

Workstation lighting

The right lighting, adapted to the activity at the workstation, is a basic prerequisite for high efficiency and processing quality. Optimal lighting prevents fatigue, improves concentration, and performance, and reduces the number of errors.

In addition to climate, noise, mechanical vibrations, and hazardous substances, lighting is another environmental factor that must be taken into consideration.

Important aspects for planning workstation lighting include:

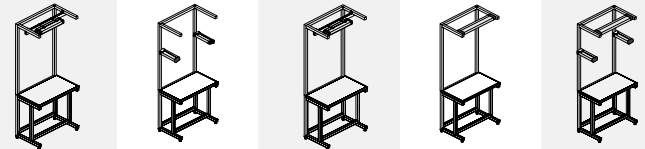
- ▶ Avoiding strong contrasts
- ▶ Avoiding glare and reflection

DIN EN 12464 or the table below contain the required mid-range lighting strengths.

The right Rexroth system light for every task

Sample calculation for work top lighting

Rexroth SL 78 (nominal lighting strength) with 681 lux
 (with lamp–table top distance = 1.25 m)
 + 300 lux ambient light
 = 800 lux work top lighting



Tasks	Required lighting strength (lux)	Rexroth SL 48	Rexroth SL 36 Duo/SL 15 LED Duo	Rexroth SL 20 LED	Rexroth SL 78/SL 30 LED	Rexroth SL 78 + SL 36 Duo/SL 30 LED + SL 15 LED Duo
Rough and medium machine and assembly tasks such as turning, milling and planning	300	■ ¹	■ ¹	■ ¹		
Fine machine tasks with permissible deviations	500	■■■■ ¹	■ ¹	■ ¹	■ ¹	
Fine assembly tasks, e.g., telephones, winding medium-sized coils, marking, inspection and measuring stations	750		■■■■ ¹	■■■■ ¹	■ ¹	■ ¹
Very fine assembly, e.g., measuring instruments, assembly of tools, gages, and equipment, precision mechanics and micromechanics	1000				■■■■ ¹	■ ¹
Assembly, inspection and adjustment of extremely small parts	1500					■■■■ ¹

¹ Distance between the table top and lamp: 1.25 m

- Lamp lighting strength sufficient for task
- Lamp lighting strength + ambient light (300 lux) sufficient for task

See technical data (page 199)

Rexroth's system lamp range provides glare and flicker-free light of the highest quality. You can operate the lamps as required for the job at hand either individually or in combination with one another.

This allows you to provide your workstations with uniform illumination of outstanding quality. The lamps can be switched on and off when plugged into a socket with a power switch.

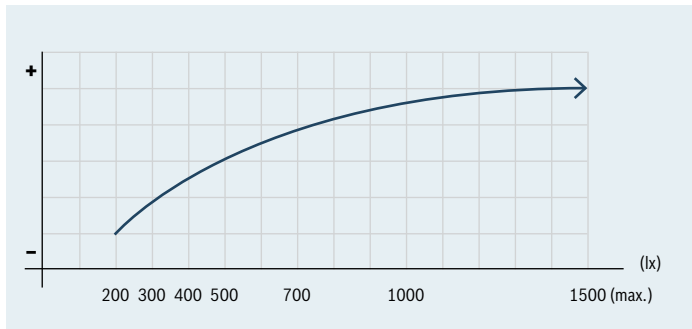
The lamps can be connected in series using the connection cables. The ready-to-use connection and mains cables allow you to install the lamps yourself without needing an electrician. The lamps are suitable for use at ESD workstations.

Lighting on a new level: LED system lamps

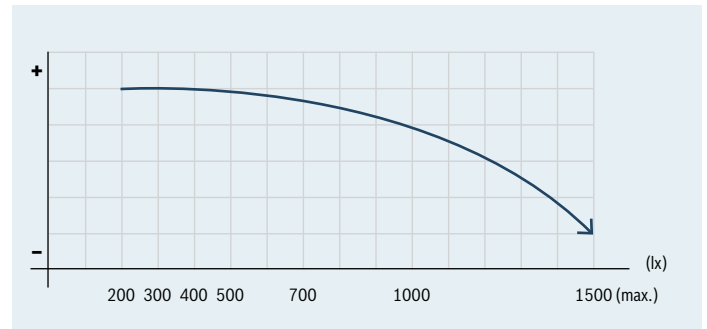
The design of the LED lamps sets itself apart by combining parabolic louvers and diffuser foil.

The use of LEDs for lighting makes possible low energy consumption, long life and maintenance-free lamps. Staff members can adjust the lighting strength that they need to match their age using a controller. Using this controller, it is possible to dim the lighting strength.

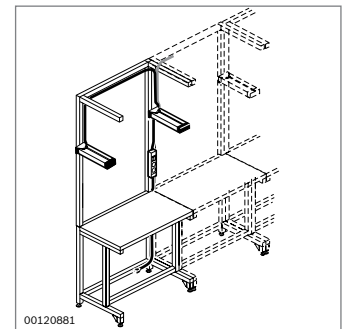
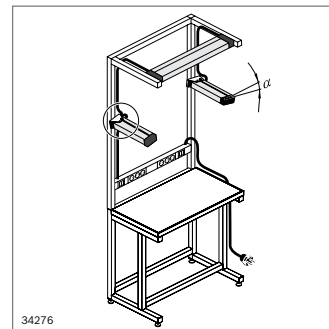
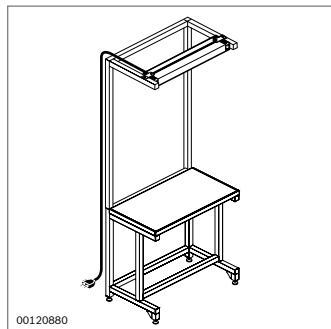
Increased efficiency with Rexroth system lamps



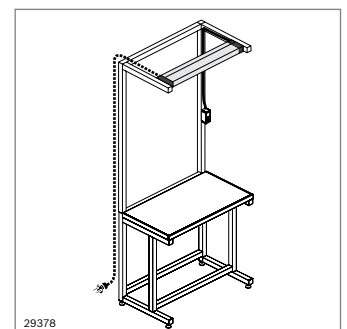
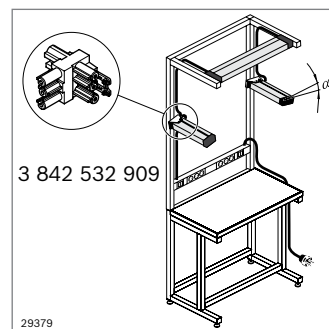
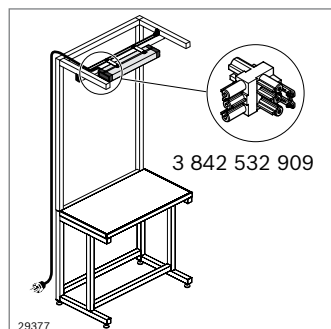
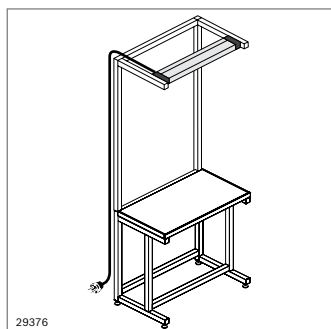
Reduction of errors with Rexroth system lamps

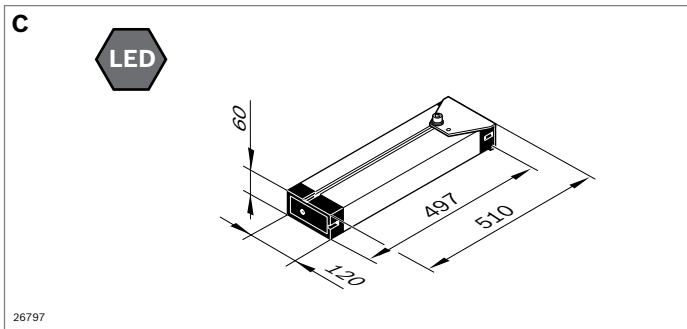
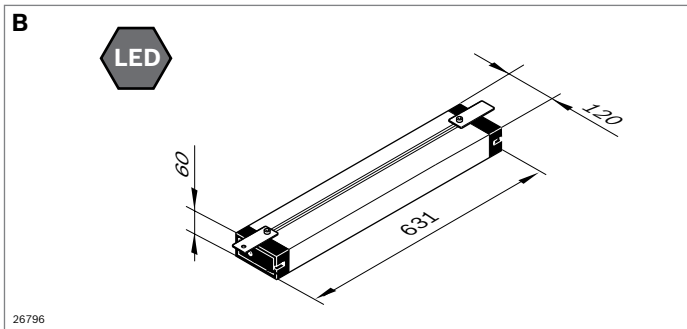
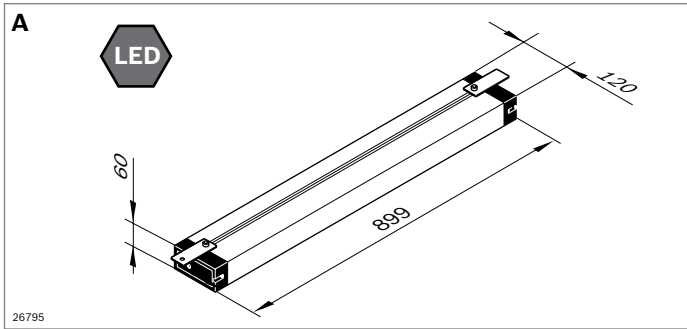


Fluorescent lamp with electronic lamp ballast



LED lamps (Fig. 4 including controller)





LED system lamps



- ▶ Glare-free light thanks to the combination of a parabolic louver and diffuser foil
- ▶ 60% energy savings compared to conventional workstation lighting
- ▶ Color temperature: 5000 K
- ▶ With GST connecting socket (black = 230 V; blue = dimming), 1–10 V interface
- ▶ Service life: EU: 60000 h, USA/CDN: 50000 h
- ▶ Suitable for use at ESD workstations
- ▶ SL 30 LED: Attached to a strut extension (workstations with B = 990 mm) or to a hanger (workstations with B ≠ 990 mm)
- ▶ SL 20 LED: Mounting to a hanger
- ▶ SL 15 LED: Mounting to the vertical strut or the strut extension

IP rating: IP 20 (DIN EN IEC 60529)

Housing material: Aluminum; anodized

Scope of delivery: includes fastening material (10 mm slot)

Required accessories: mains cable or connecting cable (see page 48)

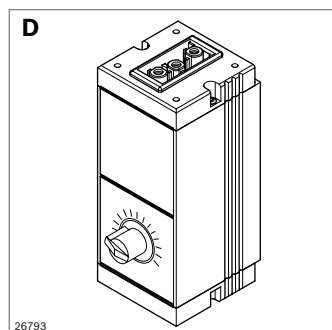
Recommended accessories: controller **(D)** (see page 44);

DIM **(E)** connecting cable (see page 44);

POWER H-distributor (230 V) **(F)** (see page 44)

		Fluorescent tubes	Service life (h)	Voltage (V)/ Frequency (Hz)	Weight (kg)	No.	
A	LED 30	EU ¹	LED/30 W	60000	220–240 V/50 Hz; 60 Hz	3.2	3 842 552 220
		USA/CDN ²	LED/30 W	50000	120–277 V/50 Hz; 60 Hz	3.2	3 842 555 626
B	LED 20	EU ¹	LED/20 W	60000	220–240 V/50 Hz; 60 Hz	2.4	3 842 552 222
		USA/CDN ²	LED/20 W	50000	120–277 V/50 Hz; 60 Hz	2.4	3 842 555 627
C	LED 15	EU ¹	LED/15 W	60000	220–240 V/50 Hz; 60 Hz	2.0	3 842 552 224
		USA/CDN ²	LED/15 W	50000	120–277 V/50 Hz; 60 Hz	2.0	3 842 555 628

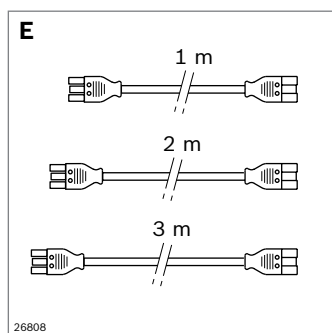
¹ VDE and ENEC test marks; ² UL, CSA and FCC test marks

**Controller (D)**

- ▶ By turning the rotary button, you can dim the lighting strength of the LED system lamps
- ▶ Multi-lamp dimming with a single controller available on request

Required accessories: DIM connecting cable (**E**)

		No.
D	Controller	3 842 552 226

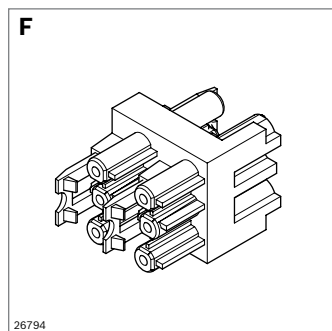
**DIM connecting cable (E)**

- ▶ For wiring the controller to the system lamps
- ▶ Secure plug-and-play installation available in different lengths

Plug color: blue

Cable color: black

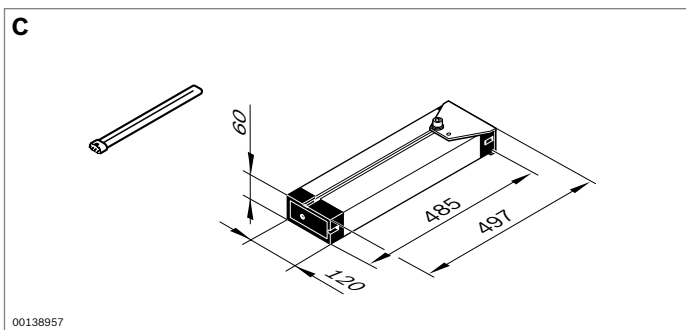
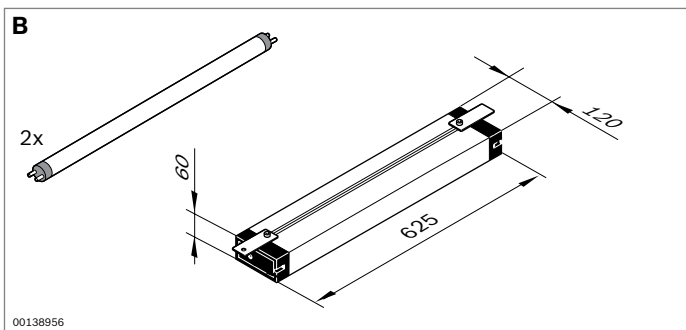
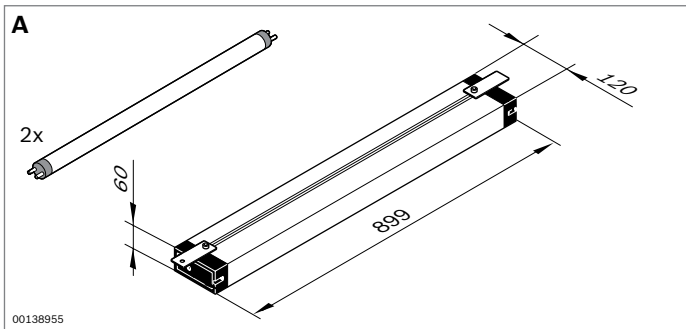
		L (m)		No.
E	DIM connecting cable	EU	1 1	3 842 553 139
		EU	2 1	3 842 553 140
		EU	3 1	3 842 553 141

**POWER H-distributor (230 V) (F)**

- ▶ For connecting up to three lamps to one mains connection
- ▶ Compatible with 40x40 or 45x45 cable duct (see MGE 13.2)

Color: Black

			No.
F	POWER H-distributor (230 V)	1	3 842 553 142



System lamps



Electronic

- ▶ Glare-free light of the highest quality (Quality Class A under DIN 5035-T2); color temperature: 4000 K
- ▶ With electronic lamp ballast for flicker-free light (> 25 kHz)
- ▶ With three GST outlet sockets for looping through the electrical current
- ▶ Very inexpensive to operate (low power consumption, long life)
- ▶ Low weight
- ▶ Suitable for use at ESD workstations
- ▶ SL 78 electronic: Attached to a strut extension (workstations with B = 990 mm) or to a hanger (workstations with B ≠ 990 mm)
- ▶ SL 48 electronic: Mounting to a hanger
- ▶ SL 36 electronic: Mounting to the vertical strut of the strut extension

IP rating: IP 20 (DIN EN IEC 60529)

Housing material: Aluminum; anodized

Scope of delivery: includes fluorescent tubes and insulating fastening material (10 mm slot)

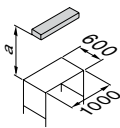
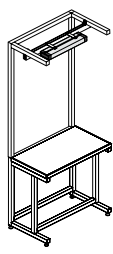
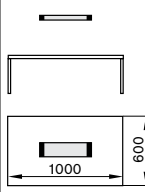
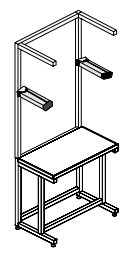
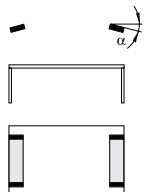
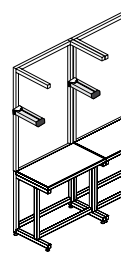
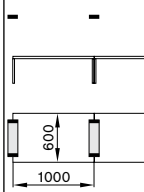
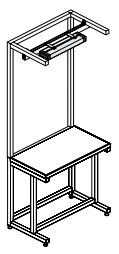
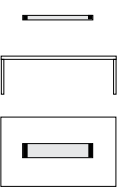
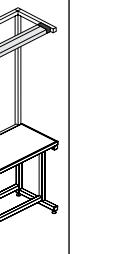
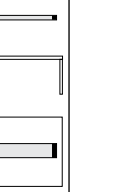
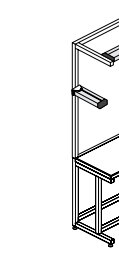
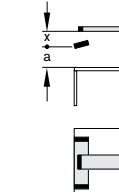
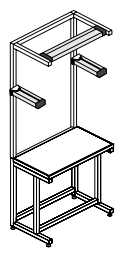
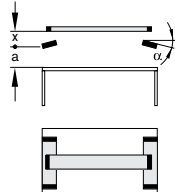
Required accessories: mains cable (see page 48) or, if necessary, connecting cable (see page 49)

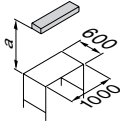
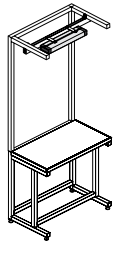
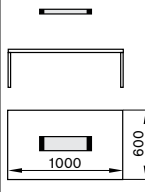
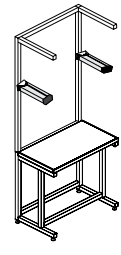
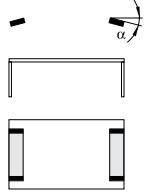
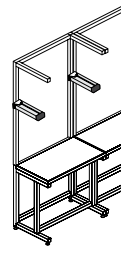
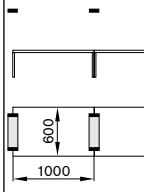
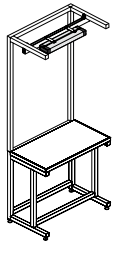
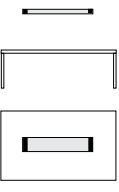
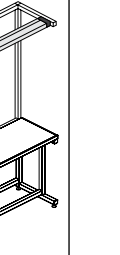
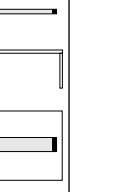
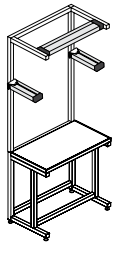
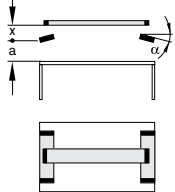
		Fluorescent tubes	Service life (h)	Voltage (V)/ Frequency (Hz)	Weight (kg)	No.
A SL 78 electronic	EU ¹	2x T5-L 39 W	18000	220–240 V/ 50 Hz; 60 Hz	2.8	3 842 537 343
	USA/CDN ²	2x T5-L 39 W	18000	120–277 V/ 50 Hz; 60 Hz	2.8	3 842 537 345
B SL 48 electronic	EU ¹	2x T5-L 24 W	18000	220–240 V/ 50 Hz; 60 Hz	2.3	3 842 537 347
	USA/CDN ²	2x T5-L 24 W	18000	120–277 V/ 50 Hz; 60 Hz	2.3	3 842 537 349
C SL 36 electronic	EU ¹	1x TC-L 36 W	18000	220–240 V/ 50 Hz; 60 Hz	1.6	3 842 516 713
	USA/CDN ²	1x TC-L 36 W	18000	120–277 V/ 50 Hz; 60 Hz	1.6	3 842 537 351

¹ VDE and ENEC test marks; ² UL, CSA and FCC test marks

SL + SL LED system lamps

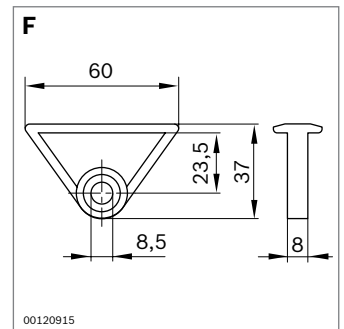
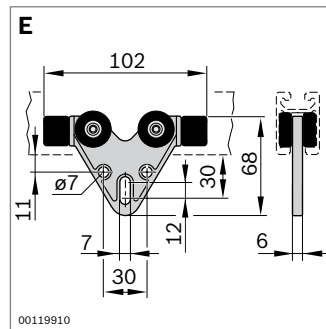
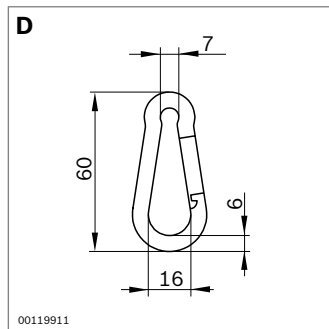
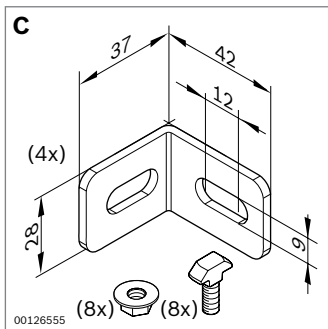
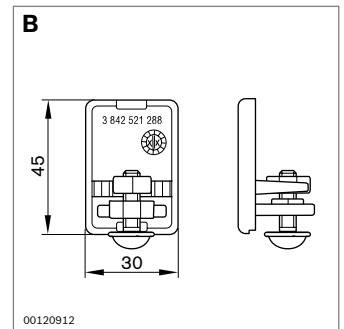
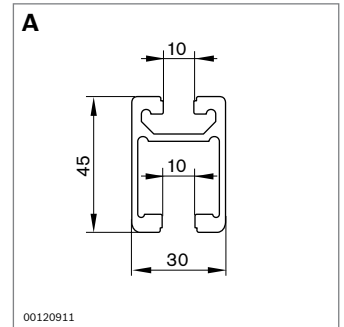
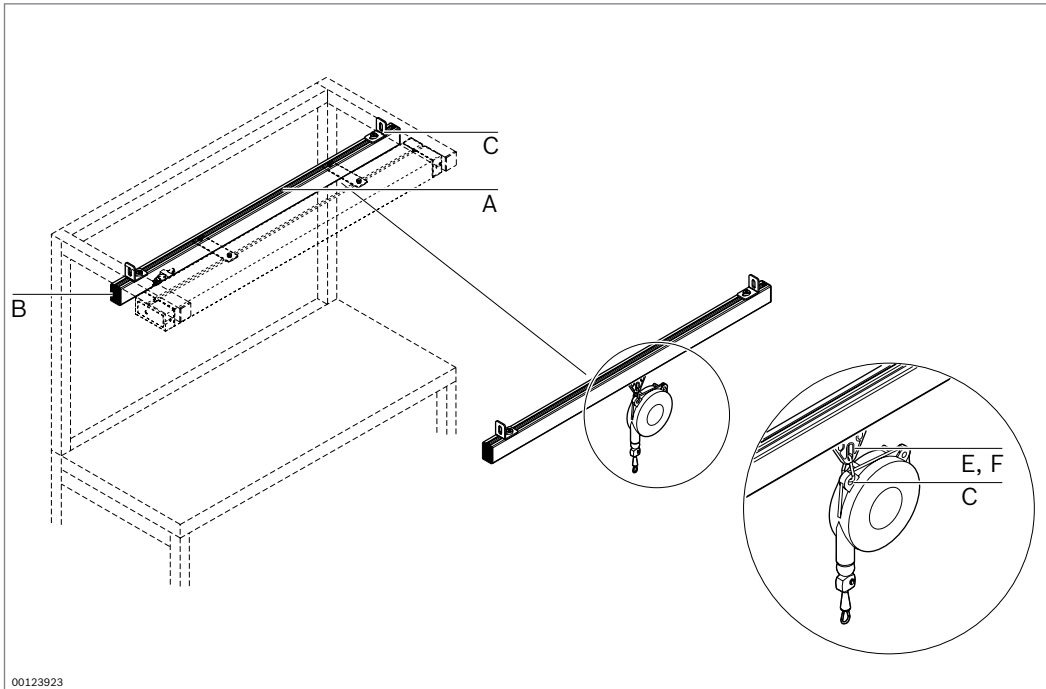
Lighting strength depending on arrangement

	SL 36	SL 36		SL 36	SL 48	SL 78	SL Tri-Light									
	 	 	 	 	 	 	 	a	E	α	E	E	E	E	x	α
(m)	(lx)	(°)	(lx)	(lx)	(lx)	(lx)	(m)	(°)	(lx)							
0.75	599				887											
1.00	394	20	642	589	584	958	0.25	20	1158							
							0.50	20	1020							
1.25	272	15	470	471	398	681	0.25	15	845							
1.50	196	15	353	385	281	501										
2.00						283										

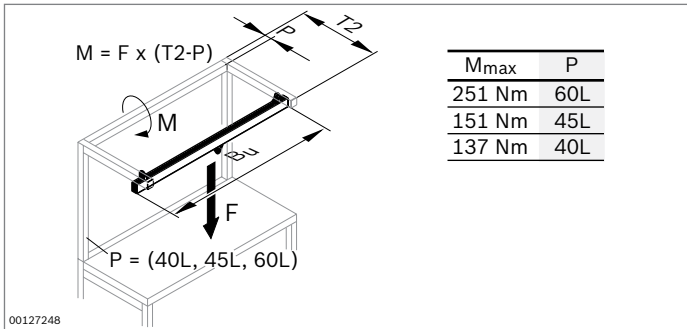
	SL 15 LED	SL 15 LED Duo		SL 15 LED	SL 20 LED	SL 30 LED	SL LED Tri-Light							
	 	 	 	 	 	 	a	E	α	E	E	E	x	α
(m)	(lx)	(°)	(lx)	(lx)	(lx)	(lx)	(m)	(°)	(lx)					
0.75	733				899									
1.00	476	20	786	721	625	1061	0.25	20	1406					
							0.50	20	1245					
1.25	331	15	470	561	436	747	0.25	15	1021					
1.50	242	15	394	446	319	550								
2.00						3300								

Mean \bar{E} of the lighting strength on the working surface (new values, planning factor 0.8)

Hanger assembly elements

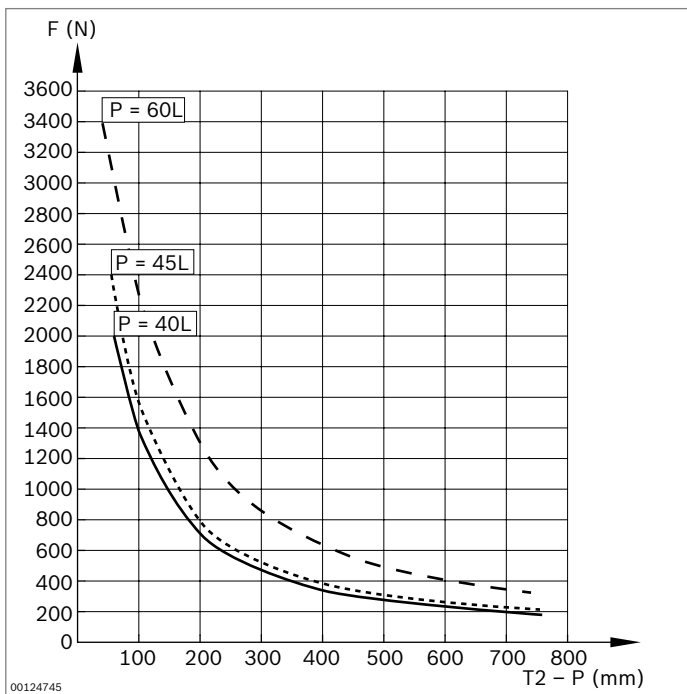


	L (mm)			No.
A 30x45C profile rail; material: aluminum; anodized	50 ... 5600	1		3 842 992 946/L
	5600	20		3 842 523 598
B 30x45C end piece; material: PA; black 30x45C end piece; material: PA; signal gray			20	3 842 554 711
			20	3 842 554 710
C M8 bracket set, incl. fastening material for 10 mm slot; material: steel; galvanized			Set	3 842 537 861
D Spring hook; material: steel; galvanized				0 842 901 309
E Trolley for 30x45C profile rail				3 842 521 510
F Slide hanger for profiles with 10 mm slot; material: POM				3 842 218 953



Workstation hanger

Without accessory upright, with accessory upright, with reinforced strut extension (see page 183)



Example for determining F_{max}

Determination of load for the strut extension:

- P = 45 mm
- T2 = 400 mm
- Diag. 2 → F = 380 N

Determination of load for hanger:

- B_U = 1000 mm
- Diag. 3 → F = 580 N

The maximum permissible load F_{max} is the lower of the two load values. F_{max} = 380 N

Diagram 2: Permissible load for the strut extension

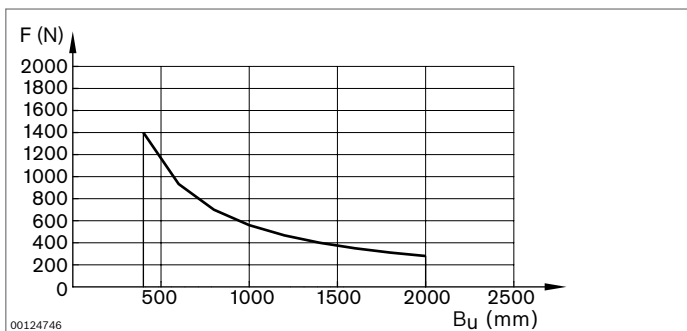


Diagram 3: Permissible load for the hanger