



USER'S MANUAL

SEARCHLIGHTS SH R50 BUS



NORSElight

Introduction

For more than 90 years, **Norselight** have designed and manufactured lighting products for marine vessels. Through ongoing customer focused product development, **Norselight** continue to deliver quality products as demanded both at sea and on the rugged coastlines as the Norwegian.

This commitment to quality and expertise provides the foundation for Norselight to be possibly the world's leading supplier of maritime lighting.

However, in order to stay in front, Norselight would very much appreciate all comments that you may have regarding our quality products or services.

Therefore, if you have any technical or other questions, **Norselight** would be pleased to assist. Our Technical Department can be contacted as follows:

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We would also like to use this opportunity to thank you for choosing **Norselight** as your supplier of marine searchlights.

Guaranty

The guarantee is only valid against production faults. It do not cover damage caused by transportation, damage due to disregard of this technical Manual or adverse external effects.

Norselight AS is a registered trade name.

Norselight AS reserves all rights to this document.

Norselight AS operates a policy of continuous development. On this basis we reserve the right to make changes and improvements to all of our products and documentation.

Technical Manual for searchlight

- ☐ SH 260 R50
- ☐ SH 310 R50
- ☐ SH 470 R50
- ☐ SH 480 R50

- ☐ 250W
- ☐ 500W
- ☐ 1000W
- ☐ 2000W
- ☐ 3000W

- ☐ 24V DC
- ☐ 115V AC
- ☐ 230V AC

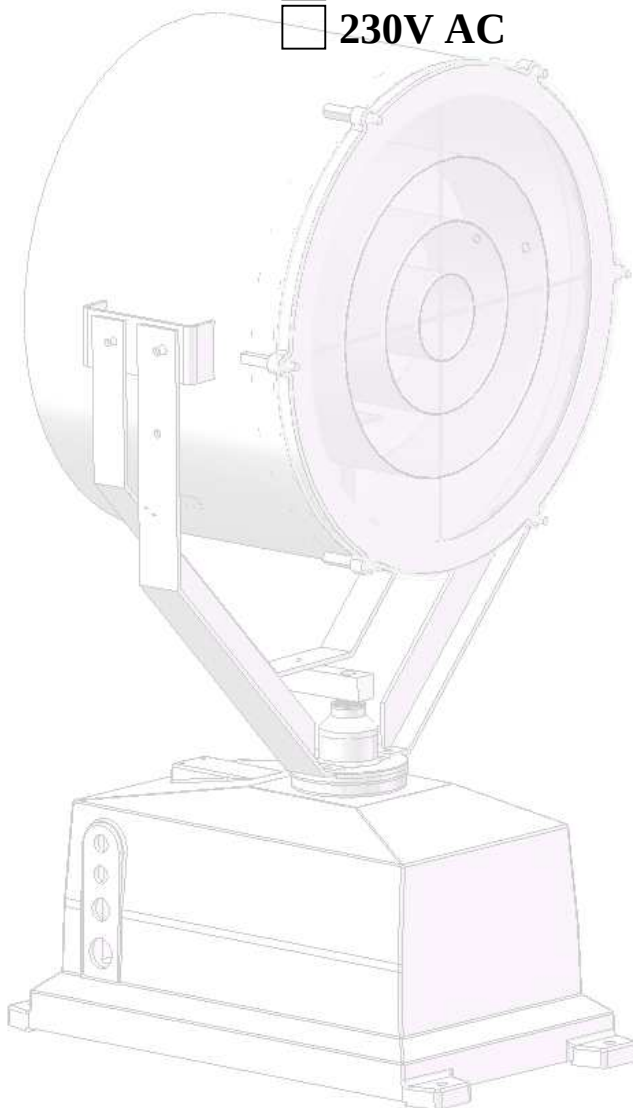


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1 General description

Searchlight

The searchlights are SH 260-310-470-480 R50 made from toughened glass, seawater resistant aluminium, welded and finished with white powder coat. The lamp housing basically contains a 250W, 500W, 1000W, 2000W or a 3000W lamp, a glass-reflector covered with silver coding and a focus-motor for adjustment of the Light beam.

The motor housing

The R50 motor housing is made from seawater resistant aluminium and finished with white powder coat. The motor housing basically contains one motor for vertical and another one for horizontal movement, a thermostat driven heating element and the electronic control system.

Control panels

Main Operation Panel

It contains the following functions:

- Ready for max. 2 Slave Operation Panels (option)
- BUS communication.
- Lamp ON/OFF
- Joystick for sweep and tilt, horizontal and vertical movement.
- Speed regulator for sweep and tilt.
- Focus +/- (light beam adjustment)
- LED Indication for searchlight position 360°.
- Searchlight ID-number
- End position function
- Designed for console or bulkhead mounting from front.
- DIM LED intensity on Main Operation Panel

Slave Operation Panel (Option)

It contains:

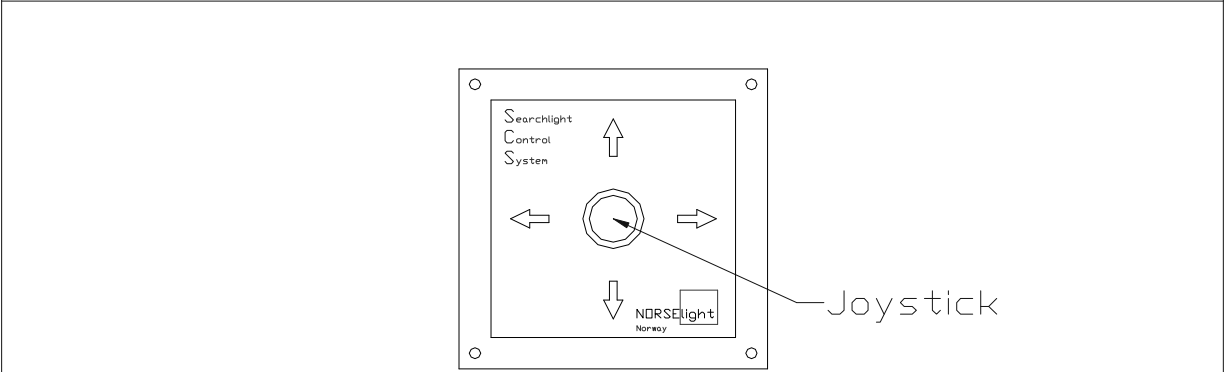
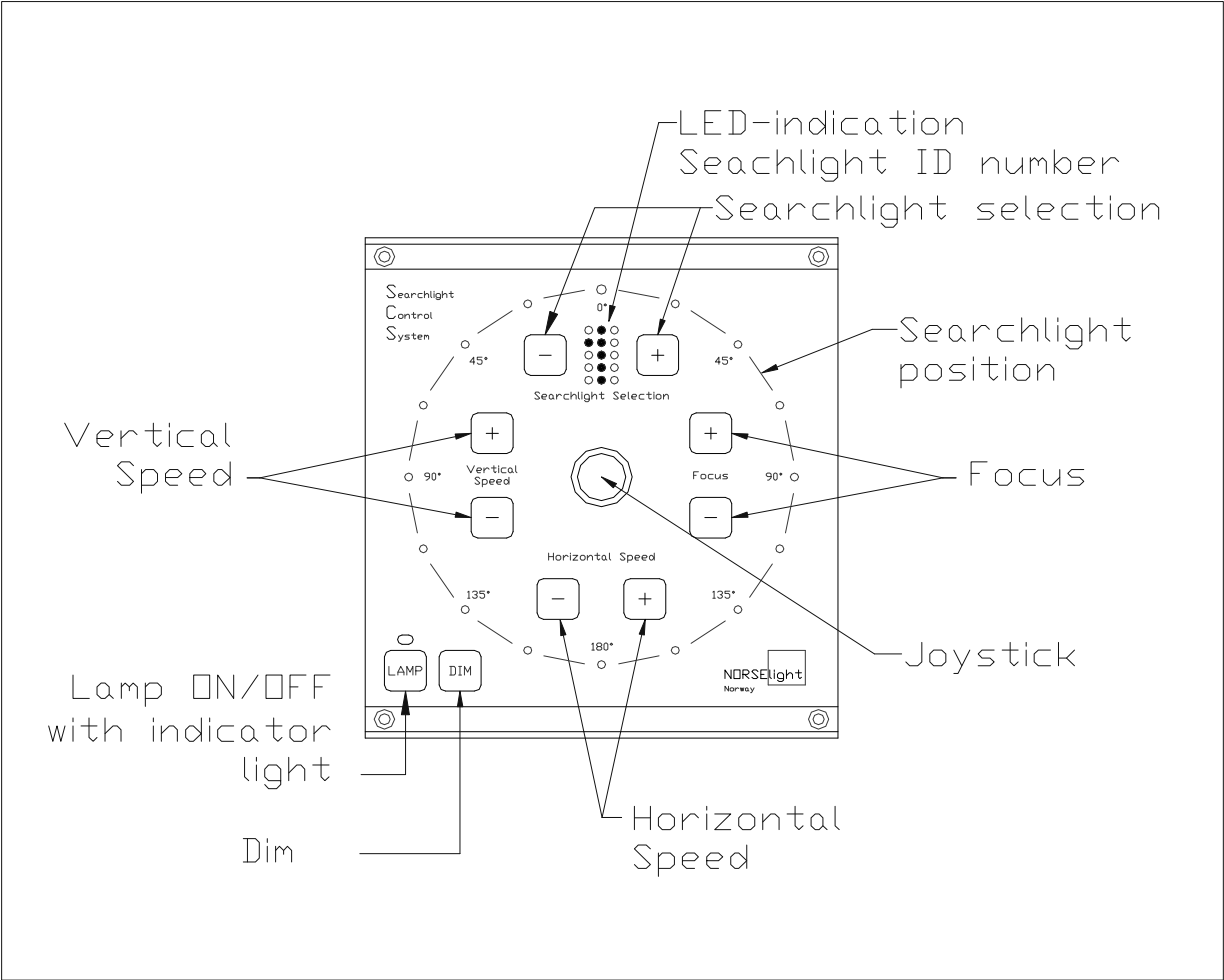
- Joystick
- Designed for console or bulkhead mounting from front.

Wireless Operation Panel (Option)

It contains:

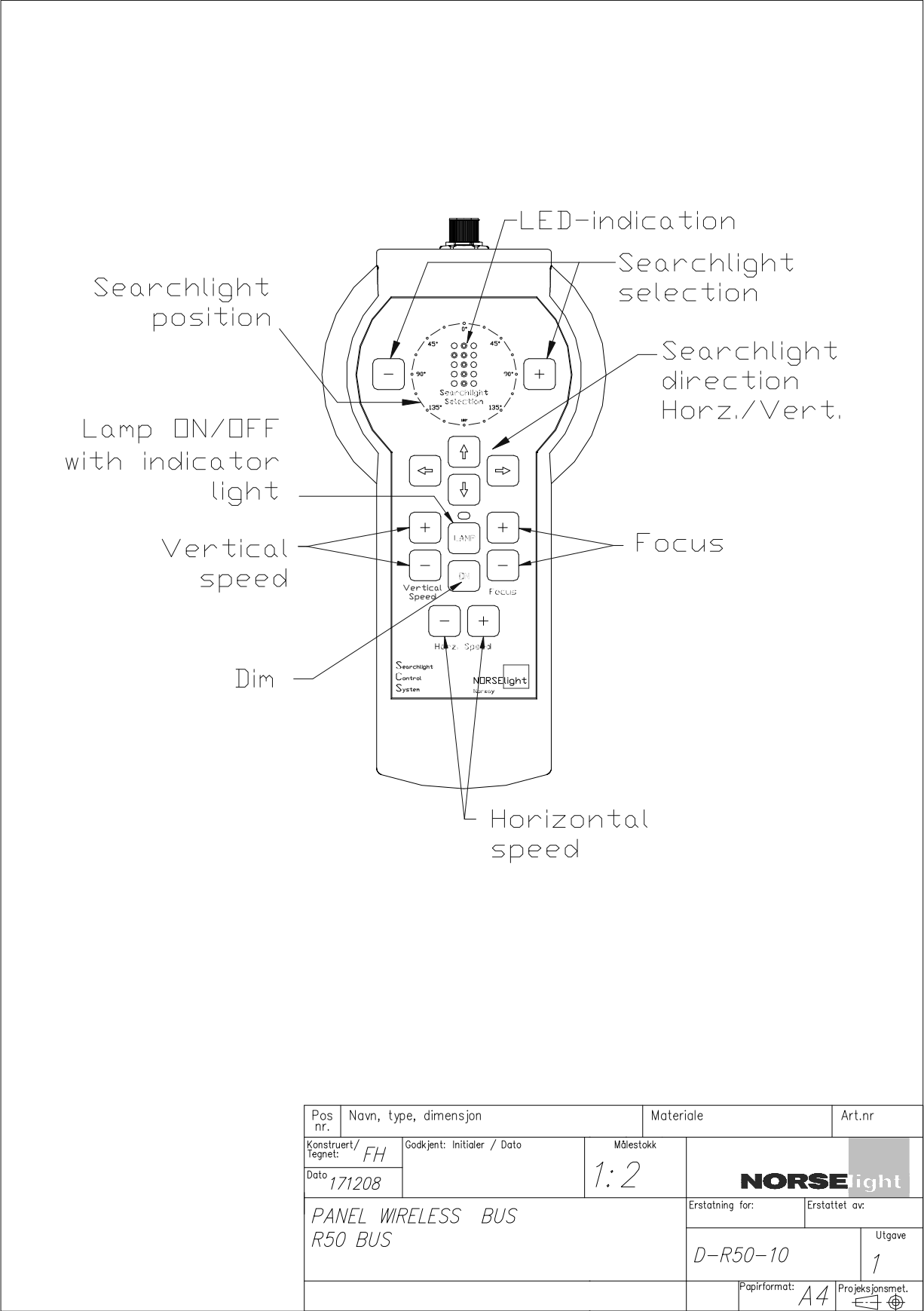
- On/Off Button
- Lamp ON/OFF
- Touch buttons for sweep and tilt, horizontal and vertical movement.
- Speed regulator for sweep and tilt.
- Focus +/- (light beam adjustment)
- LED Indication for searchlight position 360°.
- Searchlight ID-number
- End position function
- Battery charger

Main and Slave Operation Panel



Pos nr.	Navn, type, dimensjon		Materiale		Art.nr
Konstruert/ Tegnet: FH	Godkjent: Initialer / Dato		Målestokk	NORSElight	
Dato 171208			1:2		
PANEL MAIN BUS and PANEL SLAVE BUS R50 BUS			Erstatning for:		Erstattet av:
			D-R50-09		Utgave 2
			Papirformat: A4	Prosjeksjonsmet. 	

Wireless Operation Panel



The Ethernet Switch:

It contains:

- 5 port x RJ45
- DIN rail mounting

High Sensitive Receiver:

The Access Point is a high sensitive receiver for the wireless panel build for maximum range and durability. The Access Point communicate with the wireless bus, which remotely controls the searchlights with R50 motor unit. The control system is based on TCP/IP technology where several different Operator Panel can control separately up to 9 searchlights of Xenon or Halogen. The system is connected to the same network through LAN switch to connect to a network of searchlights. Control panels both hard wired and wireless, are fitted into a standard solution.

Features and Benefits:

- Wireless receiver for SCS wireless Bus
- Bolt-on to Norselight's network of searchlights
- Die-Cast Aluminium, Compact and new design
- Based on TCP/IP technology
- Waterproof, quick disconnect RJ-45 connector
- Custom made for Offshore
- Supports masts up to 3" diameter
- 200m Area wireless coverage
- IP67, RoHs, FCC, CE, IC Complaint
- -45 to +65 degree operation temperature

Package Include:

- 1x Wireless receiver unit
- 1x PoE Power supply
- 1x 5dBi wireless antenna
- 1x USB recovery stick
- (Network cables, not included)



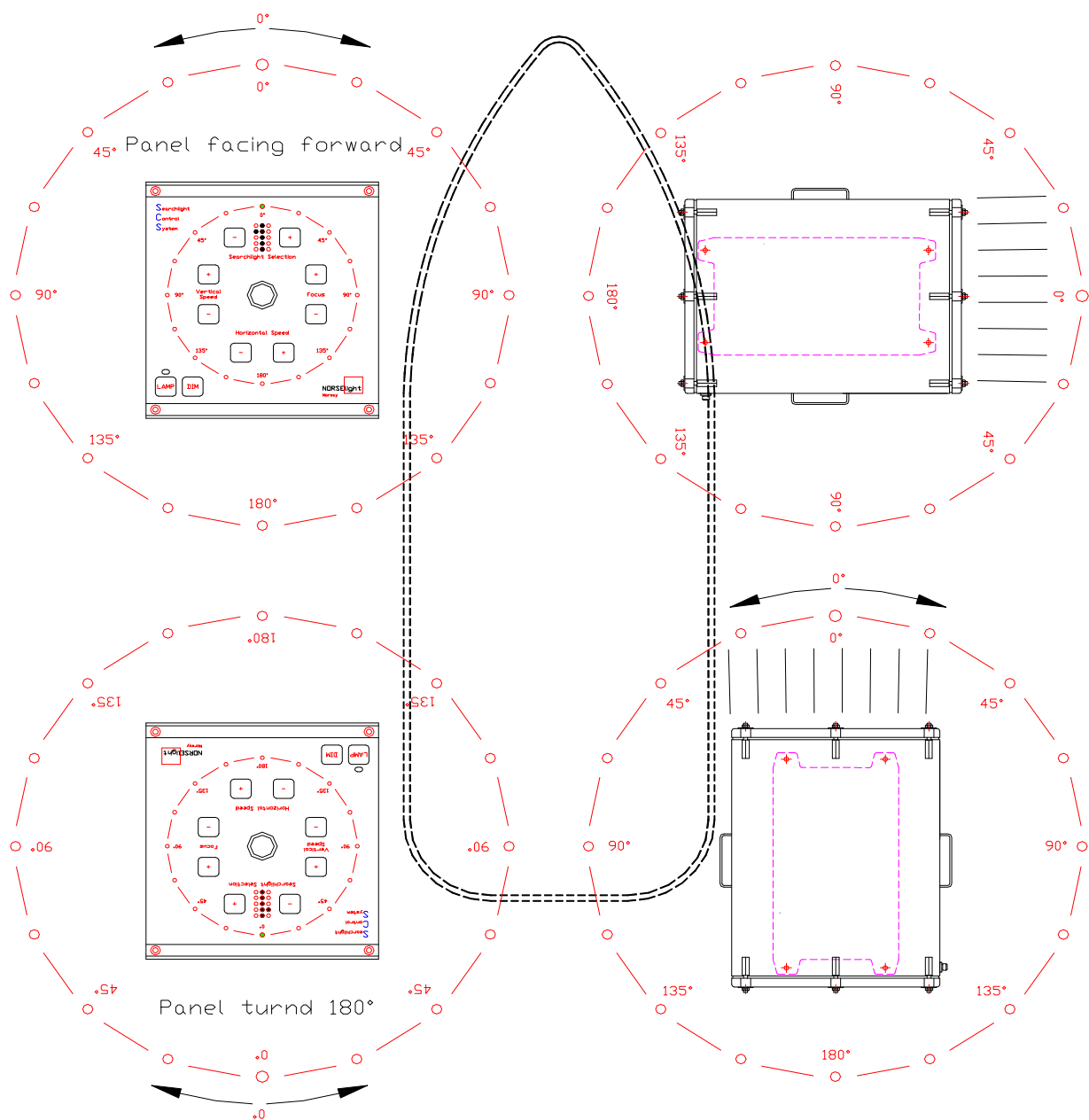
Main Control Panel position indicator versus searchlight position:

In accordance to MSC/Circ. 982 Pos 5.5.1 "Movement of Controllers" and 5.5.2 "Corresponding Movements"

The position indicator on the Main Control Panel indicates the position of the searchlight. 0° position on the panel indicates that the searchlight is positioned straight forward compared to the searchlight 0° position.

The searchlight has an 180° movement to the left and right end position, in total 360°.

To calibrate the position indicator, you simply use the joystick on the Main Control Panel to turn the searchlight to end stop to both left and right end position.



2 Technical data

Halogen Searchlight

Properties		Value								
Searchlight		SH 260	SH 310			SH 470		SH 480		
Dimension:	Height:	835 mm	890 mm			1420 mm				
	Width:	430 mm	470 mm			615 mm				
Weight on searchlight:		35,5 kg	36,5 kg			45,5 kg		49,5 kg		
Weight on SCS panel:		0,5 kg								
Power supply		24V DC			115V/230V AC					
Vertical movement:	Speed:	1-10°/sec								
	Range:	+25° /-30°								
Horizontal movement:	Speed:	1-20°/sec								
	Range:	± 180°								
Lamp type		250W	500W	1000W		2000W		3000W		
Rated Lamp voltage		24V DC			115V	230V	115V	230V	115V	230V
Rated Lamp current		10,4A	20,8A	8,7A	4,3A	17,4A	8,7A	26,1A	13A	
Lifetime, appr.		300h			750h		400h			
Luminous flux		6400 lm	12000 lm	27 500 lm		52 000 lm		82 000 lm		
Focal distance		50.8 mm(2")	88.9mm	120,6 mm		127 mm				
Divergence:		7.6°	5,8°	11°		10,8°		8°		
Range at 1 lux:		2454 m	2063 m	1540 m		2366 m		2100 m		
Parabolic silver plated glass reflector		dia: 10 1/4" (260mm)	dia: 12" (305mm)			dia: 18" (457mm)				
Drum and motor housing material		Seawater resistant aluminium 5052								
Fork and lifting rod material		Stainless steel SIS AISI 304								
Screw joint material		Stainless steel A4								
Surface treatment		White powder coated (RAL 9016)								
Protection class		IP 56								

Main Operation Panel

Standard	IEC 60945 Ed4 (2002-08)
Number of panels	Standard max 9 pcs in one system
Network	Star and Tree network topology.
Interface	RJ45 port 10/100 LAN cable CAT5e - CAT7 twisted (568b)
Power Requirements	Power input: 24VDC (18-30VDC) Power consumption: <3.5W
Physical Characteristics	Casing: IP22 protection Dimensions(WxHxD): 147x160x43,4 mm (5.8x6.3x1.7 in) Weight: 500g (1.1 pound) Installation: Table mounting from front
Environmental Limits	Operating Temperature: -15 to 50°C(5 to 120°F) Ambient Relative Humidity: 0 to 95% (non-condensing)
Compass Safe distance	Standard: 40 cm Steering: 30 cm
Cerificates	DNV

Slave Operation Panel

Standard	IEC 60945 Ed4 (2002-08)
Number of panels	Standard max 2 pcs to each Main Operation Panel
Network	Direct connection to Main Operation Panel.
Interface	Phoenix he/she connector 3,81 pitch Cable 5 wire + shielded, connected 1 to 1
Power Requirements	N/A
Physical Characteristics	Casing: IP22 protection Dimensions(WxHxD): 96x96x25 mm (3.78x3.78x0.98 in) Weight: 100g (0.22 pound) Installation: Table mounting from front
Environmental Limits	Operating Temperature: -15 to 50°C(5 to 120°F) Ambient Relative Humidity: 0 to 95% (non-condensing)
Compass Safe distance	Standard: 45 cm Steering: 35 cm
Cerificates	DNV

Wireless Operation Panel

Tested according to	IEC 60945 Ed4 (2002-08) IEC 60092-101, -504 IEC 60068-2-1, -2-2, -2-30
Network	Wireless connection through Access Point
Interface	Standard: IEEE 802.11b ☐ Frequency: 2.4 GHz ☐ Data Rate: Up to 11 Mbps with automatic fallback ☐ Modulation: CCK (11/5 Mbps), DQPSK (2 Mbps), DBPSK (1Mbps) ☐ Transmit Power: 16 dBm typical ☐ Receive sensitivity: – 1Mbps: -92 dBm – 2Mbps: -89 dBm – 5.5Mbps: -87 dBm – 11Mbps: -82 dBm ☐ Antenna Connector: 1 x RP-SMA
Power Requirements	Battery: 4,8V (4 celle's) 1650mAh NiMh Charger: 230 VAC, 70-150mAh, 3-10 celle's, NiCd/NimH
Physical Characteristics	Casing: IP65 protection Dimensions(WxHxD): 117x228x46,24 mm (4.6x8.97x1.82 in) Weight: 500g (1.1 pound)
Environmental Limits	Operating Temperature: -25 to 70°C(-13 to 158°F) Ambient Relative Humidity: 0 to 95% (non-condensing)
Compass Safe Distance	Standard: 35 cm Steering: 25 cm

Swiith, KIEN1005

Standard	IEEE802.3 IEEE802.3u IEEE802.3x IEEE802.1p Store and forward switching mode
MAC Address Table Size	32K
Network	Chain and star network topology.
Service	Diagnostics: LEDs(power, link status, port rate,) Port priority: QoS for 5th port (default high priority) Current over-load protection: Yes(AC220V) Reverse polarity power connection protection: Yes Broadcast storm protection: Yes
Interface	RJ45 port 5x10/100Base-TX(KIEN1005-5T) RJ45 port 4x10/100Base-TX and Fiber port 1x100Base-FX (KIEN1005-1S(M)-4T)
Power Requirements	Power input: 24VDC (12-36VDC), 220VDC/AC Power consumption: <3.5W
Physical Characteristics	Casing: IP40 protection Fanless design Dimensions(WxHxD): 36.5x120x90 mm (1.44x4.72x3.54 in) Weight: 300g (0.66 pound) Installation: DIN-Rail or wall mounting
Environmental Limits	Operating Temperature: -40 to 85°C(-40 to 185°F) Storage Temperature: -40 to 85°C(-40 to 185°F) Ambient Relative Humidity: 0 to 95% (non-condensing)
Approvals	IEC61000-4-2(ESD): ±8KV contact discharge, ±1.5KV air discharge IEC61000-4-3(RS): 10V/M (80-1000MHz) IEC61000-4-4(EFT): ±4KV power line, ±2KV data line IEC61000-4-5(Surge): power line ±4KV CM/ ±2KV DM, data line ±2KV IEC61000-4-6(CS):3V(10KHZ-150KHZ), 10V(150KHz-80MHz) IEC61000-4-8(Power frequency magnetic field):100A/m cont. 1000A/m, 1s to 3s
Cerificates	DNV,CE, FCC, UL, RoHS

Access Point, High Sensitive Receiver for Wireless Operation Panel

REGULATORY/ COMPLIANCE INFORMATION

Wireless Approvals	FCC, IC, CE
RoHs Compliance	Yes
IP/NEMA Compliance	IP67/ NEMA 6

DIAMETER RANGE PERFORMANCE

11Mbps	200m
5.5Mbps	400m
2Mbps	800m
1Mbps	1600m

RADIO OPERATING

Frequency	2412-2464 MHz
TX Power	15dBm (20dBm EIRP including Antenna)
RX Sensitivity	-90dBm @ 11Mbps

ANTENNA SPECIFICATION

Gain	5dBi Omni directional
Frequency	2400-2485 MHz
Vertical/horizontal BW	25x360 degree
Weight	0.5lbs (0.2Kg)
Dimension	355x15mm

PHYSICAL / ELECTRICAL / ENVIRONMENTAL

Enclosure Size	185x130x50mm
Mounting	Supports masts up to 3" diameter
Weight	1.50kg
Enclosure Characteristics	Solid Die cast aluminium
Operating Temperature	-45C to +65C

3 Installation

Mechanical installation

- The searchlight must be mounted on a horizontal surface using 4 stainless screws.
- The Main/Slave Operation Panel and the Switch is designed for installation in indoor applications.
- The Access Point is designed for out side installation.

Electric installation

- The Main Operation Panel requires 24V DC connected in series with a 1A fuse to the positive (+) conductor.
- The Switch requires 24V DC. In addition to grounding
- Depending on The Searchlight model, it requires 24VDC, 115VAC or 230VAC.

Note: Disconnect the power when working on the equipment!
 Electrical equipment must be installed by authorised personnel!
 Check the polarity when connection of 24VDC!
 All Searchlight system equipment MUST BE connected to ground/earth!

BUS installation

- The BUS communication system requires minimum LAN CAT5e, 4 pair shielded twisted pair cable.
- All connection entries need RJ45 connector using T-568B cable standard.
- Make sure that all cable entries maintain their shield protection.

Note: Follow the installation requirements from your cable supplier!
 Avoid brakeage on the Ethernet connectors (panel, switch and searchlight COM-module)!

Start up procedure

- Powering up. By powering up the SCS R50 Searchlight system, the panel indicate splashing figure in LED display of the Operating Panel. The system starts to search for all units connected to the system. After few seconds a specific number of the searchlight in contact, will appear in the LED display.
- Position Calibration Turn the searchlight to Starboard side by using the Joystick turning non stop until T appears in LED-indication of the Main Operation Panel. Then turn to Port side non stop to the end position until T appears in LED-indication. Now the searchlight position indication will follow the movement of the searchlight 360°.

4 Operation

Operation Panels function

LED-indication display:

- Searchlight number in use
- Indication level of Dim-light intensity.
- Indication level on vertical and horizontal speed.
- End stop indication **T** $\pm 180^\circ$
- Alarm indication **A**, when stop occurs before end stop.

Searchlight selection:

- Allow you to choose the searchlight you want to use, if there is more than one searchlight available. Allow max. 9 searchlights to use.
- By pushing the $\pm$ button, you select up/down from searchlight no. 1 to 9.

Searchlight position:

- Indicate what position the searchlight is pointing towards (360°).

Focus:

- Adjustment of the light beam.
 - o Focus +: Narrow beam
 - o Focus -: Wide beam

Vertical speed:

- Adjusts the motor speed vertically in the range from 1 to 15 (indicated in LED display).

Horizontal speed:

- Adjusts the motor speed horizontally in the range from 1 to 15 (indicated in LED display).

Lamp:

- LAMP: Lamp on/off function. Green LED for lamp ON.

Dim:

- Adjusts the intensity of the backlight in the panel, indicated in LED-indication display.

Joystick (Searchlight direction Horizontal/Vertical):

- Allow the searchlight to move up, down or diagonal.

Change of lamp

The lamp should be replaced as soon as it reaches the end of its life to avoid damage to the ballast and radio interference. As a general rule, the lamp has reached the end of its life when:

- it no longer ignites or
- there is a marked change in the colour appearance or
- there is a marked loss of output or it periodically extinguishes and re-ignites.

Note: If the lamp is not removed when these symptoms appears, it might cause damaging of other components.

USE eyeprotection!

Procedure:

1. Cut the main power to the searchlight.
2. Before replacing the lamp, disconnect the luminaire from the power supply.
3. Make sure the lamp has cooled down, before opening the lamphouse (approx. 10 min).
4. To replace an old lamp, first disconnect the cable lugs and then remove the ceramic stop. The lamp can then be removed.
5. Install the lamp in reverse order. Hold the new lamp only in by its ceramic surfaces or power supply leads.

Note: Do not touch the bulb with bare hands or anything greasy!

Be careful not to damaged any parts.

If the bulb is dirty the quartz surfaces should be cleaned with a soft cloth soaked in spirit. Do not scratch the bulb or place it where it can be in touch with water as there is a danger that it will explode.

General Searchlight Maintenance

Performed at intervals not exceeding 6 months:

- Control of all gaskets and cable glands.
- Control of all screw and nut connections.
- Check lampholder with contact points.
- Reflector and front glass to be cleaned with a soft cloth and alcohol.
- Tighten all terminals strips in the searchlight junctionbox.
- Check the level of grease an refill when needed in glider for lamp holder.
- Check the level of grease and refill when needed underneath the VS120 gasket on the top of the motorhousing.

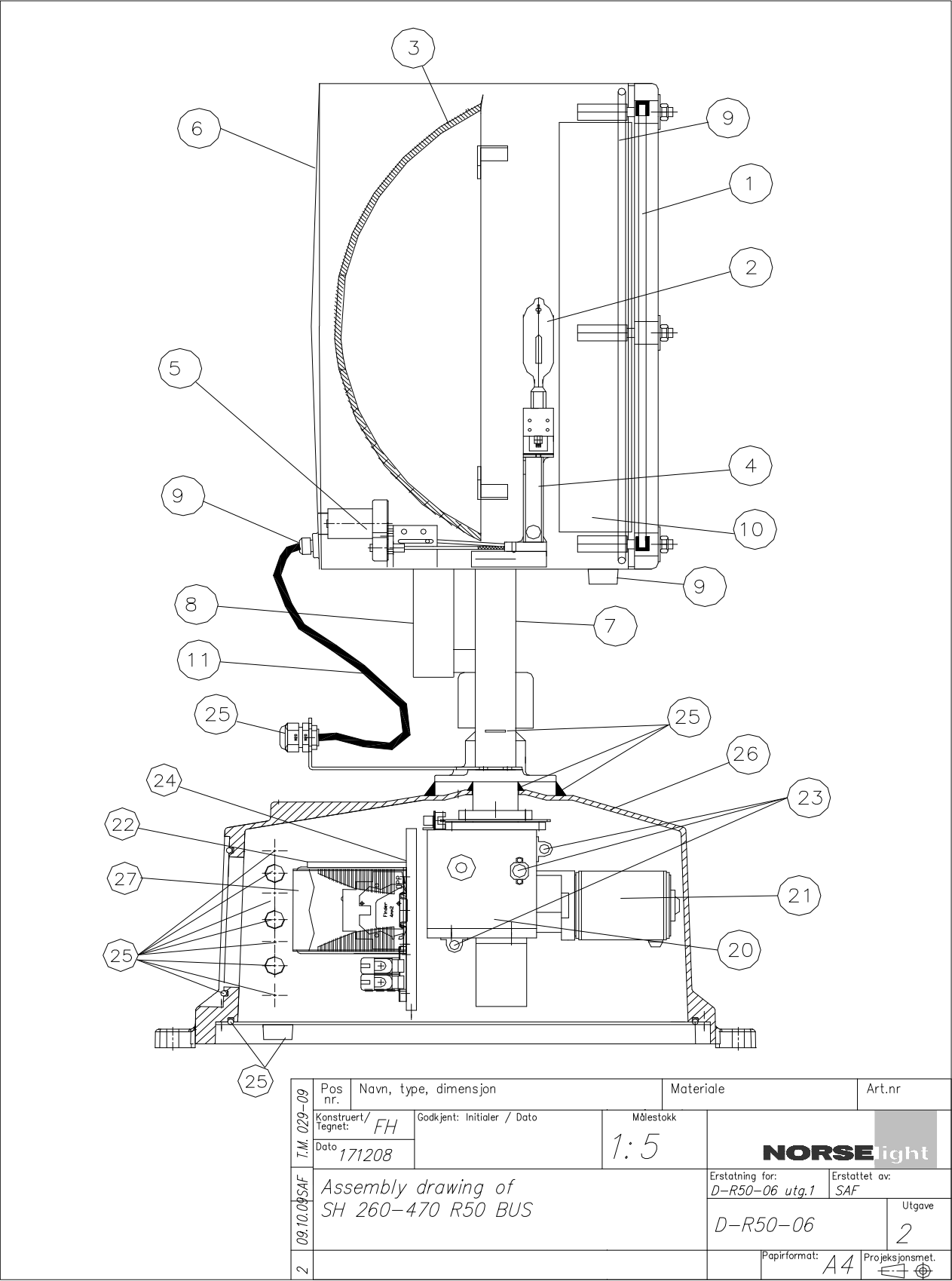
5 Spare Parts list

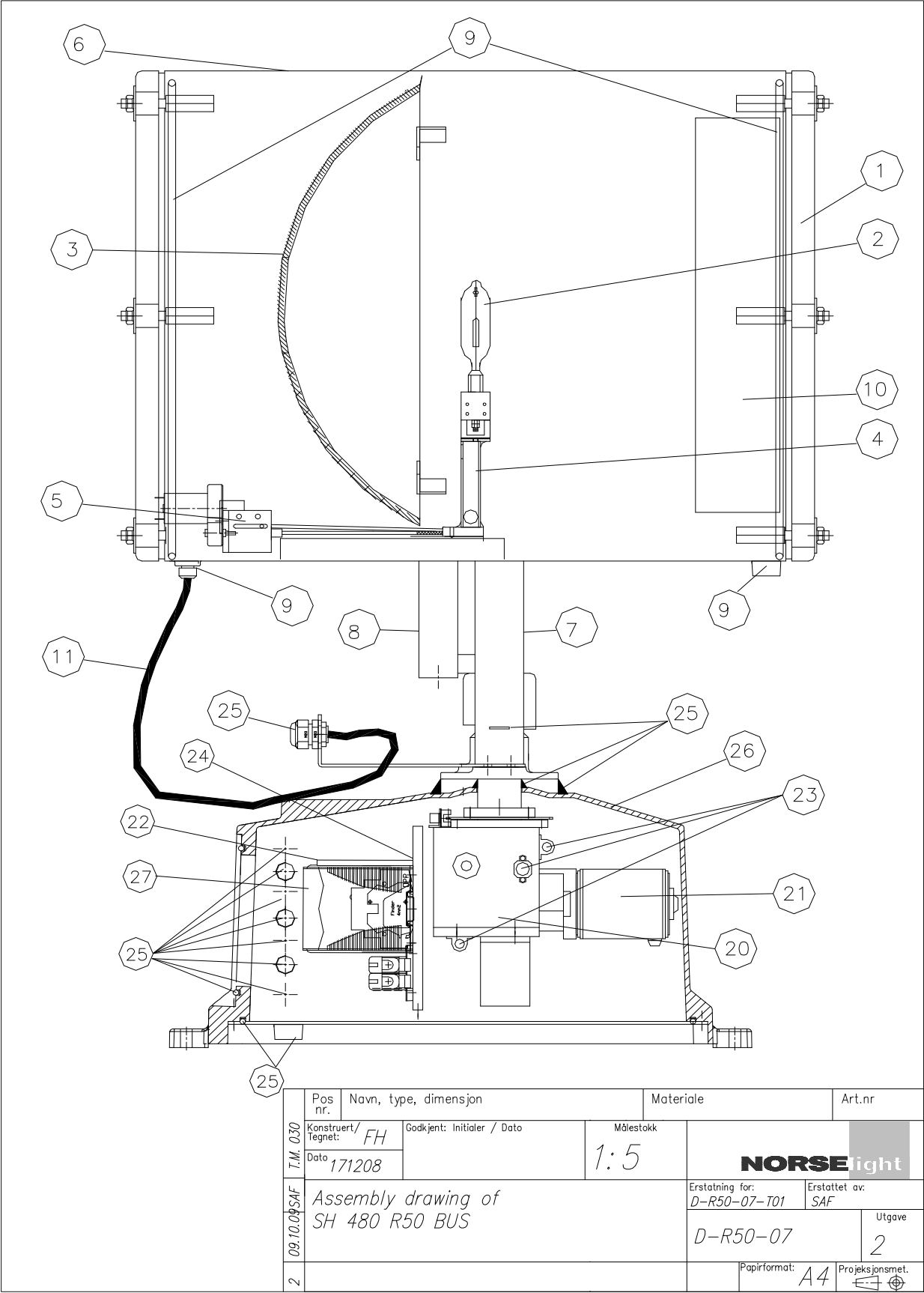
OR = On Request, N/A = Not Available

Pos	Spare KIT Halogen R50	SH260	SH310	SH470	SH480
1	Front Ring complete	1009174	1009175	1009149	
2	Lamp 24V 250W	1009206	N/A	N/A	N/A
2	Lamp 24V 500W	1009309		N/A	N/A
2	Lamp 115V 1000W	N/A	1009310		N/A
2	Lamp 115V 2000W	N/A	N/A	1009311	N/A
2	Lamp 230V 1000W	N/A	1009203		N/A
2	Lamp 230V 2000W	N/A	N/A	1009202	N/A
2	Lamp 230V 3000W	N/A	N/A	N/A	1009208
3	Reflector complete	1009176	1009177	1009108	
4	Lamp Holder Complete w/focus 24V/250W	1009112	1009138	N/A	N/A
4	Lamp Holder Complete w/focus 24V/500W	N/A	1009195	N/A	N/A
4	Lamp Holder Complete w/focus 115V/1000W	N/A	OR	OR	N/A
4	Lamp Holder Complete w/focus 230V/1000W	N/A	OR	1009181	N/A
4	Lamp Holder Complete w/focus 115V/2000W	N/A	N/A	1009130	N/A
4	Lamp Holder Complete w/focus 230V/2000W	N/A	N/A	1009109	N/A
4	Lamp Holder Complete w/focus 230V/3000W	N/A	N/A	N/A	1009194
5	Focus unit Complete	1009148			
6	Drum complete 24V	1009264	1009265	N/A	N/A
6	Drum complete 115V	N/A	1009219	1009220	1009216
6	Drum complete 230V	N/A	1009217	1009306	1009297
7	Forks	1009316	1009421	1009313	
8	Manouver Fork	1009379	1009380	1009381	1009382
9	Seal KIT, Drum	1009274	1009275	1009277	1009278
10	Antidazzling screen Complete	1009132		1009133	
11	Cable kit, drum	OR	OR	OR	OR

Spare Parts SH 260-470 R50 BUS

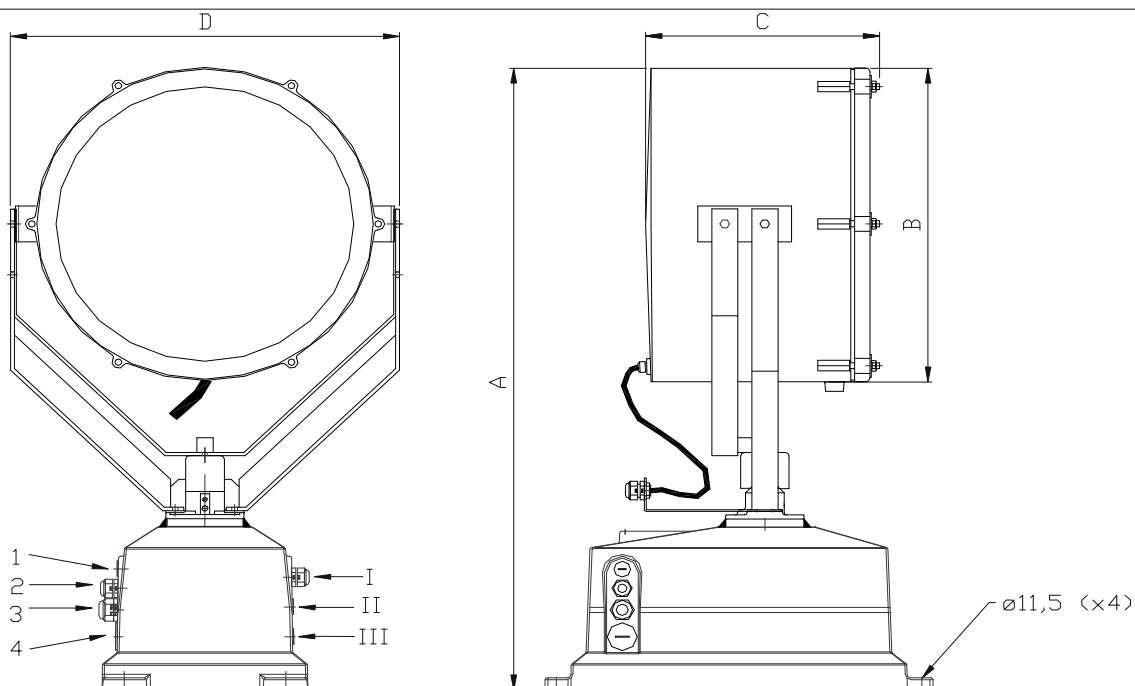
Pos	Spare KIT Halogen R50	SH260	SH310	SH470	SH480
20	Gear Complete 24V/ 115V/ 230V	1009288			
21	Motor Hor/Vert	1009224			
22	Heat Element Gear 24V/ 115V/ 230V	1009234/1009233/1009232			
23	MDC complete	1009377			
24	Powermodule R50, complete 24V	OR	OR	N/A	N/A
24	Powermodule R50, complete 115/230V	N/A	OR	OR	OR
25	Seal KIT, Motor house	1009375			
26	Motorhouse, complete	OR	OR	OR	OR
27	Power supply, motor house 115/230V	3009009			



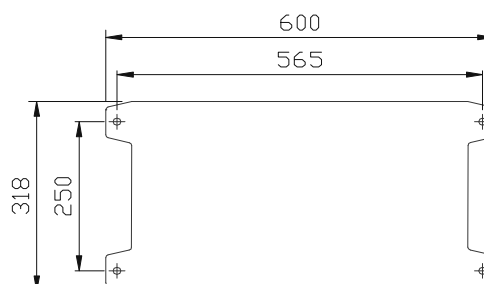


6 Drawings

Mechanical Dimensions SH 260 to 470 R50



DATA TYPE	A	B	C	D
SH 260 R50	835	330	260	423
SH 310 R50	890	380	330	470
SH 370 R50	930	425	360	515
SH 470 R50	1040	525,5	360	615



Entry #	I	II	III	1	2	3	4
Description							
Cable Gland	M20	M20	M20	M20	M20	M25	M32
Cable Ø min/max	7-14mm	7-14mm	7-14mm	7-14mm	7-14mm	9-18mm	14-25mm
Cable entry	Norse-light side	Norse-light side	Norse-light side	Cover	LAN	Power grid	Cover

Pos. nr.	Navn, type, dimensjon	Materiale	Art.nr.
Konstruert/ Tegnet: FH	Godkjent: Initialer / Dato	Målestokk	
Dato 171208		1:10	
T.M. 035-09			
T.M. 010-09			
SAF			
261009			
120309			
3			
2			

Dimensions of Halogen
SH 260-470 R50 BUS

Erstatning for:
D-R50-01 v2

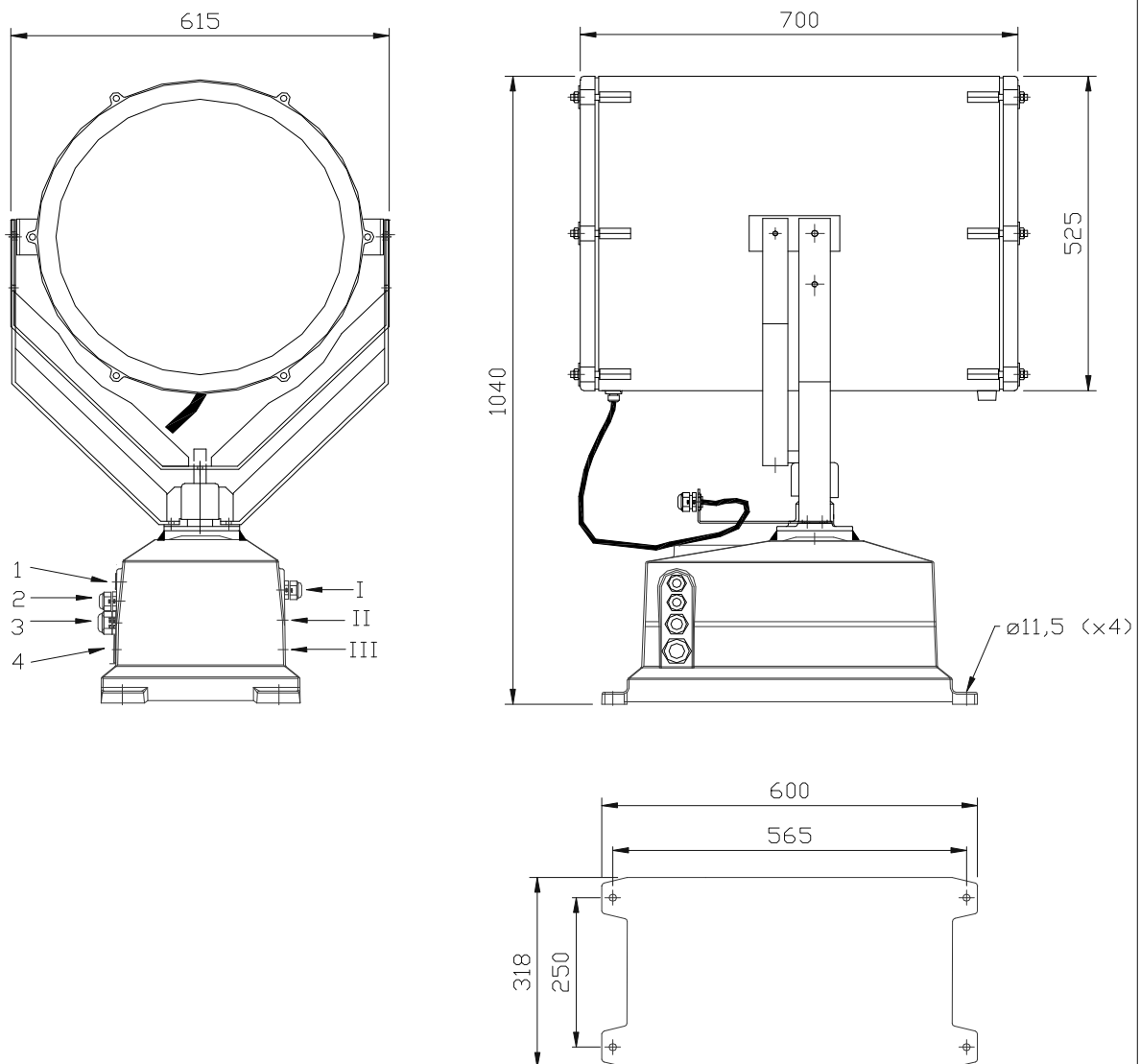
Erstattet av:
SAF

Utgave
3

Papirformat: A4

Projeksjonsmet.

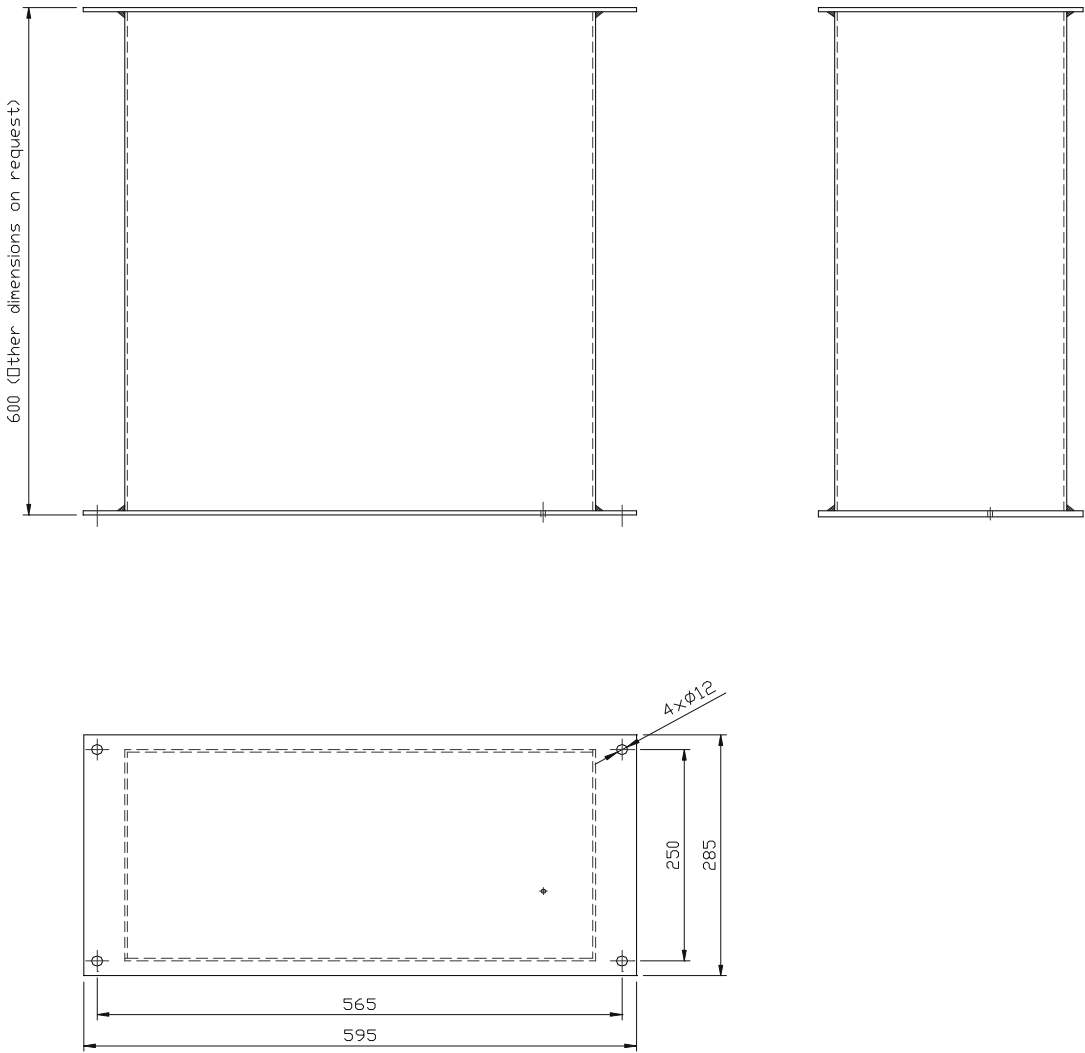
Mechanical Dimensions SH 480 R50



Entry #	I	II	III	1	2	3	4
Description							
Cable Gland	M20	M20	M20	M20	M20	M25	M32
Cable Ø min/max	7-14mm	7-14mm	7-14mm	7-14mm	7-14mm	9-18mm	14-25mm
Cable entry	Norse-light side	Norse-light side	Norse-light side	Cover	LAN	Power grid	Cover

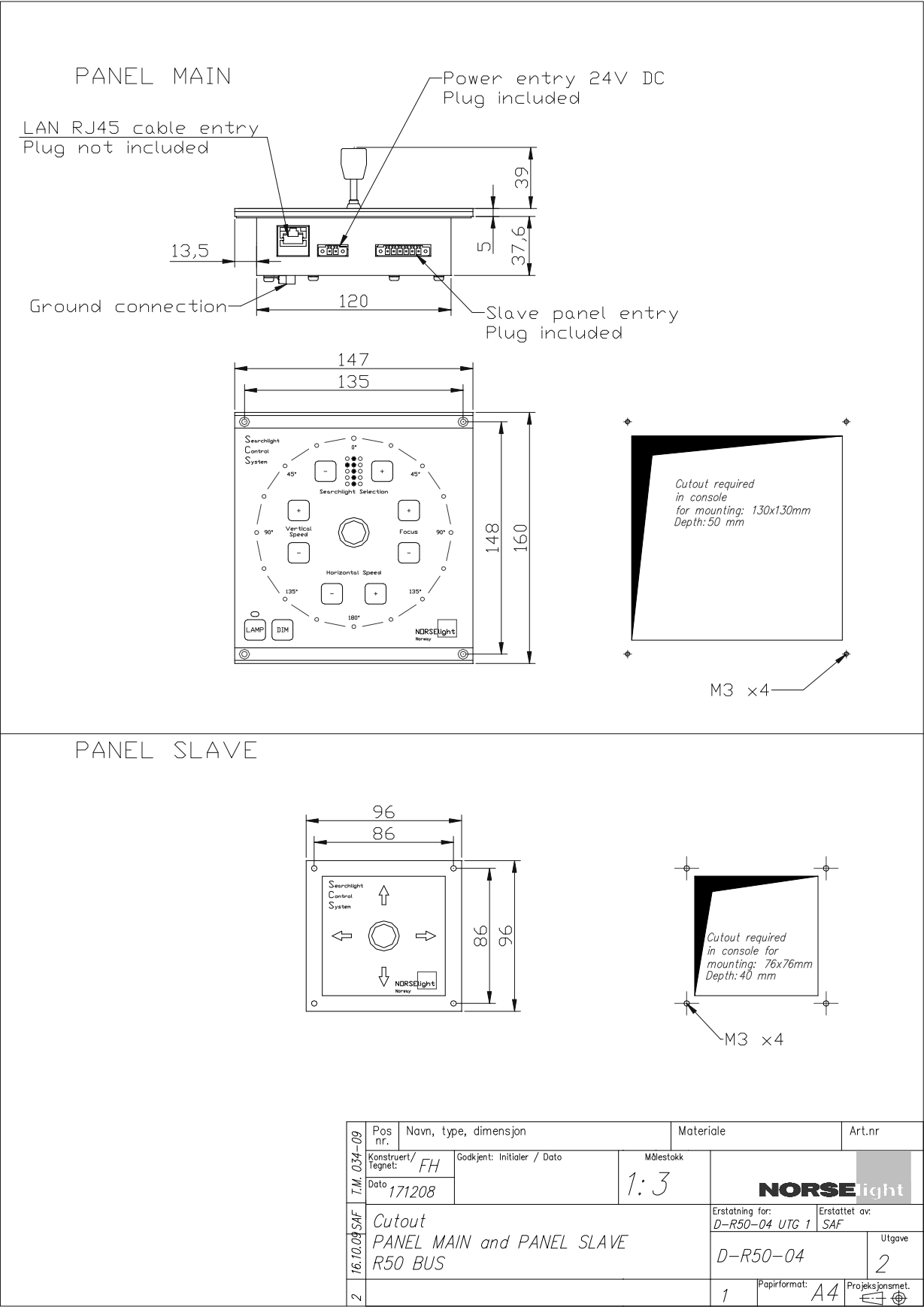
T.M. 036-09	Pos nr.	Navn, type, dimensjon			Materiale		Art.nr
T.M. 010-09	Konstruert/ Tegnet: FH	Godkjent: Initialer / Dato			Målestokk		
	Dato 171208				1:10		NORSE light
SAF	FH	Dimensions of Halogen				Erstatning for: D-R50-02 v2	Erstattet av: SAF
261009	120309	SH 480 R50 BUS				D-R50-02	
3	2	3000W				Papirformat: A4	Utgave 3
						Projeksjonsmet.	

Pedestal R50

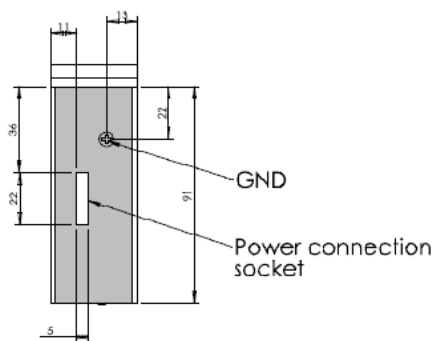
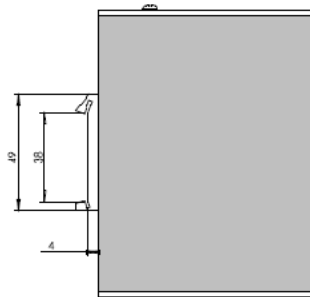
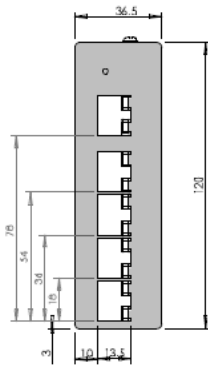


Pos nr.	Navn, type, dimensjon		Materiale	Art.nr
T.M. 039-08	Konstruert/ Tegnet: FH	Godkjent: Initialer / Dato	Målestokk: 1:5	
	Dato: 240608			
FH	Pedestal R50 60 cm		Ersättning for: 200900500-1	Ersattett av: 200900500
177208			Utgave: 2	
2			Papirformat: A3	Projeksjonsmet. ↺ ↻

Operation Panel (Main and Slave) w/cut dimensions



Switch BUS dimensions.

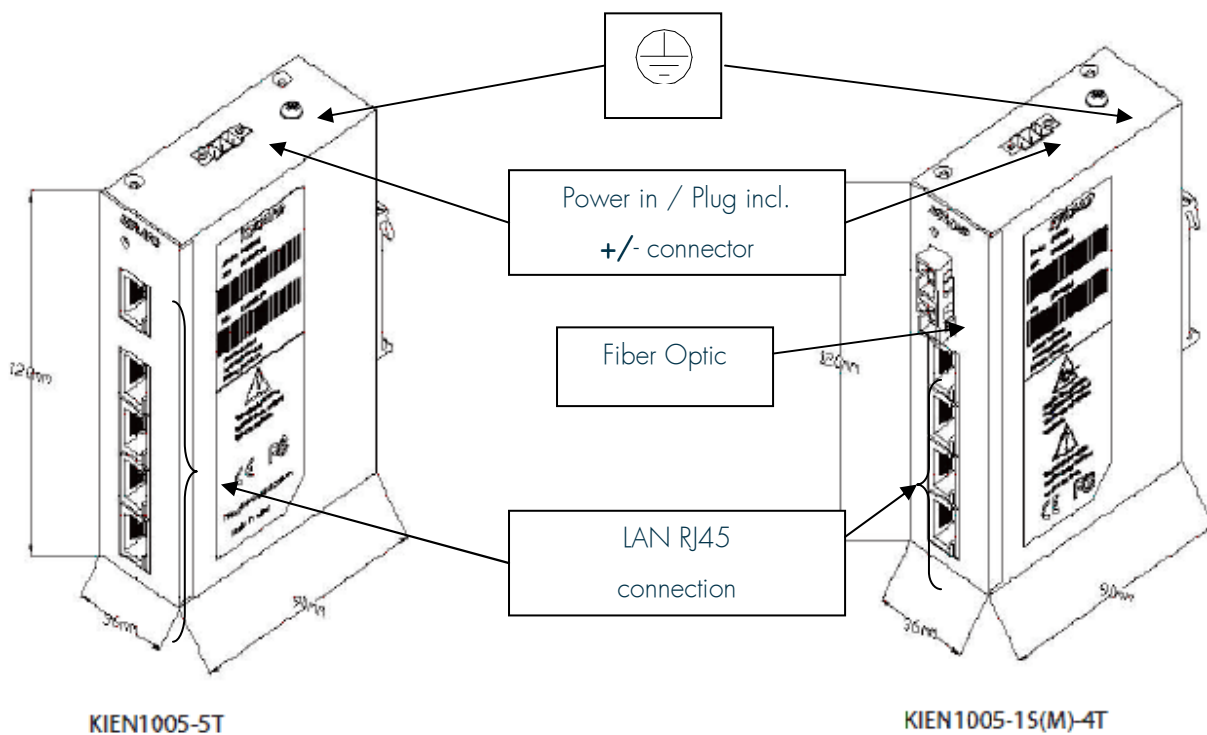


Fits for 5 LAN cable entry for RJ45 plug (KEIN1005S-5T) or

1 one full-duplex fiber port of 100Base-FX, single mode or multimode and 4 LAN cable entries (KEIN1005-1S (M)-4T).

Look in the manual for KEIN1005 for more details.

Installation: DIN-35 Rail or wall mounting



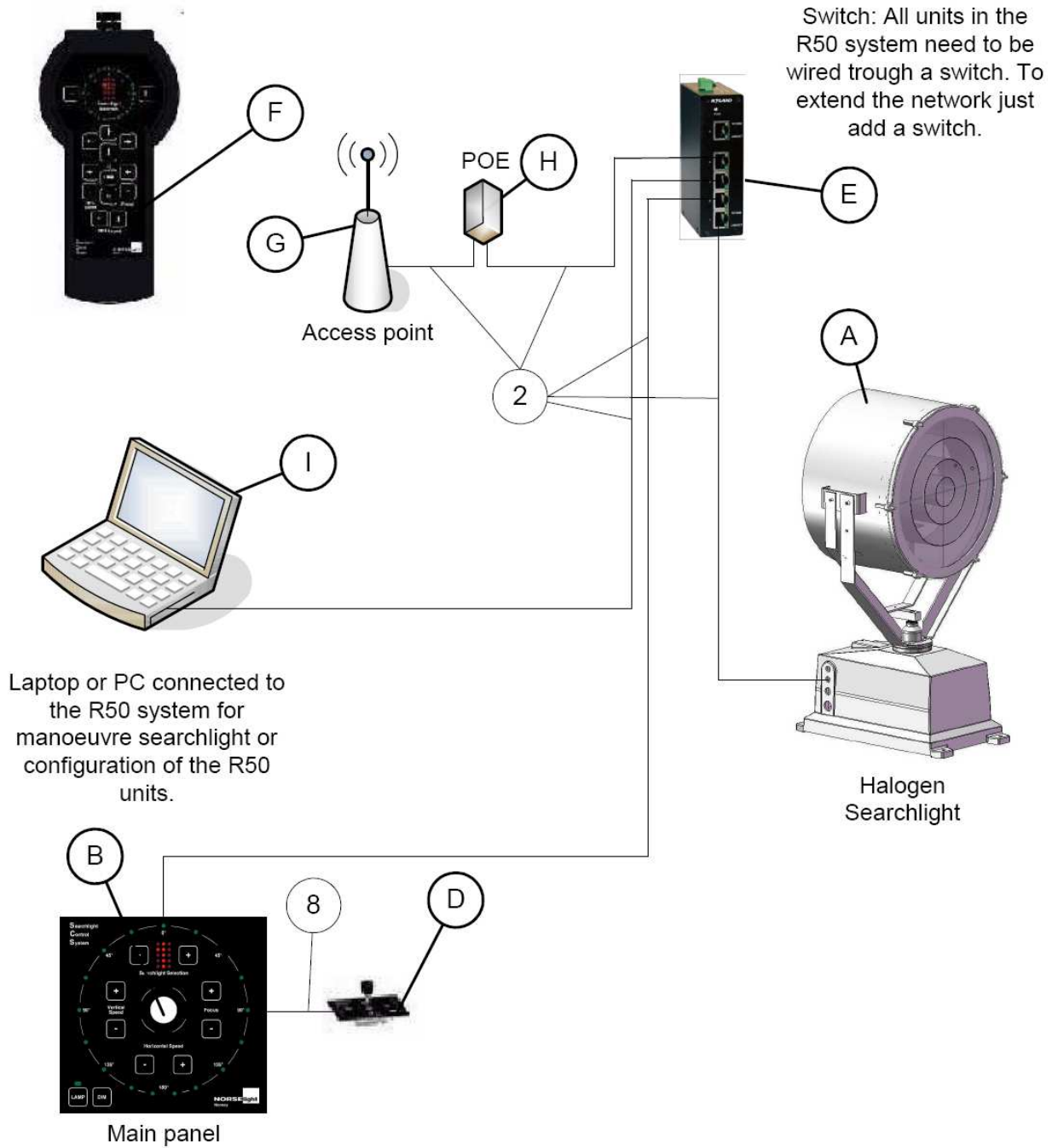
KIEN1005-5T

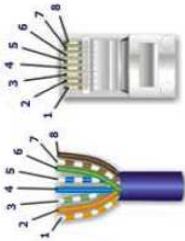
KIEN1005-1S(M)-4T

Ethernet BUS, LAN Cables only

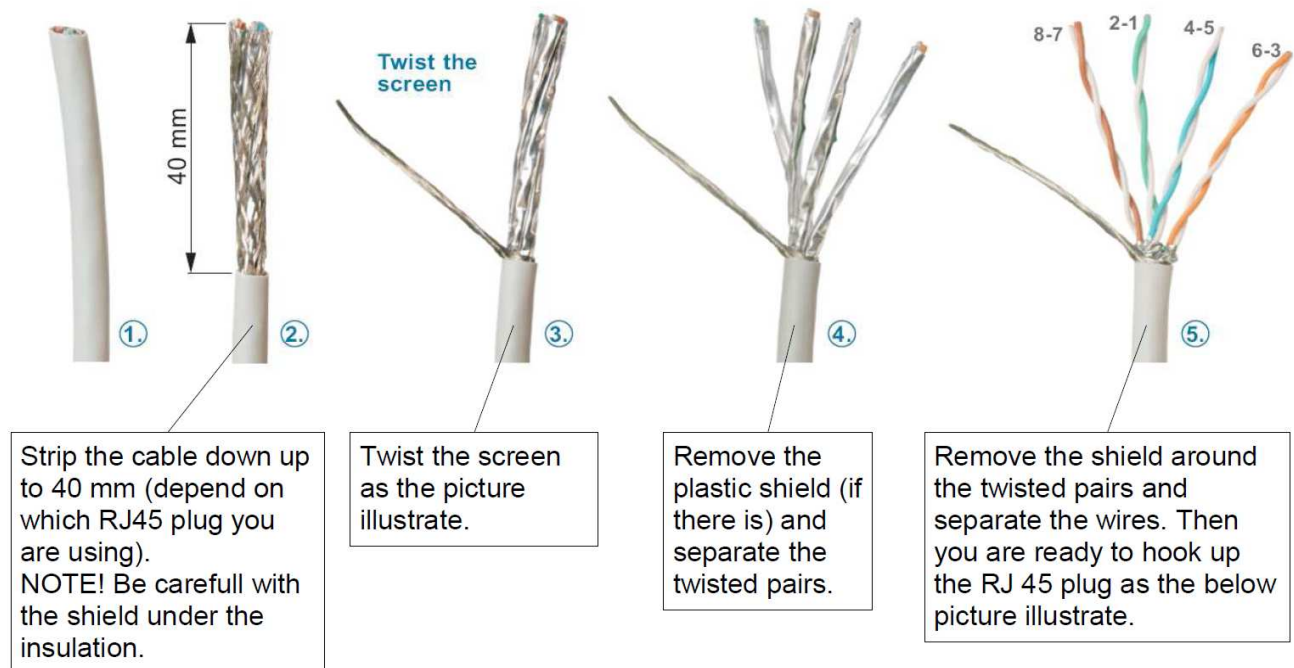


R50 System Network chart.

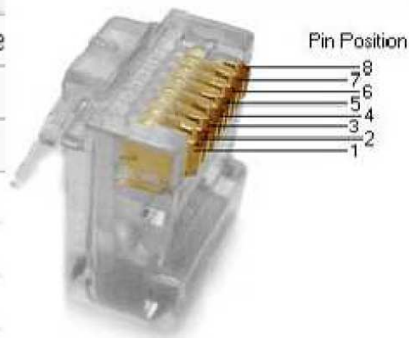


Description:	
A	Halogen searchlight
The searchlight only needs mains input and a LAN cable to be ready for operating. Plug and play. The maximum number of searchlights per network is nine.	
B	Main Operation Panel - MOP
Main Operation Panel for bulkhead mounting. For example in a bridge console. Needs 24 VDC and a LAN cable to be ready for Operating searchlights connected to the R50 system. Plug and play.	
D	Slave Operation Panel
This panel can operate searchlights which is chosen by the Main Panel. There is only possible to manoeuvre horizontally and vertically with the Slave Panel.	
E	Switch
Switch with 5 Ethernet LAN outlets. Connect another switch in series with this, to get more LAN outlets. All R50 equipment must be connected to the switch.	
F	Wireless Operation Panel -WOP
Press ON button to connect to access point. WOP is prepared for Norselight Access point.	
G	Access point
Just connect access point to a switch true a Power over Ethernet adapter with a LAN cable. The Access point is powered true a power over Ethernet adapter, witch follow the access point. The LAN cable is the only cable the Access point need to be ready for the R50 system. Access point is secured with a WEP key.	
H	Power over Ethernet – POE
Power over Ethernet delivers power to the access point, true the LAN cable. Access point.	
I	Laptop or stationary PC
Connect a PC to the switch and hook up to the R50 system. A laptop or a stationary PC can easily manoeuvre searchlight or do some simple configurations of the R50 units, if there is need for a change. Norselight can supply the necessary programs.	
2	LAN Cable – Min required LAN Cat 5e
To achieve the bit rate as the equipment requires, the system must be supplied with LAN cables with minimum CAT 5e standard. It is important to use 568 B wiring standard.	
 568 B	
8	Multi wire to the Slave Operation Panel
Use a 7 core multi cable and connect the Slave Panel to the Main Panel. There can be connected 2 Slave panels per Main Panel.	

How to make a LAN cable



Pin	Color
1	white/orange
2	orange
3	white/green
4	blue
5	white/blue
6	green
7	white/brown
8	brown



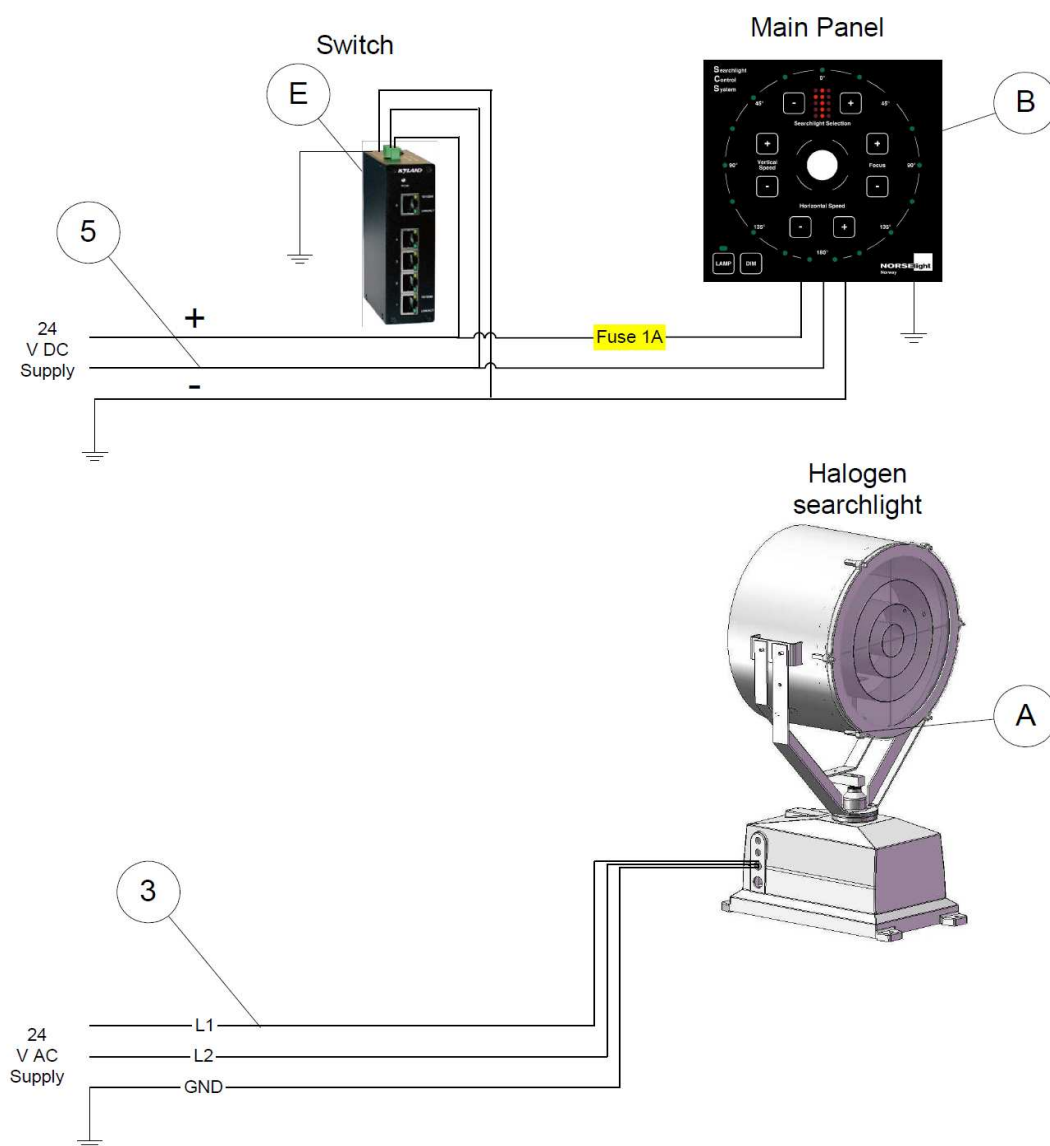
T568B

NOTE! It is very important to connect the shield properly to shield jacket around the RJ 45 plug.

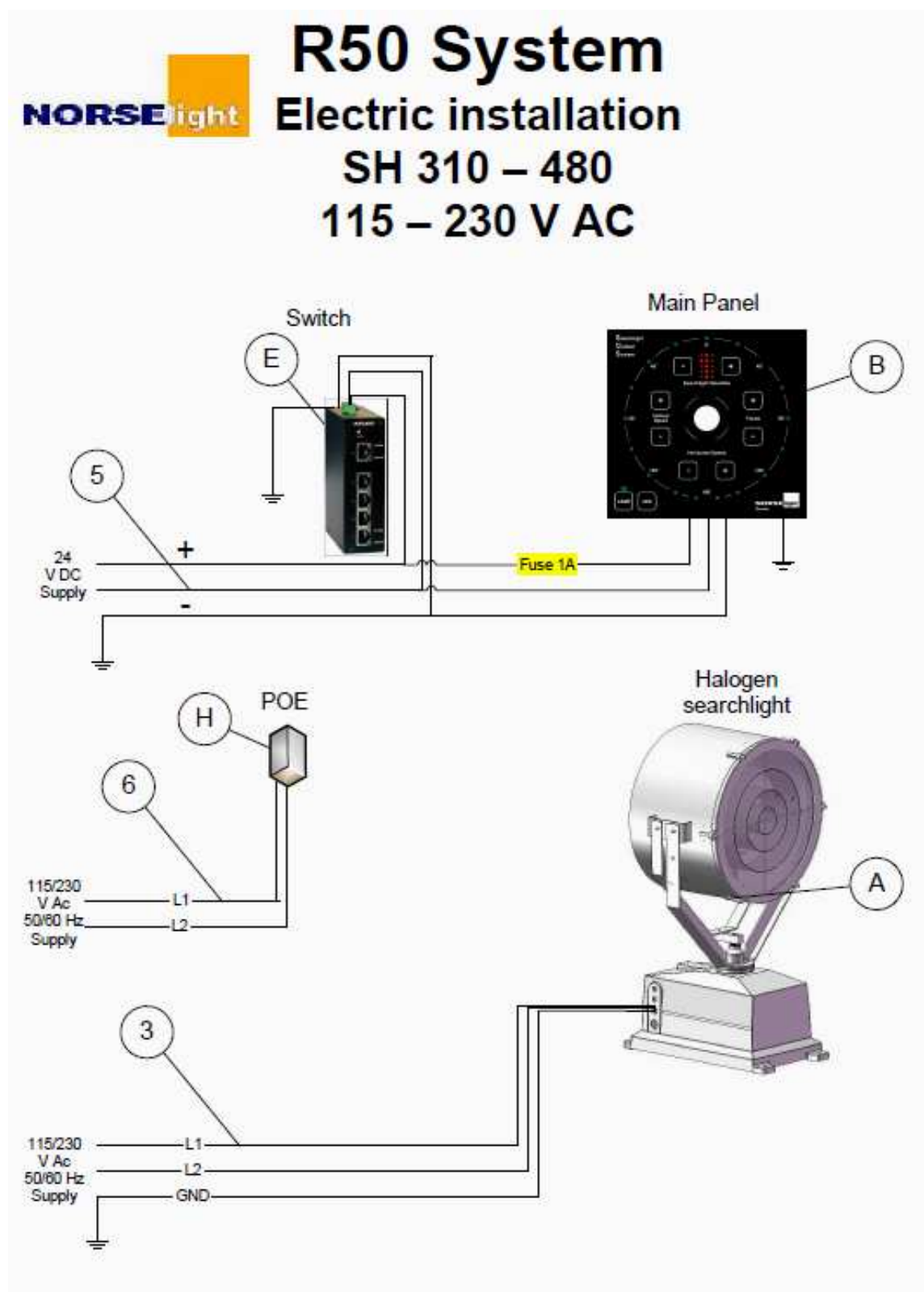
Electrical installation SH 260 and 310 24V DC

R50 System

Electric installation SH 260 – 310 24 V AC



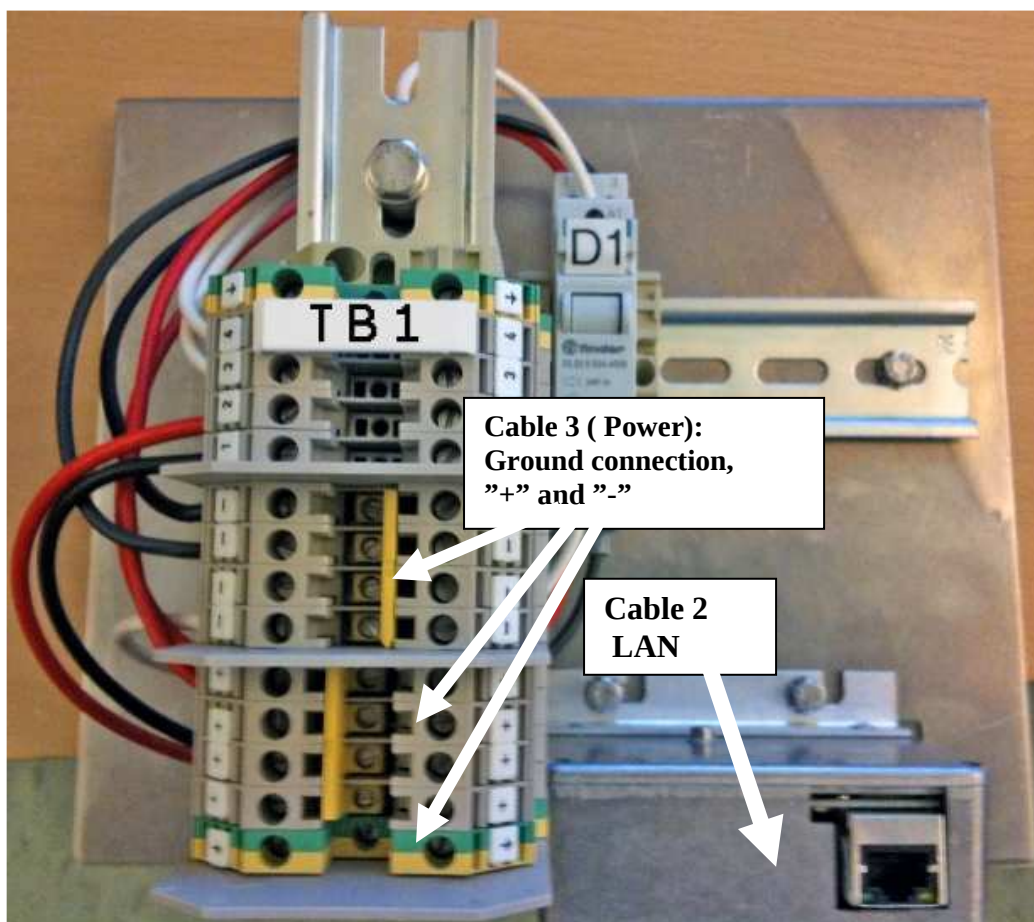
Electrical installation SH 310 to 480 115/230V AC



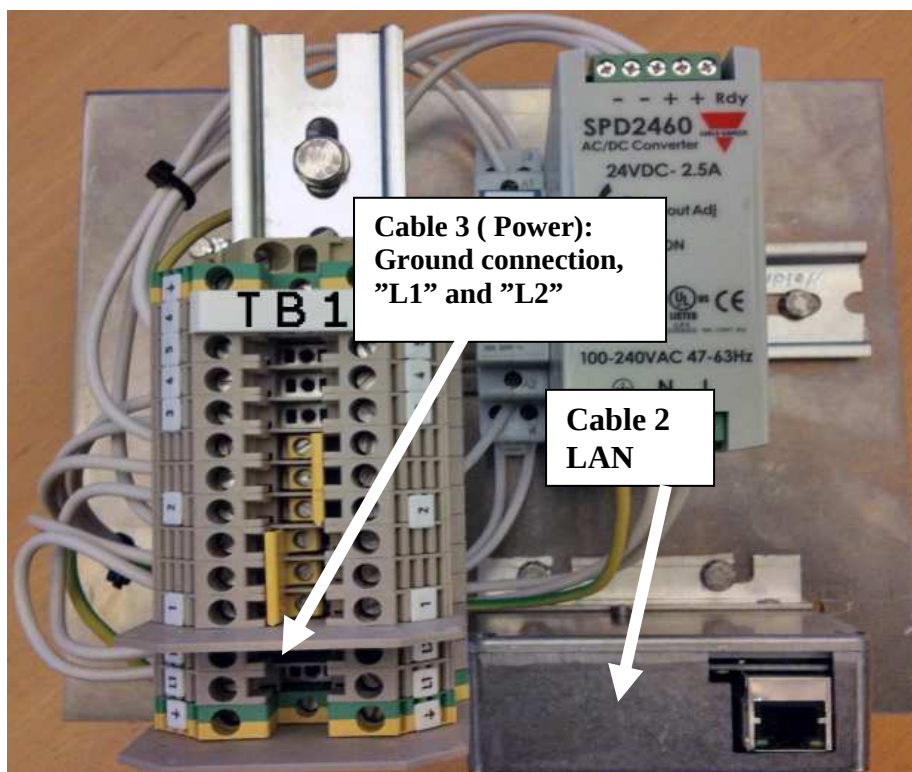
Haloaen Cable overview

Cable #	Function	Lamp effect	Number of wires	Flow rate			Connection point	Thermal Dimention Max [mm ²]	Cable entry Max Ø [mm]	Cable Gland entry
				Power W	Current A	Volt V				
2	LAN cable Cat 5a to 7	N/A	4 par (8) twisted	N/A	N/A	N/A	Digi connector	RJ45 - T-568B	7 - 14	M20
3	Power to SH 260, 250W	250 / 500W	2+Earth	513 / 763	21.4 / 31.8	24	TB1	4	9 - 18	M25
	SH 310, 250/500W	500W	2+Earth	770	6.6 / 3.31	115 / 230	TB1	4	9 - 18	M25
	Power to SH 310	1000W	2+Earth	1270	11.0 / 5.5	115 / 230	TB1	4	9 - 18	M25
	Power to SH310 / SH470	2000W	2+Earth	2263	20.0 / 10.0	115 / 230	TB1	4	9 - 18	M25
	Power to SH 470-480 2000W	3000W	2+Earth	3263	28.4 / 14.2	115 / 230	TB1	4	9 - 18	M25
5	Power to SH 480 3000W	N/A	2x(min) 0,75mm ²	2,16	0,09	24	Terminal plug	1,5	N/A	N/A
7	Power to Main Operation Panel	N/A	2x(min) 0,75mm ²	3,5	0,16	24	Terminal plug	1,5	N/A	N/A
	Power to Switch	N/A	2+Earth	60	5,0 / 2,5	115 / 230	Spring calmp	1,5	N/A	N/A
8	Power to adapter 24VDC	N/A	2+Earth	N/A	N/A	N/A	Terminal plug	1,5	N/A	N/A
	Signal cable to Slave Operation Panel	N/A	6x(min) 0,75mm ²	N/A	N/A	N/A	Terminal plug	1,5	N/A	N/A

Junction box connection 24V



Junction box connection 115 V/230V



All installation cables enters from the right side looking directly into the Junction Box through 2x M20, M25 and M32 as explained in earlier dimension drawing.

For LAN connection it is recommended to use either WAGO connecting adapter to RJ45 with termination points up to 1.5mm² or WAGO connecting plug RJ45.

WAGO connecting adapter, Item no.: 289-175

Product description: INTERFACE MODUL FOR ETHERNET RJ-45 CAGE

CLAMP®CONNECTION for DIN 35 rail

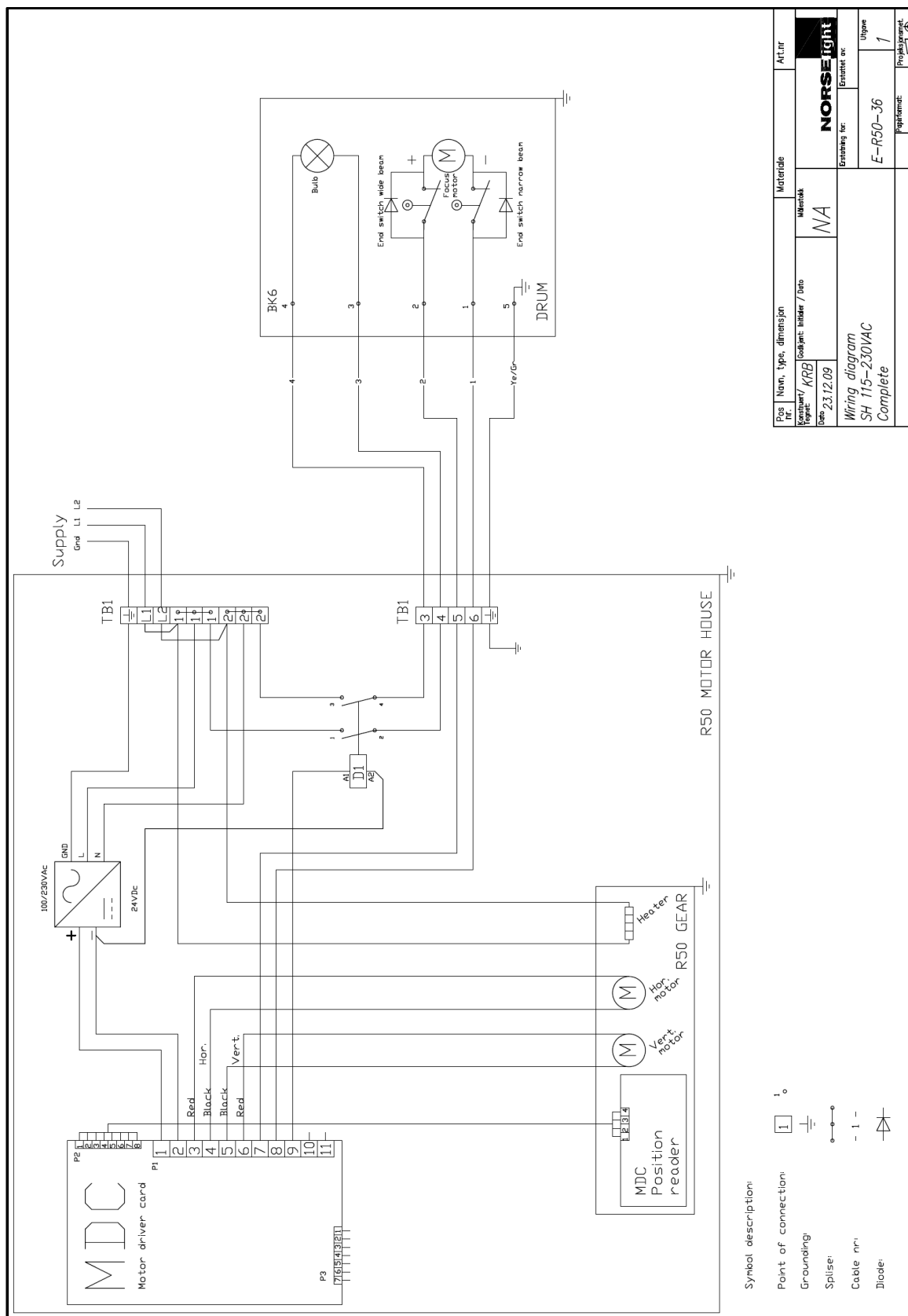


Or

Phoenix Connectors, RJ45 connector, Item no.: 1658435 IP20, CAT5e, 4-pos., PROFINET with QUICKON fast connection technology, for 1-wire and 7-wire conductors AWG 26 ... 22, for cable diameter of 4.5 mm ... 8.0 mm, color: gray.



SH 310 to 480 115/230V AC



7 Reclamation or trouble shooting

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N-1787 Berg i Østfold

Norway

Fill in this formula and send or fax it to Norselight if you have problem with the product.

Company / Person to be contacted:

Installation:

Tlf / fax:

Product:.....

Article no.:

Serial no.:.....

Date of delivery:

Describe the problem or complaint:.....

.....

Other information:.....

.....

Sign:

[illegible]



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PRODUCT BRANDS:

