more than 10 % above the rated power or current, especially if the lamp is old.
6. Do not apply torque to the lamp envelope during installation or removal.



II. NORMAL USE OF THE POWER SUPPLY

The LSN555 power supply is exclusively designed for use with specific 450 to 1000 W Xe arc lamps. It provides highly regulated constant current for proper operation of these lamps in the corresponding LOT lamp housings. Any other use of the power supply is not as agreed.



Features include:

- Allows setting the output current to the recommended operating value before lamp start.
- Digital display of output current and power.
- Potentiometer for precise output current adjustments.
- LED indicators show the status of important lamp functions.

Use the power supply only in a dry room and make sure that the air can circulate around the power supply housings slots. The power supply should stand on a safe and non-slip basis.



LAMP HOUSING CONNECTIONS

The OUTPUT connector for the cable to the lamp housing are two D-SUB (Form 7W2) on the rear panel. They provide all necessary signals to operate the appropriate LOT lamp housing.

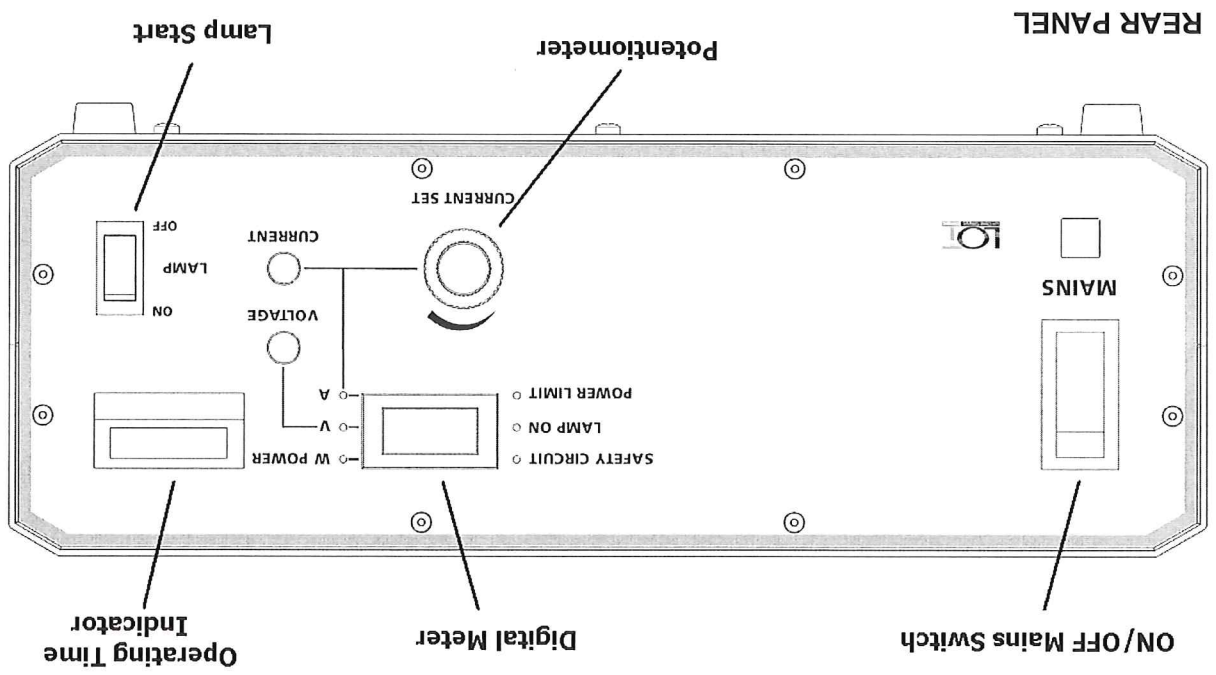
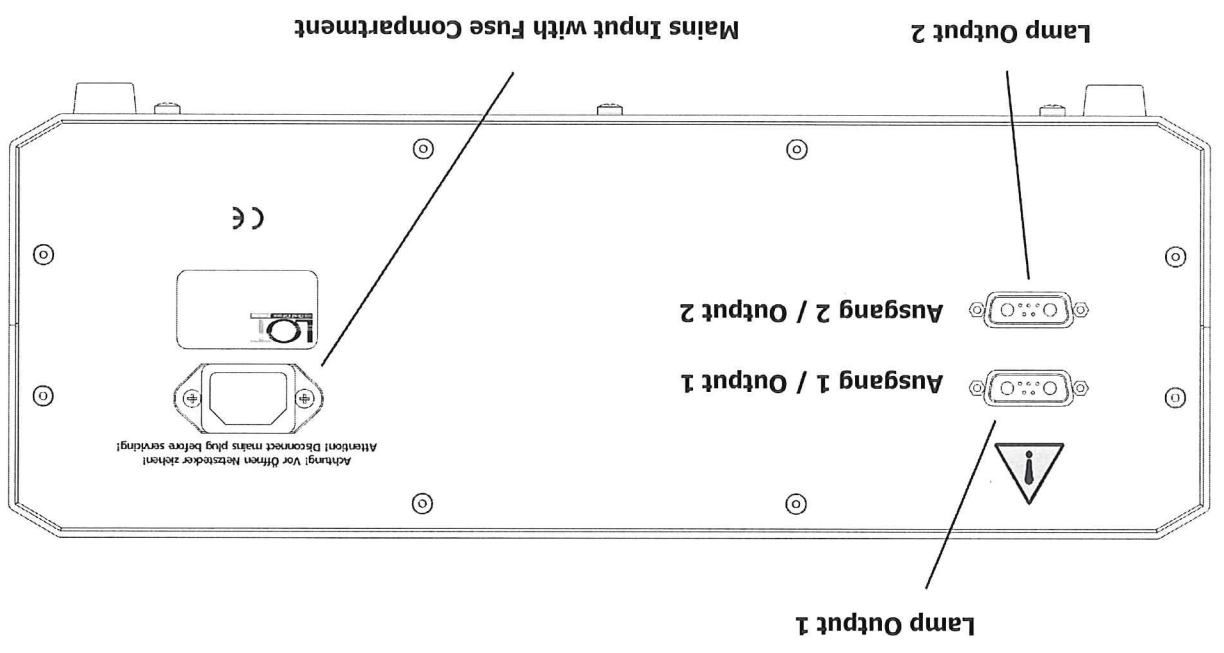


- Set the mains switch at the front panel in OFF position.
- Read and understand the lamp housing operating instructions for proper lamp installation. Incorrect lamp installation may destroy the lamp!
- Attach one end of the cables to the LOT arc lamp housing.
- Attach the other end of the (provided) cables to the power supply (connection of cables to output 1 or 2 is interchangeable).
- Make sure all connectors are fully seated and the retention screws are tight.
- Make sure that the leads in the lamp housing are properly connected to the arc lamp. INCORRECT CONNECTION WILL DESTROY THE LAMP ELECTRODES AND POSSIBLY CAUSE AN EXPLOSION.

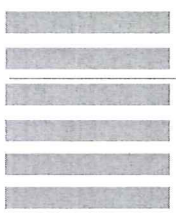
AC MAINS CONNECTIONS



Before connecting the power supply to the mains, verify that the mains POWER switch at the front panel is in the OFF position and the lamp housing cable is connected at both ends. Then plug the AC power cord (provided) into the power supply and the wall outlet. The LSN555 must only be connected to a functioning 2-pole and ground socket outlet. The ground connector line included in the power cord must not be interrupted (e.g. by unsuitable extension cables).



FRONT PANEL



OPERATING THE LAMP

Make sure that the lamp is correctly installed in the lamp housing. Follow the instructions in the lamp housing operating manual.

- Turn on the power supply with the MAINS switch. The power supply will not turn on unless the lamp housing interlock circuit is satisfied. The "SAFETY CIRCUIT" LED indicates that the interlock circuit is closed.

- Preset the lamp current with the "CURRENT SET" potentiometer to the desired value i.e. rated current or max. 20% less than rated current. You will find the rated current of the specific lamp on page 10. If the lamp is off, the display shows the preset current (21 – 50 A) in Amps.

- Start the lamp with the Lamp ON/OFF switch. Usually a cold Xe lamp will start automatically within 30 seconds. The "LAMP ON" LED illuminates when the lamp is operating. The display now shows the actual operating lamp power!

Note:

There is an ignition time limit of approx. 45 sec. This means that after 45 sec the ignition process is shut off! In order to reactivate the lamp start you must again turn the LAMP ON/OFF switch in OFF-position for 2 seconds and then back in ON-position. Note that the rated operating power is not reached until the lamp is warmed up. (a few minutes for Xe lamps).

The "CURRENT SET" knob (potentiometer) allows you to set the lamp current within a 21 – 50 A range either before lamp start or during lamp operation. Press the "CURRENT" button to display the current during lamp operation. (If your application requires constant light level during lamp life you should start a new lamp with 80% of rated current (or power) and then raise lamp current accordingly).

If the "POWER LIMIT" LED lights a 1000 W lamp is outside of operating voltage and the power supply now is operating in constant power limit mode. While the lamp is ageing lamp voltage continuously raises. With a fixed lamp current this leads to operating the lamp with overpower. If the "POWER LIMIT" LED lights useful 1000 W lamp life is reached. Replace the lamp!



The constant power limit mode does not apply to 450 W lamps! In this case you carefully have to watch the lamp current and wattage. The rated lamp wattage should not exceed 105%. More than 105% may cause lamp explosion. If a 450 W lamp is operated at rated current and has reached a power consumption of 105% of rated power, the lamp is outside of operating voltage and the useful lamp life is reached. Replace the lamp!

Caution:



It has to be avoided in any case to turn on the "Lamp ON/OFF" switch of the power supply (when connected to the ignitor LSE640) if no lamp is installed in the lamp housing. Otherwise the ignitor can be damaged!

III. SPECIFICATIONS

Input voltage	100 ... 240 V AC \pm 10 %
Input frequency	50 ... 60 Hz
Current input (effect.)	7 A (230 V)
Power consumption	1500 VA, max.
Fuses	10 A, bipolar in power switch
Electrical efficiency	< 0,7 (230 V; rated current)
Ambient/storage temperature	-5° C ... +40° C / -20° C ... +70° C
Protection class	I
Enclosure	IP 20 EN60529
Type of connection	Appliance inlet with protected earth (2+PE)
Suitable for altitudes up to	2.000 meters above sea level
Dimension height x width x length (mm)	154 x 385 x 342
Weight	approx. 11 kg

EMC

Safety	EN 61010-1 (2002-08)
Degree pollution severity	2
Overvoltage category	II

Output parameters

Output power limitation	1050 W
Output current	21 - 50 A \pm 2 % adjustable
Stability	$\leq 10^{-2}$ typ. (8h)
Mains insulation	3,3 kV DC (prim/sec)
Mains stabilisation	$\leq 10^{-3}$ typ.
Output current ripple	> 150 mA p-p
Output voltage, open circuit	190 V DC mains isolated
Output voltage, operation	lamp dependent
Short-circuit strength	sustained short-circuit
Meter accuracy:	
Current [A]	\pm 3 %
Power [W]	\pm 3 %

Protective functions

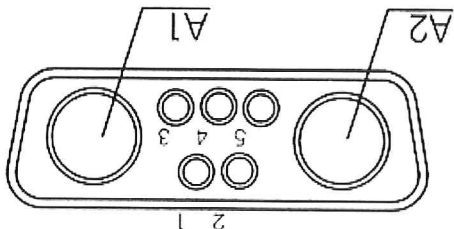
Overtemperature protection	automatic protection and indicator, reconnection
Safety circuit	the device will not provide output voltage, when the safety circuit is open

The company reserves the right to modify the product in line with the technological progress.

IV. CONNECTOR DETAILS

Type D-SUB/7W2

- A1: Lamp negative (cathode)
- A2: Lamp positive (anode)
- PIN 1: Ground
- PIN 2: Safety circuit +
- PIN 3: +12 V to Pin 1¹⁾
- PIN 4: Ignitor drive
- PIN 5: Safety circuit -
- Shielding: PE



1) 12 V; 0,3 A max. required for LOT lamp housing electronics

Connection required of PIN 2 and PIN 5 by the safety circuit (interlock). If no plug is connected or there is no contact between 2-5, the device will not provide output voltage.

V. TROUBLE SHOOTING

Power supply does not turn on

Check: - Mains cord connection
- Fuses

To replace the fuses:

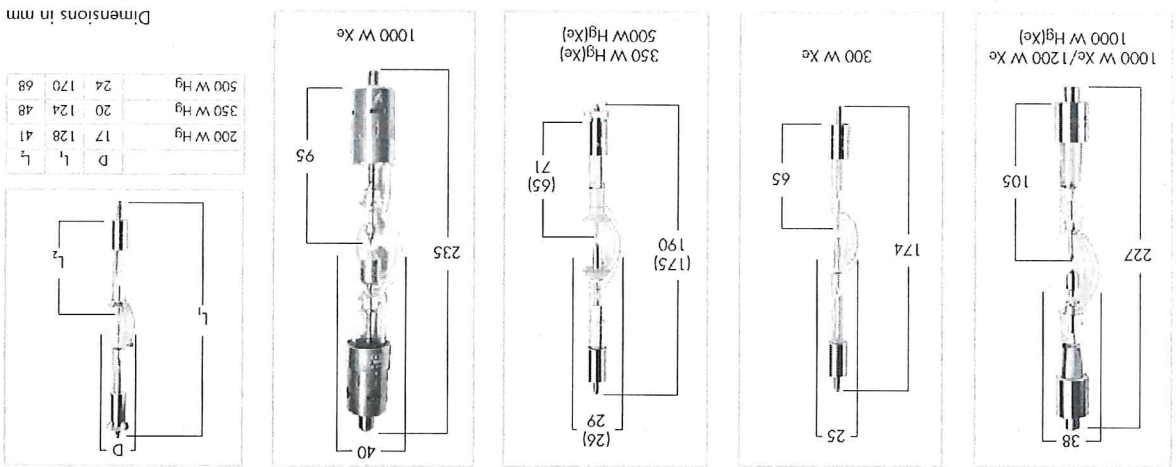
1. Switch off the device. Pull the mains plug.
2. Open the fuse drawer (snap closure at both sides of the drawer).
3. Check the fuses, replace if blown. Use only fuses of the same type and rating. The replacement fuse must have the same shape, current and voltage rating as the blown fuse. Use of replacement fuses from the same manufacturer is recommended.
4. Close the fuse drawer. Plug in the mains plug and repeat the starting procedure. (For fuse type, see "SPECIFICATIONS" and nameplate on the rear of the device or section "SPECIFICATIONS").

VI. MAINTENANCE AND CLEANING

There is no special maintenance required with exception of inspections required by law (electrical safety and accident prevention).

For cleaning turn the power supply OFF! Clean the device only with a dry, lintfree piece of cloth. Make sure that dust particles and moisture do not enter the device. It is generally enough to wipe the device dry outside regularly.

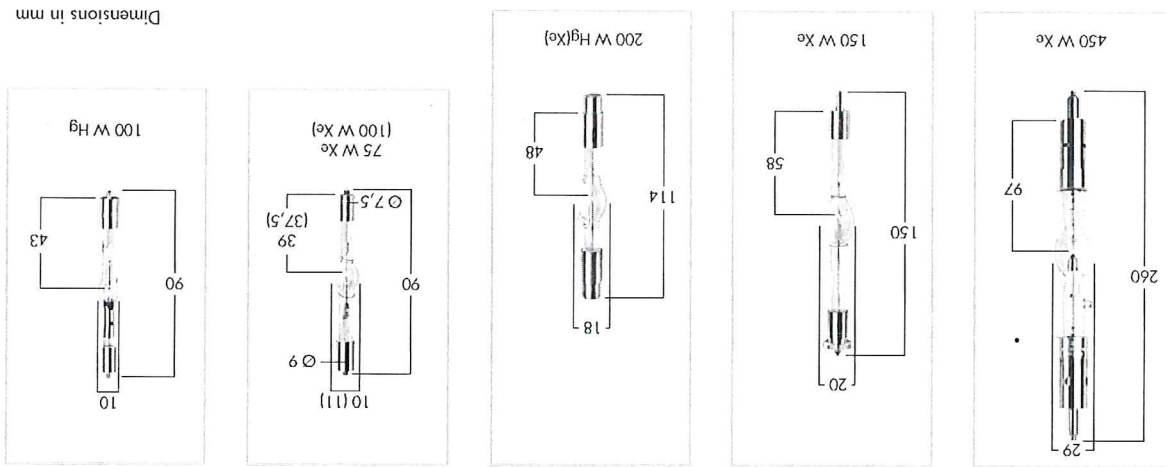
DC short arc lamps, specifications



Model	Lamp type	Current [A]	Voltage [V]	Approx. flux [lumen]	Lamp adapter for 500 W & 1 kW housings
LSB510	75 Xe	5.4	14	1000	-
LSB511	75 Xe OF	5.4	14	1000	-
LSB512	100 Xe OF	7.0	14	1900	-
LSB520	150 Xe	7.5	20	3000	-
LSB521	150 Xe OF	7.5	20	3000	-
LSB522	150 Xe UV	7.5	20	3000	-
LSB530	300 Xe OF	15	20	7000	LSA353
LSB531	300 Xe	15	20	7000	LSA353
LSB540	450 Xe	25	18	13000	LSA654
LSB541	450 Xe UV	25	18	13000	LSA654
LSB542	450 Xe OF	25	18	13000	LSA654
LSB550	1000 Xe	43.5	23	30000	LSA655
LSB551	1000 Xe OF	43.5	23	30000	LSA655
LSB552	1000 Xe OF	50	19	32000	-
LSB553	1200 Xe OF	48	25	32000	LSA655
LSB605	50 Hg	2.2	23	1300	-
LSB610	100 Hg	2.8 - 5.5	18 - 35	2200	-
LSB620	200 Hg	3.1 - 4.2	47 - 65	10000	LSA362
LSB630	350 Hg	4.7 - 5.9	60 - 75	18000	LSA363
LSB640	500 Hg	5.9 - 7.4	67 - 85	22500	LSA364
LSB710	100 Hg (Xe)	5.5	18	-	-
LSB711	150 W Hg(Xe)	7.5	20	-	-
LSB720	200 Hg (Xe)	8.0	25	4500	LSA370
LSB721	200 Hg (Xe) OF	8.0	25	4500	LSA370
LSB730	350 Hg (Xe)	14	25	-	LSA371
LSB740	500 Hg (Xe) UV	19	26	-	LSA372
LSB750	1000 Hg (Xe)	28.5	32 - 38	40000	LSA655
LSB751	1000 Hg (Xe) OF	28.5	32 - 38	40000	LSA655

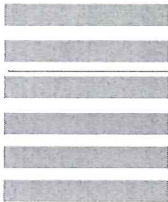
OF = ozone free

DC short arc lamps, specifications



Dimensions in mm

	Lamp type [W]	Horizontal intensity [cd]	Approx. luminance [cd/mm ²]	Effective arc size W x H [mm]	Average life [h]	Bulb diameter [mm]
Xe arc lamps						
LSB510	75 Xe	100	400	0.25 x 0.5	400	10
LSB511	75 Xe OF	100	400	0.25 x 0.5	400	10
LSB512	100 Xe OF	270	310	0.4 x 0.8	500	11
LSB520	150 Xe	300	150	0.5 x 2.2	1200	20
LSB521	150 Xe OF	300	150	0.5 x 2.2	1200	20
LSB522	150 Xe UV	300	150	0.5 x 2.2	1200	20
LSB530	300 Xe OF	700	290	0.7 x 2.6	900	25
LSB531	300 Xe	700	290	0.7 x 2.6	900	25
LSB540	450 Xe	1300	350	0.9 x 2.7	2000	29
LSB541	450 Xe UV	1300	350	0.9 x 2.7	2000	29
LSB542	450 Xe OF	1300	350	0.9 x 2.7	2000	29
LSB550	1000 Xe	3000	400	1.0 x 3.0	1000	38
LSB551	1000 Xe OF	3000	400	1.0 x 3.0	1000	38
LSB552	1000 Xe OF	3000	600	1.1 x 2.8	2000	40
LSB553	1200 Xe OF	3000	400	1.0 x 3.0	900	38
Mercury arc lamps						
LSB605	50 Hg	150	900	0.2 x 0.35	200	9.5
LSB610	100 Hg	260	1700	0.25 x 0.35	200	10
LSB620	200 Hg	1000	400	0.6 x 2.2	400	17
LSB630	350 Hg		400	0.8 x 3.0	400	20
LSB640	500 Hg	2850	300	1.1 x 4.1	400	24
Mercury (Xe) arc lamps						
LSB710	100 Hg (Xe)			0.4 x 1.3	1000	26
LSB711	150 W Hg(Xe)			0.7 x 1.7	2000	18
LSB720	200 Hg (Xe)	600	220	0.5 x 1.5	1000	18
LSB721	200 Hg (Xe) OF	600	220	0.5 x 1.5	1000	18
LSB730	350 Hg (Xe)			2.0 x 2.5	1000	26
LSB740	500 Hg (Xe) UV			2.5 x 3.0	600	29
LSB750	1000 Hg (Xe)	5000	360	1.0 x 3.0	1000	38
LSB751	1000 Hg (Xe) OF	5000	360	1.0 x 3.0	1000	38



EG – Konformitätserklärung

EC – Declaration of Conformity

Wir erklären hiermit die Übereinstimmung des genannten Gerätes mit der Richtlinie 2006 / 95 / EG (Niederspannungsrichtlinie) und mit der Richtlinie 2004 / 108 / EG (Elektromagnetische Verträglichkeit). Bei Änderungen am Produkt, die nicht von uns autorisiert wurden, verliert diese Erklärung ihre Gültigkeit.


We declare the compliance of the device with the requirements of the council Directive 2006 / 95 / EC (Low Voltage Directive) and with the Council Directive 2004 / 108 / EC (Electromagnetic Compatibility). Any modification of the product, not authorized by us, will invalidate this declaration.

Gerätebezeichnung / Device name:

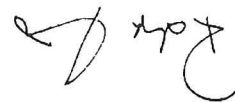
Netzgerät / Power Supply: LSN555

Normen / Standards:

EMV / EMC
 EN 61326-1 (10/2006)
 Elektrische Sicherheit / Electrical Safety
 EN 61010-1 (2002-08)

Das Gerät ist gekennzeichnet mit / The device is marked with 

Darmstadt, den 29. Juli 2008



Geschäftsleitung / Managing Director

L.O.T.-Oriol Laser Optik Technologie GmbH & Co. KG

Die Erklärung bescheinigt die Übereinstimmung mit der Richtlinie und dem Gesetz, Gewährleistung und Haftung sind in unseren Allgemeinen Lieferbedingungen geregelt.
 The declaration certifies the compliance with the directive and the law. Conditions of guarantee and liability are dealt within our General Conditions of Sale.