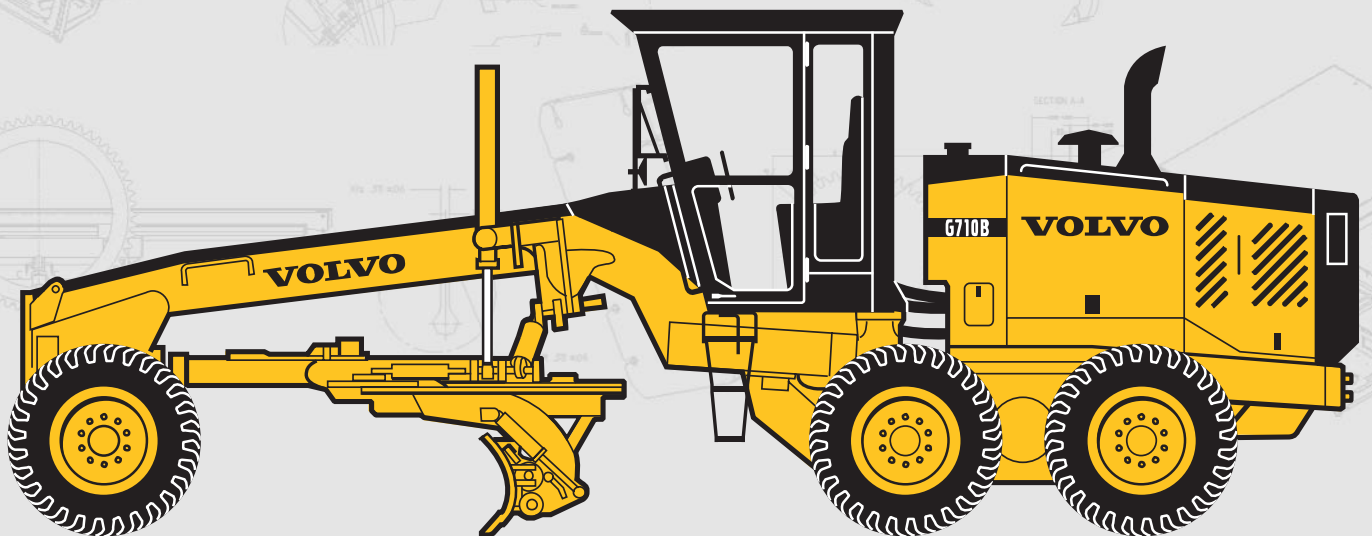


VOLVO MOTOR GRADER G710B

TANDEM DRIVE



- **Configuration:** Articulated frame
- **Engine model:** Volvo D7DGAE2
- **Maximum net engine output @1900 RPM (per SAE J1349):** 110 - 133 kW (148 - 179 hp)
- **Base weight:** 15 150 kg (33,400 lb)
- **Blade down force:** 7 697 kg (16,968 lb)
- **Blade pull:** 9 681 kg (21,343 lb)
- 8400 fully sequential direct drive powershift transmission
- Choice of fully enclosed, ROPS cab in full height or low-profile configuration, or ROPS canopy
- Moveable Blade Control System
- Load-sensing, Closed Center Hydraulic System
- Fully adjustable control pedestal with low effort hydraulic controls
- Full front and rear frame sections designed for attachment mounting
- Engine cooling module with efficient, variable speed, hydraulically-driven cooling fan
- Single lever "Smart Shifter" transmission control with gear memory feature
- Hydraulically Boosted Dual Crossover Braking System with reserve power assist
- Heavy-duty lock/unlock differential
- Contronic Monitoring System for all machine functions
- Full range of front and rear mounted attachments
- Equipped with the fuel-efficient, long life Volvo engine that complies to the EPA Tier II, EU Stage II emission standards

VOLVO



OPERATING WEIGHT

Weights shown include full cab with ROPS, all operating fluids and operator.

Base

Total	15 150 kg (33,400 lb)
On front wheels	4 394 kg (9,686 lb)
On rear wheels	10 757 kg (23,714 lb)

Typically equipped operating weight:

includes 14.00 x 24, 12 PR, G-2 tires on 254 mm (10") rims and 4 267 x 635 x 22 mm (14' x 25" x 7/8") moldboard and scarifier. G710B.

Maximum combined capacity	20 865 kg (46,000 lb)
Maximum weight - front	6 622 kg (14,600 lb)
Maximum weight - rear	14 243 kg (31,400 lb)

Weight adjustments for various options are listed at the rear of the brochure.

Note that adding weight and attachments to the base grader may necessitate a tire upgrade since the maximum weight capacity of the tire may be exceeded.



PRODUCTIVITY

Blade pull at base weight (no wheel slip, 0.9 traction co-efficient) 9 681 kg (21,343 lb)

Blade down force

• cutting capability (ISO 7134) 7 697 kg (16, 968 lb)

Blade down force is the maximum downward force which may be applied at the cutting edge.



ENGINE DATA

G710B

Make/Model	Volvo D7DGAE2
Type	4 Cycle, Turbocharged, Aftercooled
No. of cylinders	In-Line 6
Bore & stroke	108 x 130 mm (4.25" x 5.11")
Displacement	7,1 l (436 cu in)
Maximum net engine output @ 1900 RPM (per SAE J1349)	110-133 kW (148-179 hp)
Rated gross brake horsepower @ 2200 RPM	

• Gears forward 1, 2 and Reverse 1 110 kW (148 hp)

• Gears forward 3-8 and Reverse 2-4 129 kW (173 hp)

Rated net brake horsepower @ 2200 RPM

• Gears forward 1, 2 and Reverse 1 105 kW (141 hp)

Torque @ 1100 RPM 743 N.m (548 lb.ft)

Torque rise 53.3%

• Gears forward 3-8 and Reverse 2-4 124 kW (166 hp)

Torque @ 1400 RPM 801 N.m (591 lb.ft)

Torque rise 41.7%

Performance: Rated net brake horsepower SAE standard J1349/ISO 3046-2 conditions with water pump, lubricating oil pump, fuel system, air cleaner, alternator and cooling fan.

Engine complies to EPA Tier II, EU Stage II exhaust emission standard.

Engine cooling system designed with singular cooler installations, and utilizes a highly efficient, variable speed, hydraulically-driven cooling fan.

Engine equipped with a two stage, dual element, dry type air cleaner with exhaust aspirator and service indicator. 24 volt starting and electrical system with 80 amp (1920 watt) alternator with internal voltage regulator. Two heavy-duty, 12 volt maintenance free batteries with 660 cold cranking amps (CCA) and 160 minutes reserve capacity per battery. 1300 CCA batteries available optionally. System includes battery disconnect.



TRANSMISSION

Make/Model Volvo 8400

Fully sequential, direct drive, powershift transmission. Engine cannot be started if transmission is in gear. Single lever "Smart Shifter" electronic transmission controller provides self-diagnostics. The flywheel mounted, multi-disc master clutch is oil-cooled and lubricated for long life.

Ground speeds at 2200 RPM with standard tires:

Forward	Reverse
Gears... km/h mph	Gears... km/h mph
1 3,8 2.4	1 3,8 2.4
2 5,4 3.4	
3 7,4 4.6	2 7,4 4.6
4 10,4 6.5	
5 14,7 9.2	3 14,7 9.2
6 20,5 12.7	
7 28,5 17.8	4 28,5 17.8
8 39,8 24.9	

Transmission guard is standard equipment and is hinged for easy access.

Perma Lube U joints on the input/output drive shafts.



DIFFERENTIAL / FINAL DRIVE

Make/Model Volvo SR30

Single reduction final drive with an operator controlled lock/unlock differential. Rear axles are induction hardened, supported on double row spherical roller bearings.

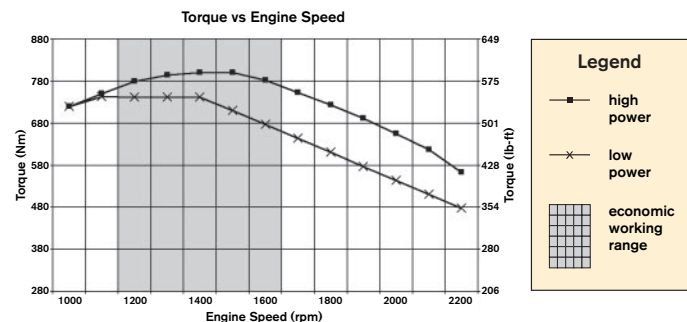


TANDEMS

Robotically welded, tandem case with internal gusseting for maximum torsional strength. Field proven split ring/flanged sleeve tandem mounting and 25 mm (1") thick inner wall resists flexing from side loading during severe applications.

Depth	622 mm (24.50")
Width	210 mm (8.25")
Thickness • inner wall	25 mm (1.00")
• outer wall	19 mm (0.75")
Center distance	1 562 mm (61.50")
Drive chain pitch	44 mm (1.75")
Oscillation	±15°

ENGINE PERFORMANCE CURVE





BRAKES

Service Brakes: Foot operated

Fade resistant, hydraulically actuated, wet multiple disc service brakes located at the four tandem drive wheels are self-adjusting, fully sealed and maintenance free. System features crossover dual braking circuits for uniform braking on both sides of the grader. Includes reserve power assist and operator warning system (visual and audible).

Parking Brake

Spring applied hydraulic release independent, disc-type parking brake on transmission output shaft and effective on all four tandem drive wheels. Includes visual and audible operator warning system for parking brake on, transmission in gear condition. Transmission will not engage with park brake on.

Braking systems comply to SAE Recommended Practice J1473 OCT. 90, and J1152 APR. 80; ISO 3450-1993-01-28. Volvo uses asbestos-free brake components.



WHEELS AND TIRES

Tire size 13.00 x 24, G-2
 Ply rating (PR) 12
 Rim size 229 mm (9.0") One piece rim
 Bolt-on rims are interchangeable between front and rear. Multiple piece rims available.



FRONT AXLE

Type: Robotically welded steel truss, gusseted for torsional strength, oscillates on a single 80 mm (3.15") diameter center pivot pin.

Wheel lean 18° R & L
 Oscillation 16° up and down
 Ground clearance 597 mm (23.5")

A single 102 mm (4") diameter wheel lean cylinder with lock valve is standard equipment. Two 76 mm (3") diameter wheel lean cylinders with lock valve are available optionally.



STEERING

Hydrostatic power steering of front wheels incorporating two steering cylinders. Meets SAE J1511 OCT. 90 with optional secondary steering.

Minimum turning radius using front axle steering, articulation, wheel lean and unlocked differential

. 7 747 mm (25'5")
 Steering arc 72°
 Frame articulation angle 22°
 Articulation lock standard.



FRAME

Full front and rear frame sections.

Front: Robotically welded box section.

Dual sloped front frame provides excellent forward visibility.

Minimum dimensions of box section. 267 x 356 mm (10.5" x 14")

Plate thickness 19 mm (0.75")

Vertical section modulus

at arch 1 950 cm³ (119 cu in)

minimum 1 663 cm³ (101.5 cu in)

maximum 3 474 cm³ (212 cu in)

Linear weight - minimum-maximum 159.4 - 346.0 kg/m
 (107.1 - 232.5 lb/ft)

Rear: Full perimeter rear frame permits modular powertrain mounting for ease of service and is ideal for attachment mounting.

Optional first user lifetime warranty on frame and articulation joint.

Minimum dimensions of

rear frame 102 x 254 mm (4.0" x 10.0")

Plate thickness 9.5 mm (0.375")



ARTICULATION

Twin 114 mm (4.5") hydraulic cylinders articulate the frame 22° right and left. Anti-drift lock valve ensures stable operation.



CIRCLE

Hardened teeth, cut on the outside of the circle for maximum leverage and minimum wear.

Circle to drawbar support is provided at nine points. Three upper circle wear plates, three adjustable clamp plates and three adjustable guide shoes combine to ensure optimum circle support and load distribution. DURAMIDE™ wear plates and bearings at the clamp and guide shoes prevent metal-to-metal contact and provide maximum service life.

DURAMIDE™ is a synthetic bearing material that provides long service life and reduces circle system maintenance requirements.

Diameter	1 683 mm (66.25")
Thickness	32 mm (1.25")
Adjustable guide shoes	3
Adjustable clamp plates	3
Upper circle wear plates	3



CIRCLE DRIVE

The Volvo dual cylinder Circle Drive System uses direct acting hydraulic power for exceptional turning and holding capability under full load. The Circle Drive System uses hardened drive pinions and is protected against impact damage by an overload relief valve as standard equipment.

Hydraulic drive cylinders	2
Points of leverage	2
Rotation	360°



DRAWBAR

Fully welded box section. Narrow "T" design permits optimum visibility to the work area. Drawbar ball stud provides an adjustment to compensate for different tire sizes. Blade lift cylinder anchors are straddle mounted on drawbar to provide maximum strength and support.

Dimensions of box section	165 x 165 mm (6.5" x 6.5")
Plate thickness	25 & 19 mm (1.0" & 0.75")



MOLDBOARD

Standard moldboard with replaceable end bits	3 658 x 635 x 22 mm (12' x 25" x 7/8")
Blade material	SAE 1050 high carbon steel
Edge: through hardened	152 x 16 mm boron steel (6" x 5/8")
Bolt spacing	152 mm (6")
• bolt size	16 mm (5/8")

Slide rails supported by DURAMIDE™ bearings.



BLADE RANGE

(Dimensions shown with standard moldboard)

	LEFT	RIGHT
Reach outside tires - articulated frame	3 035 mm (119.5")	3 061 mm (120.5")
Reach outside tires - straight frame	2 019 mm (79.5")	2 045 mm (80.5")
Blade slide	673 mm (26.5")	673 mm (26.5")
Circle side shift	775 mm (30.5")	749 mm (29.5")
Maximum bank sloping angle	90°	90°
Blade ground clearance	432 mm (17.0")	
Blade cutting depth	813 mm (32.0")	
Blade tilt range	47° forward	5° back

Superior blade mobility permits steep ditch cutting angles and back sloping outside overall machine width.



CAB AND CONTROLS

All controls are located in a 90° arc forward and to the right of the operator. Enclosed cab has a fully adjustable, cloth covered suspension seat as standard and comes with a 76 mm (3") seat belt. Located forward of the operator are the engine oil pressure, coolant temperature and fuel level gauges, transmission gear indicator and a multi-function Contronic monitoring display. Located in the fully adjustable steering pedestal are the following switches: differential lock/unlock, hazard lights, combination turn signal, horn and high beam headlight. Heater and wiper/washer controls (if equipped), lighting and accessory switches are grouped in the operator's right hand console. This console also contains the ignition key and access to the circuit breaker and fuse panel. An accelerator/decelerator foot pedal and slider type hand throttle are standard equipment. Outside mounted rearview mirrors (L&R) and a convex interior mirror are standard. Interior operator noise levels average 75 dB(A) per ISO 6394 (enclosed cab).

Cab options

- High-capacity heater/air-conditioner c/w adjustable vents, temperature control and variable speed fan
- Lower opening front windows
- Rear windshield wipers and washers
- Lower front window wipers and washers
- Modular, 24 volt radio and cassette player
- Operator Convenience Package included with air-conditioner option (lunch box, steel vacuum bottle, cup holder and ashtray)
- 24 volt to 12 volt converter for electrical accessories or two way radio installations 25 or 60 amp available
- Bubble type slope meter
- Transmission and hydraulic filter restriction warning
- Low hydraulic oil and hydraulic oil temperature indicator
- Speedometer/odometer

Full height cab with ROPS

Inside dimensions

Height	1 880 mm (74.0")
Width @ controls	1 422 mm (56.0")
Depth @ controls	1 410 mm (55.5")

An optional Low-Profile Cab is available with an inside height of 1 575 mm (62"). All Volvo Grader cabs and canopies are designed to meet or exceed SAE J1040 APR. 88, ISO 3471/1-1986(E), and 86/295/EEC ROPS requirements. The seatbelt is 76 mm (3") wide and meets SAE J386 JUNE 93; ISO 6683-1981(E).

LOAD-SENSING HYDRAULICS

Closed Center Hydraulic System senses load requirements and maintains system pressure 24 Bar (350 psi) above the load pressure.

System features industry standard control arrangement complete with low effort, feathering type, short throw levers located on a fully adjustable steering pedestal.

System incorporates lock valves to prevent cylinder drift under load in the following circuits: blade lift, moldboard tilt, circle shift, wheel lean, circle turn and articulation.

Hydraulic system features include axial piston pump, pressure and flow compensated, variable displacement with high output for smooth multi-functioning.

The pump drive shaft is equipped with Perma Lube U joints.
 Maximum pressure 186 Bar (2,700 psi)
 Output 2200 RPM 0-284 lpm (0-75 U.S. gpm)
 Filtration 10 micron spin-on type

CAPACITIES

	Litres	U.S. Gal.
Fuel tank	378.5	100.0
Transmission	38.0	10.0
Final drive	23.0	6.0
Tandems (each)	100.0	26.4
Hydraulic oil tank	134.0	35.4
Coolant antifreeze protection to -50° C (-58° F) approx	28.0	7.4
Engine oil	32.0	8.4

ATTACHMENTS

(Optional unless otherwise stated as standard equipment)

Snow

Hydraulic Wing		
• high-bench	2 177 kg	(4,800 lb)
• low-bench	1 814 kg	(4,000 lb)
One Way Snow Plow	1 065 kg	(2,350 lb)
“V” Snow Plow		
• 2 743 mm (9')	1 134 kg	(2,500 lb)
• 3 042 mm (10')	1 202 kg	(2,650 lb)

Earth

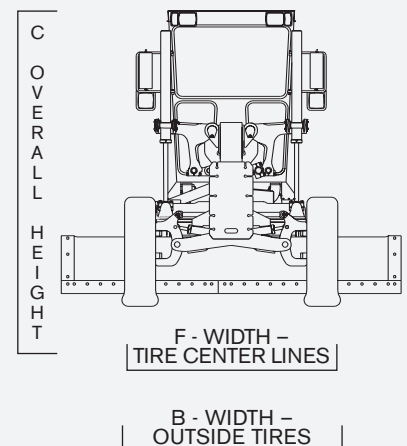
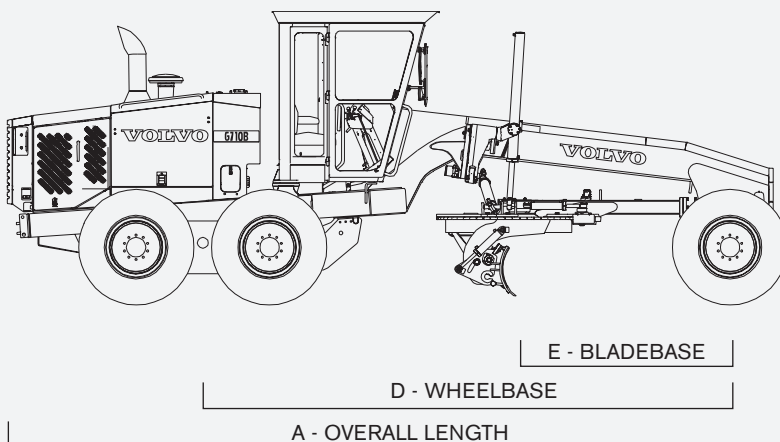
Dozer Blade		
• 2 438 mm (8')	1 188 kg	(2,620 lb)
• 2 743 mm (9')	1 302 kg	(2,870 lb)
Front Mounted Scarifier	807 kg	(1,780 lb)
Mid-mount Scarifier	782 kg	(1,725 lb)
Push Block	510 kg	(1,125 lb)
Ripper/Scarifier, rear	1 306 kg	(2,880 lb)

Dimensions with standard equipment

All dimensions are approximate

A Overall length	9 093 mm (29'10")
D Wheelbase	6 096 mm (20'0")
E Bladebase	
• ISO 7134	2 616 mm (8'7")

B Overall width	2 489 mm (8'2")
C Overall height	3 378 mm (11'1")
• with Low Profile Cab	3 073 mm (10'1")
F Width – Tire center lines	2 083 mm (6'10")



STANDARD EQUIPMENT

Operator controlled, lock/unlock differential final drive

4 wheel, crossover, dual braking system with reserve power assist

Park brake with operator warning alarm and indicator

Fully sequential, direct drive, powershift 8400 transmission, with transmission guard

343 mm (13.5") diameter, 4 plate, oil-cooled and lubricated master clutch

Moveable Blade Control System for optimum blade mobility

Full front and rear frame sections designed to withstand shock loading of attachments

Circle drive counter-balance valve protects against impact damage

Hardened circle teeth cut on outside of circle for maximum leverage and minimum wear

Hardened circle drive pinions for maximum wear resistance

Isolation mounted cab, transmission and engine for reduced noise and vibration

Adjustable steering control pedestal with tilt head for maximum operator comfort

Gauges include: coolant temperature, engine oil pressure, fuel level, hourmeter, air cleaner service indicator, articulation angle indicator, multi-function Contronic Monitoring System with visual and audible warnings

Load-sensing, Closed Center Hydraulic System with short throw, low effort control levers. Hydraulically operated blade lift, circle turn, moldboard slide and tilt, circle shift, wheel lean functions and articulation

Feathering type controls for precise blade adjustments

Deluxe, cloth covered, fully adjustable suspension seat when grader is equipped with an enclosed cab

378.5 l (100 U.S. gallon) fuel tank capacity

DURAMIDE™ wear strips on circle clamp plates and guide shoes prevent metal-to-metal contact for maximum service life

Hinged cooling module doors for easy trash clean out

Lights; backup, tail, stop and directional

Backup alarm with automatic volume levels

Painted high gloss Volvo yellow and gray

Lockable toolbox with storage space for scarifier shanks

Engine side panels complete with locks

Left and right outside rearview mirrors

Interior rearview mirror

Exhaust aspirated air cleaner

Front cab wiper and washer standard when grader is equipped with an enclosed cab

VHP – variable horsepower

OPTIONAL EQUIPMENT *(Standard in certain markets)*

	kg	lb
Accumulators - blade lift (2)	55	122
Accumulators - sideshift	23	50
Air-conditioner - 35,000 BTU		
• HFC-134a (non-CFC refrigerant)	59	130
Brush guards	18	40
Cab		
• Canopy shell with ROPS – deduct . (284) (625)		
• FOPS protection for ROPS cabs	100	220
• Low-Profile Cab		
with ROPS - deduct (122) (270)		
Cab heater - 50,000 BTU with cab		
pressurizer and replaceable filter	27	60
Defroster fans	1	3
Engine block heater	1	3
Engine precleaner - Turbo II	3	6
First user lifetime frame warranty	0	0
Float control, right and left detent style		
independent	7	15
Front attachment float control, detent style,		
independent of other float valves	7	15
Hydraulic tank heater	1	3
24 volt radio/cassette player	3	6
Lights		
• Beacon (amber or blue)	4	10
• Clearance lights front & rear	1	2

	kg	lb
• Front mounted plow lights - 2		
• high-mount	54	120
• low-mount	45	100
• Headlights with dimmer switch	0	0
• Moldboards lights - 2	1	2
• Rear flood lights - 2	1	2
• Snow wing lights - 2	1	2
Fenders		
• Front	36	80
• Rear	182	400
Moldboards		
• 3 962 x 635 x 22 mm		
(13' x 25" x 7/8")	50	110
• 4 267 x 635 x 22 mm		
(14' x 25" x 7/8")	99	219
Moldboard extensions		
R or L - 610 mm (2")	86	190
Moldboard edges - carbide 19 x 127 mm		
(3/4" x 5")	-	-
100 amp alternator	0	0
Paint - custom colors	-	-
Polar protection	0	0
Reflectors - side	-	-
Remote valve for attachments		
• 3 or 5 bank	39	85

	kg	lb
Second leaning wheel cylinder	14	30
Secondary steering (power assisted)	43	95
Tie down brackets	45	100
Tires		
• 14.00 x 24, 12 PR, G-2,		
254 mm (10") rims	104	230
• 17.5 x 25, 12 PR, L-2,		
356 mm (14") rims	374	825
• Consult your Volvo dealer for full		
range of tire and wheel options		
Tool kit	16	35
Transmission sump heater	-	-
Low ambient fluids	-	-
Vandalism protection	4	8
Wheel weights front or rear - each	113	250
Window - opening - lower front	-	-
Window - opening sliders - left/right	-	-
Wiper and washer - rear	-	-
Wiper and washer - lower front	-	-
Rear tailgate guard	90	200
Intermittent wipers, front and rear	-	-

Your safety and the safety of those around you depends on using care and judgement when operating and servicing your grader. Do not operate the grader until you read and understand the warnings and instructions in the operator's manual. Volvo Motor Graders Limited is an ISO 9001 and 14001 registered company. www.volvo.com

Under our policy of continuous product development and improvement, we reserve the right to change specifications and design without prior notice. The illustrations do not necessarily show the standard version of the machine.

Consult your Volvo dealer for recommended option and attachment selection.



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