



EMERGENCY LIGHTING TG-CONS

(SUMMARY OF THE CONCEPT)

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12/04/2024

INTRODUCTION

CERN

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TECHNICAL GALLERIES
CONSOLIDATION

EDMS NO.	REV.	VALIDITY
2811267	1.0	Released

REFERENCE
TGC-S-EN-0003

Date: 2023-04-03

TECHNICAL NOTE

TG-CONS PROJECT RESPONSE TO SRF 2794867 IN THE WEST AREA

ABSTRACT:

Answer to the SRF EDMS 2794867 issued by HSE after the request of the TG-CONS Project.

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TECHNICAL GALLERIES
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2.6 Is emergency lighting required?

During the meetings held with the HSE experts to clarify certain points, the issue of emergency lighting was raised. Currently, it is not present in all galleries but only on a case-by-case basis. The HSE unit gave some recommendations on this subject.

In summary, emergency lighting is required in order to properly guide workers.

Distances between such lightings, power supply mode and their autonomy should still be defined. In any case, there should be no ambiguity in direction changes and the lighting must ensure a minimal brightness of 1 to 2 lux.

Taking into consideration the above-mentioned points, TG-CONS Project will install an emergency lighting system based on the technical specifications followed for the HL-LHC technical galleries.

REFERENCES

- [1] HSE-OHS, "SRF: Answer to TG-CONS questions on fire safety and emergency preparedness," [Online]. Available: <https://edms.cern.ch/document/2794867/>.



TECHNICAL DESIGN REPORT HL-LHC

CERN
CH-1211 Geneva 23
Switzerland



EDMS NO. 2686790	REV. 2.0	VALIDITY RELEASED
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REFERENCE
ELG-GENNET-PR-0050

Date: 2022-02-24

TECHNICAL DESIGN REPORT

Electrical Infrastructure SL171-172-173-174

ABSTRACT:

This document contains all the drawings and studies concerning the new technical galleries SL171-172-173-174 of LHC1 in the frame of the project HL-LHC.

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Example P1



REFERENCE
ELG-GENNET-PR-0050

EDMS NO. 2686790	REV. 2.0	VALIDITY RELEASED
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5. Equipment related to personnel safety and GS equipment

5.1 Introduction

The distribution principle and the location of the safety equipment planned to be installed in the technical galleries have been validated by the WPL17 (Work Package Leader) and by the PSO (Project Safety Officer) of the HL-LHC project [5]. A general presentation of all the safety equipment under WP17.2 has been made and is available in reference [6].

In addition, a formal approval (by EDMS process) was also requested and accepted by the PSO and the WPL17. This approval mainly concerns the validation of the number and position of the safety lights [7].

5.2 Emergency Stop - AUG

There will not be any AUG buttons in the Technical Galleries.

5.3 Secured lighting

The type of secured lighting provided in the Technical Galleries will be of the evacuation path lighting type. The location and number of lights have been defined considering the escape routes defined by the PSO [5].

The luminaires will be of the autonomous block type (BAES), of the brand and model standardized in the S213 installation contract.

The operation of the luminaires will not be permanent. Their operation will be triggered by lack of voltage in the building-controlled lighting circuit.

Following discussions between HSE and the EL-MT section about lighting in the Technical Galleries and the inherent risks, it was recommended not to order controlled lighting circuits.

5.4 Normal lighting (non-controlled)

Normal lighting will not be controlled (for more details refer to § 4.3) and will be supplied from the sub-distribution switchboards of adjacent buildings. The chosen luminaires will be of the LED strip type, PHILIPS brand and installed on the ceiling.

5.5 General Services

Several circuits dedicated to low power will supply socket boxes equipped with IEC type sockets 16A (three-phase + N + PE) and 16A (1 phase + N + PE). The socket boxes will be protected by 30 mA differential protection, intended to supply the mobile lifting pumps used by the firefighters, according to known needs.

5.6 Earthing system and main equipotential network

The cable ladders will be earthed in accordance with the EN-EL standard in force (GENEB__0054). A 120 mm² bare copper cable will be installed in the EB ladder (General Services) and will connect the equipotential earth of the adjacent buildings,

[5] T. Otto, «Evacuation Paths - SF 17 and SF 57Cooling Towers,» EDMS 2509104 , 2021.



12/04/2024

G. GEORGIEV (EN-EL) | TG-CONS: emergency lights

TECHNICAL DETAILS ON THE INSTALATIONS 1/3

This solution is already installed for HL-LHC in P1 and P5.
The same will be applied for NA-CONS.

Luminaire type:



Fiche technique

Luminaire de secours
Straitbox 300

A8 L3 /1

DESCRIPTION

Luminaire de secours à LED IK09, boîtier métallique.

- Luminaire autonome et source centrale (faible consommation d'énergie, durée de vie d'environ 80.000 heures)
- Fonction permanent et non permanent
- Montage mural ou encastré
- Autres dimensions disponibles : Straitbox S300, Straitbox 500
- Autotest inclus
- 5 ans de garantie sur les luminaires de secours à LED Lumatec

Options :

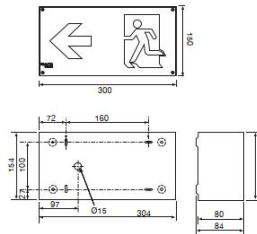
- Système de surveillance Lumabus pour les luminaires de secours autonome
- Réduction de luminosité pour les salles de spectacle (Autotest désactive)



*Hors batterie - se reporter aux CGV

Conformes aux directives : 2004/108/CE, 2006/95/CE, 2009/124/CE, 2011/65/EU

DIMENSIONS (mm)



CARACTÉRISTIQUES TECHNIQUES

Distance de visibilité : 30 m AEAI / 30 m EN
Boîtier : Metal laque epoxy, RAL 9016
Indice de protection : IP 40, IK 07
Classe d'isolation : I
Source lumineuse : LED 300 lm
Plage de fonctionnement : 0°C à + 40°C

Luminaire autonome
Tension d'entrée : 230V AC 50-60Hz ±10%
Autonomie : 1 h
Batterie : NiMH 7.2 V / 1,25 Ah
Consommation : 5 W (Non permanent - 1 W)
EBLF : 77%
Autotest : Oui
Poids : 2 275 g

Luminaire source centrale
Tension d'entrée : 230V AC 50-60Hz ±10%
Tension d'entrée : 178-264V DC
Consommation AC : 3 W
Consommation DC : 3,5 W
EBLF : 100%
Poids : 2 195 g



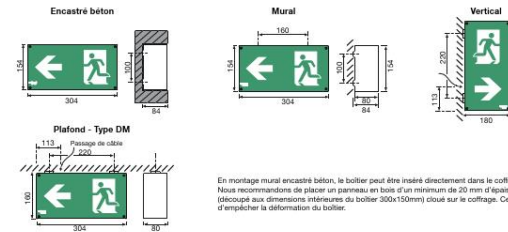
Photos non contractuelles - Sous réserve de modifications

v7.10.24

A8 L3 /1 - ©Lumatec / Swiss Made | 1



MONTAGES



En montage mural encastré béton, le boîtier peut être inséré directement dans le coffrage. Nous recommandons de placer un panneau en bois d'un minimum de 20 mm d'épaisseur (découpé aux dimensions intérieures du boîtier 300x150mm) cloué sur le coffrage. Ceci, afin d'éviter la déformation du boîtier.

PICTOGRAMMES

Type	Article	Type	Article
	A8 200.22/1		191A580
	A8 200.26/1		191A581
	A8 200.30/1		191A582
	A8 200.50/1		191-A00
			A8 200.38D/1
			191A583
			A8 200.37D/1
			191A584
			A8 200.38G/1
			191A585
			A8 200.37G/1
			191A586

Choix du pictogramme à préciser à la commande

RÉFÉRENCES PRODUITS

Luminaire autonome	Type	Article	Autotest	Autonomie	Télécommande	Montage
A8 L3RW1/1-TA-WM/EB	601A080	Oui	1h		Mural / Encastré béton	
A8 L3RW1/1-TA-WM/EB-F	601-412	Oui	1h	Oui	Mural / Encastré béton	
A8 L3RW1/1-TA-DM	601-072	Oui	1h		Plafond simple face	
A8 L3RW1/1-TA-DM-F	601-0721	Oui	1h	Oui	Plafond simple face	
A8 L3RW1/1-TA-DM2	601-081	Oui	1h		Plafond double face	
A8 L3RW1/1-TA-DM2-F	601-0811	Oui	1h	Oui	Plafond double face	
Option : Surveillance Lumabus	601-0811	Oui	1h			
Luminaire source centrale	Type	Article	Autotest	Autonomie	Télécommande	Montage
A8 L3U220/1-WM/EB	601-141					Mural / Encastré béton
A8 L3U220/1-DM	601-088					Plafond simple face
A8 L3U220/1-DM2	601-089					Plafond double face
Accessoires	Type	Article	Autotest	Autonomie	Télécommande	Montage
A8 400.15/1	191A573					
A8 L3RW1/1-TA-E	601A104					
LL 7212-B00	142-270					
A8 L3U220/1-E	601-131					
A8 100.15/1-LED	165D063					
A8 100.12/1	650-0004					



Photos non contractuelles - Sous réserve de modifications

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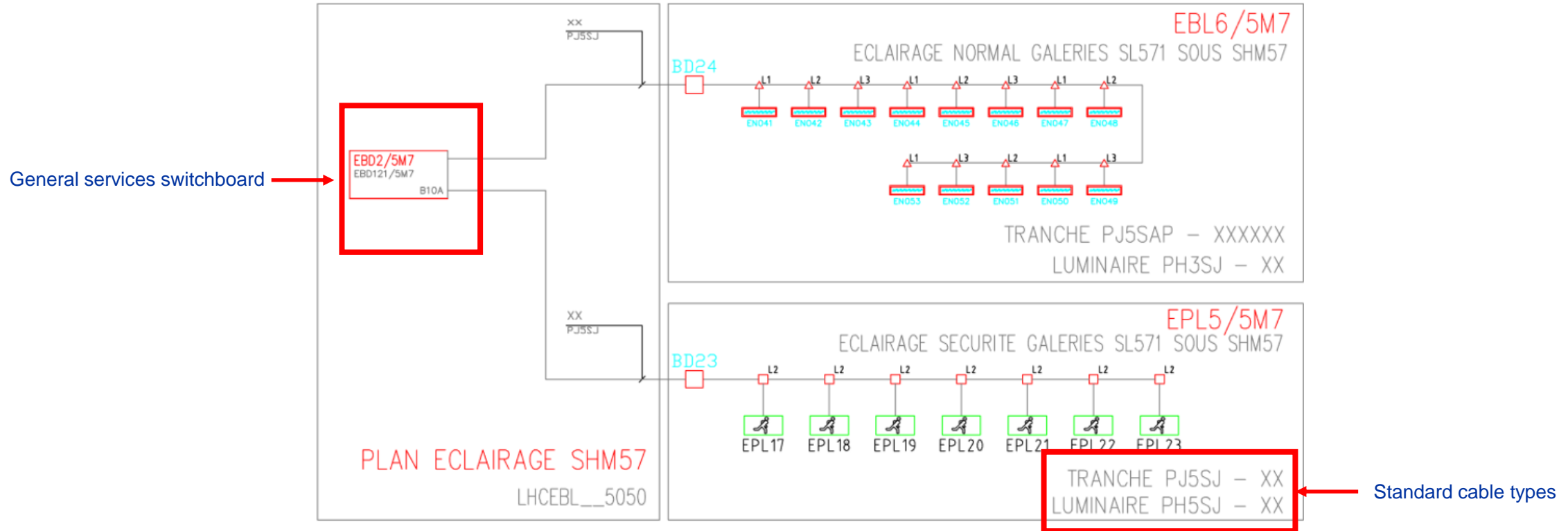


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TECHNICAL DETAILS ON THE INSTALATIONS 2/3

This solution is already installed for HL-LHC in P1 and P5.
The same will be applied for NA-CONS.

Power supply and cabling:



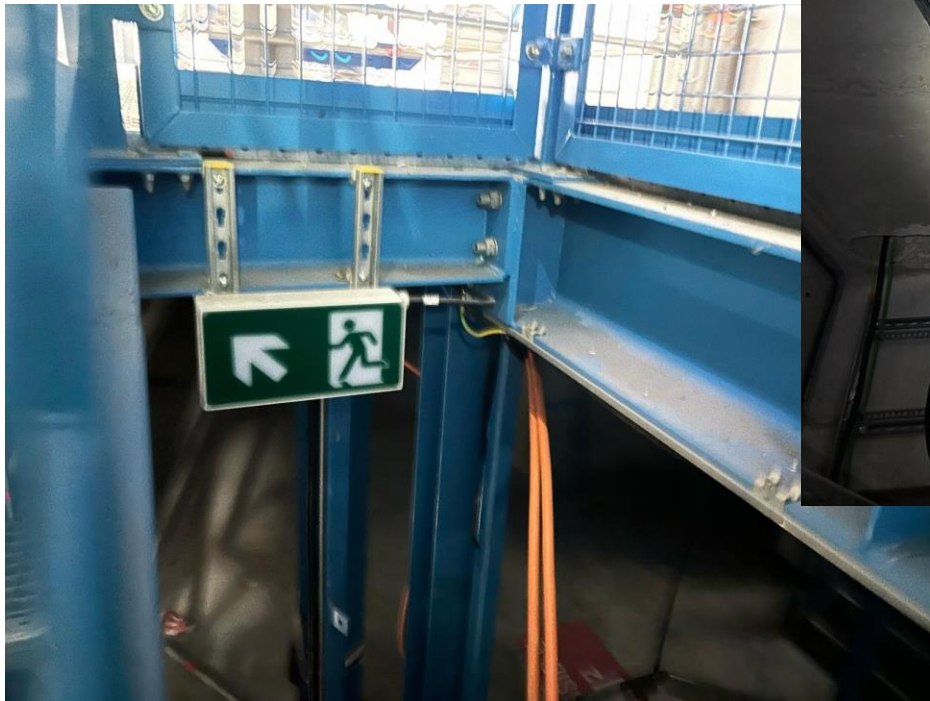
L'éclairage commandé ou normal présente dans les galeries techniques sera en fonctionnement permanent (pas de circuit de commande).
L'éclairage de sécurité (luminaires de type BAES) sera en fonctionnement non permanent.

From EDMS 2600972: SL571 Tech. Galleries (South) - EN-EL Safety lighting

TECHNICAL DETAILS ON THE INSTALATIONS 3/3

This solution is already installed for HL-LHC in P1 and P5.
The same will be applied for NA-CONS.

Pictures of HL-LHC installation





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