

Holcombe Brook Sports Club

Lighting Design

Project code: 3136
Date: 15/05/2012

Client: Holcombe Brook Sports Club
Client Representative:

Lighting Consultant: Ayrlect Associates
Project Consultant:
Planning Consultant:

Lighting Design Company: Luminance Pro Lighting Systems Ltd
Lighting Design Representative: Matthew Haskins
Lighting Design Software: CalcuLux Area 7.6.2.0

Design Criteria: To provide a lighting scheme suitable for Lawn Tennis Associations recommended standard, whilst minimising light spill and glare to neighbouring properties.
PPA = 500 Lux maintained at 0.7 uniformity
TPA = 400 Lux maintained at 0.6 uniformity

Columns: 18 No. 10 metre nominal (HiLux model: HLC100HD)

Luminaires: 24 No. (HiLux Ace 230)

Lamps: 24 No. (2kW metal halide)

Notes: A departure from the Hilux Ace luminaire may cause an increase in nuisance overspill to adjacent dwellings.

This lighting design is solely based on the use of the equipment detailed.
Any deviation from this equipment will produce differing results.

The nominal values shown in this report are the result of precision calculations, based upon precisely positioned luminaires in a fixed relationship to each other and to the area under examination. In practice the values may vary due to tolerances on luminaires, luminaire positioning, reflection properties and electrical supply.

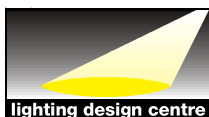
luminance pro
lighting systems

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HiLux

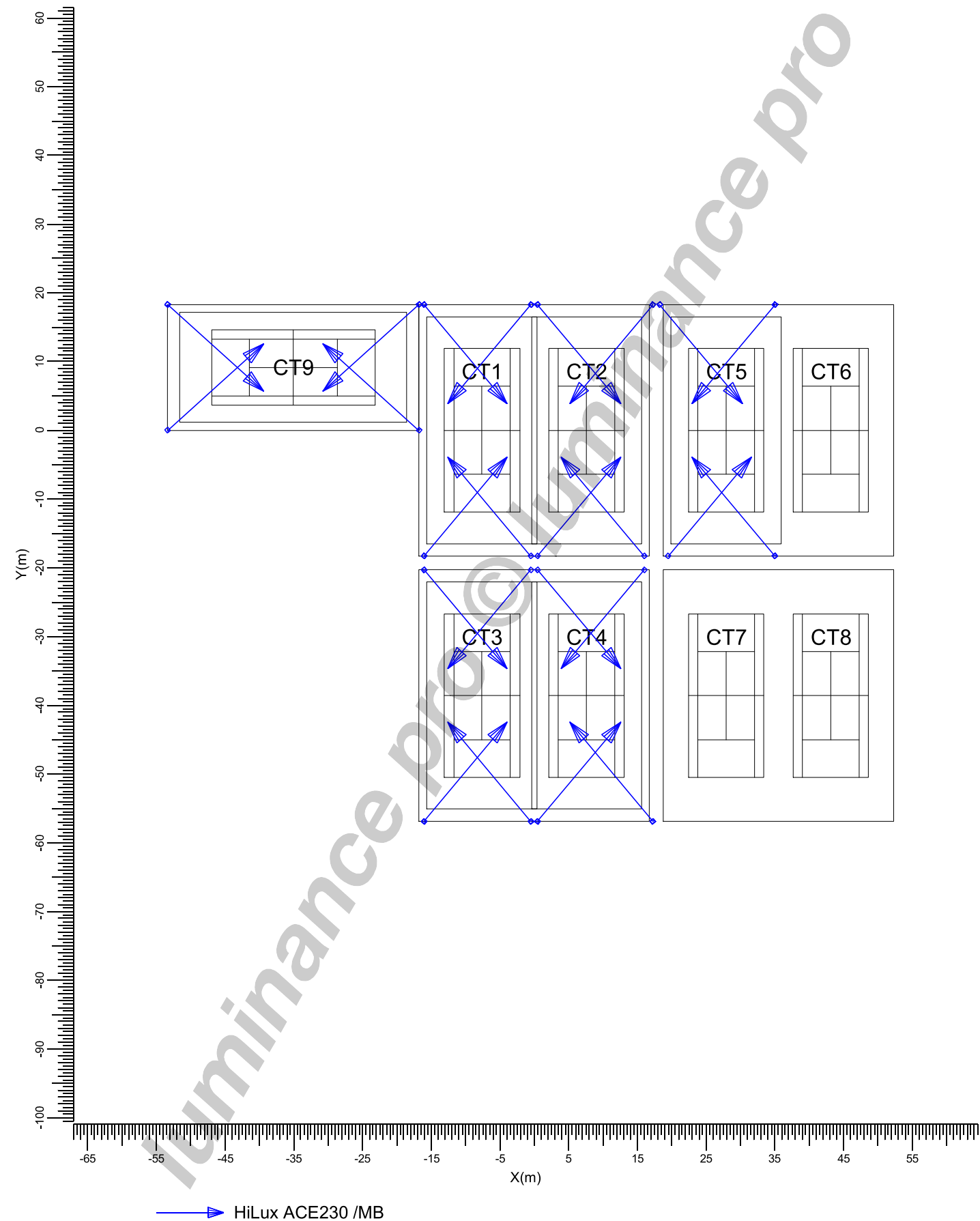


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1. Project Description

1.1 Top Project Overview



Scale
1:750

2. Summary

2.1 General Information

The overall maintenance factor used for this project is 0.90.

2.2 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
B	24	HiLux ACE230 /MB	1 * HQI-TS 2000W	2200.0	1 * 230000

Code	Maintenance factor	
	Luminaire	Lamp
B	0.90	0.90

The total installed power: 52.80 (kWatt)

Number of Luminaires Per Switching Mode:

Switching Mode	Luminaire Code	Power (kWatt)
	B	
Court 1	4	8.80
Court 2	4	8.80
Court 3	4	8.80
Court 4	4	8.80
Court 5	4	8.80
Court 9	4	8.80
All lights	24	52.80

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code	Power (kWatt)
	B	
Court 1 Point 1	2	4.40
Court 1 Point 2	2	4.40
Court 2 Point 1	2	4.40
Court 2 Point 2	1	2.20
Court 2 Point 3	1	2.20
Court 3 Point 1	2	4.40
Court 3 Point 2	2	4.40
Court 4 Point 1	2	4.40
Court 4 Point 2	1	2.20
Court 4 Point 3	1	2.20
Court 5 Point 1	2	4.40
Court 5 Point 2	1	2.20
Court 5 Point 3	1	2.20
Court 9 Point 1	4	8.80

2.3 Calculation Results

Switching Modes:

Code	Switching Mode
1	Court 1
2	Court 2
3	Court 3
4	Court 4
5	Court 5
6	Court 9
7	All lights

(II)luminance Calculations:

Calculation	Switching Mode	Type	Unit	Ave	Min/Ave
PPA1	1	Surface Illuminance	lux	581	0.85
PPA2	2	Surface Illuminance	lux	573	0.84
PPA3	3	Surface Illuminance	lux	581	0.85
PPA4	4	Surface Illuminance	lux	573	0.84
PPA5	5	Surface Illuminance	lux	574	0.84
PPA9	6	Surface Illuminance	lux	556	0.91
TPA1	1	Surface Illuminance	lux	511	0.62
TPA2	2	Surface Illuminance	lux	509	0.61
TPA3	3	Surface Illuminance	lux	511	0.62
TPA4	4	Surface Illuminance	lux	509	0.61
TPA5	5	Surface Illuminance	lux	509	0.61
TPA9	6	Surface Illuminance	lux	506	0.61
Overspill	7	Surface Illuminance	lux		

3. Calculation Results

3.1 PPA1: Graphical Table

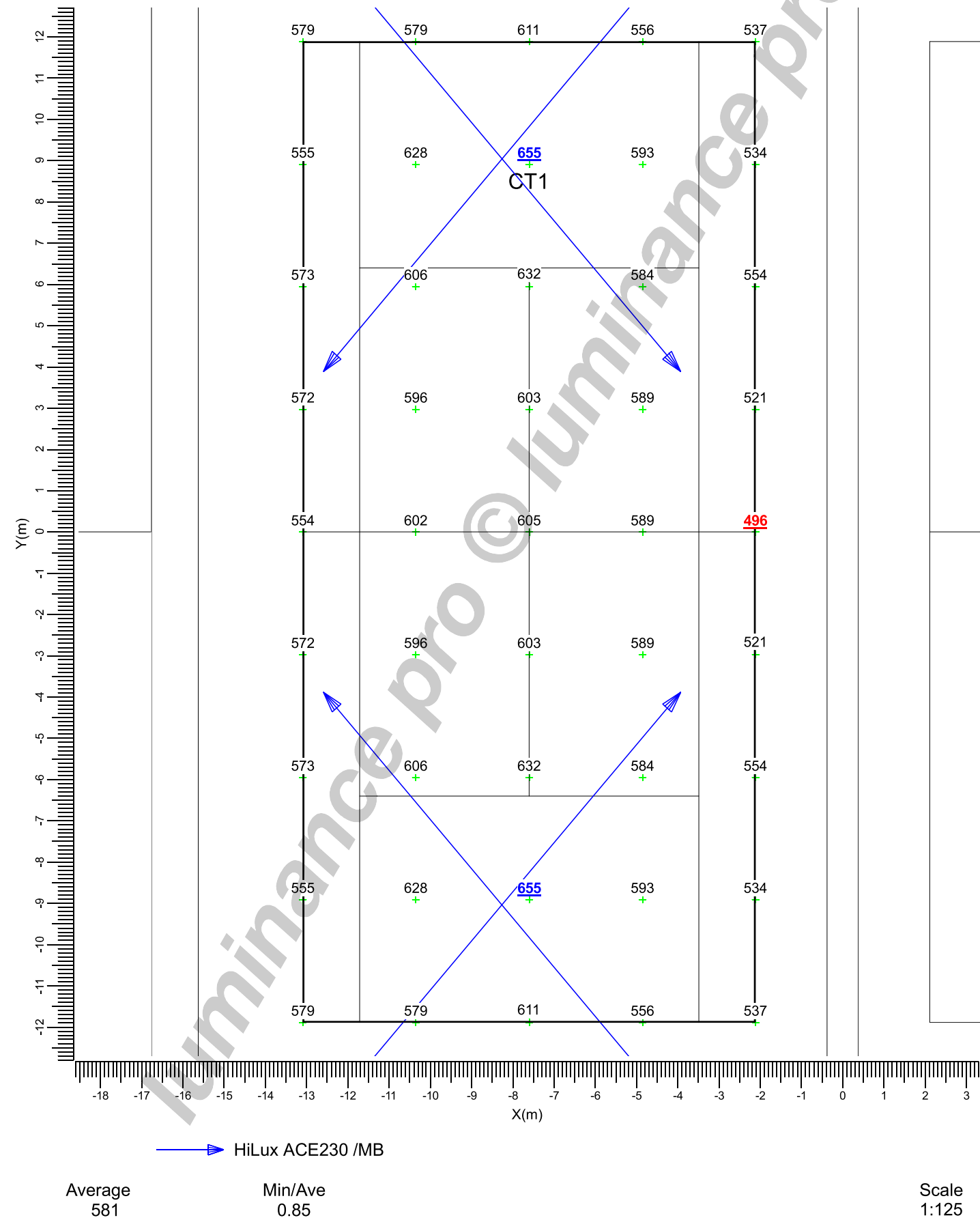
Court 1

Grid

Calculation

: PPA1 at Z = -0.00 m

: Surface Illuminance (lux)

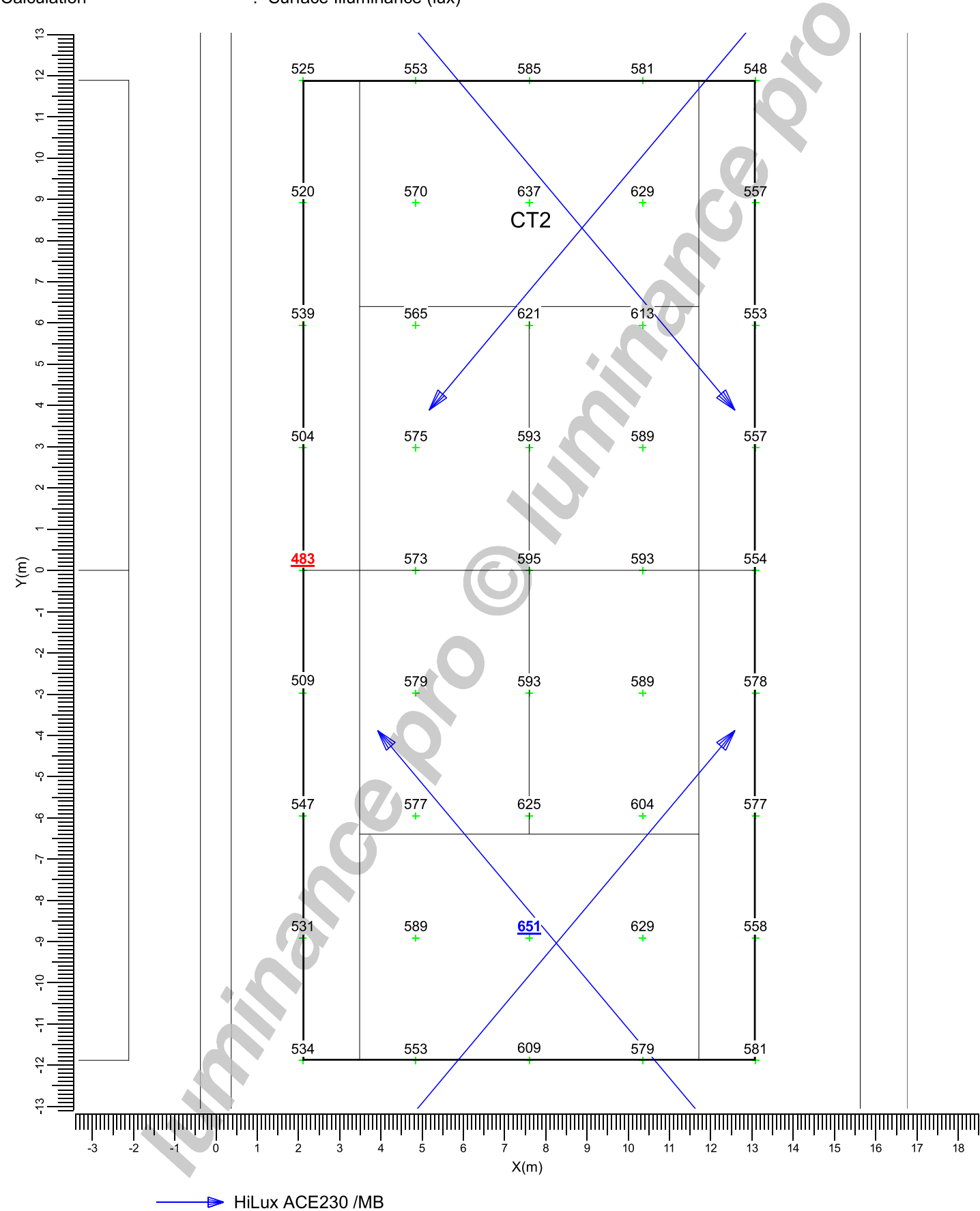


3.2 PPA2: Graphical Table

Court 2

Grid : PPA2 at Z = -0.00 m

Calculation : Surface Illuminance (lux)



Average
573

Min/Ave
0.84

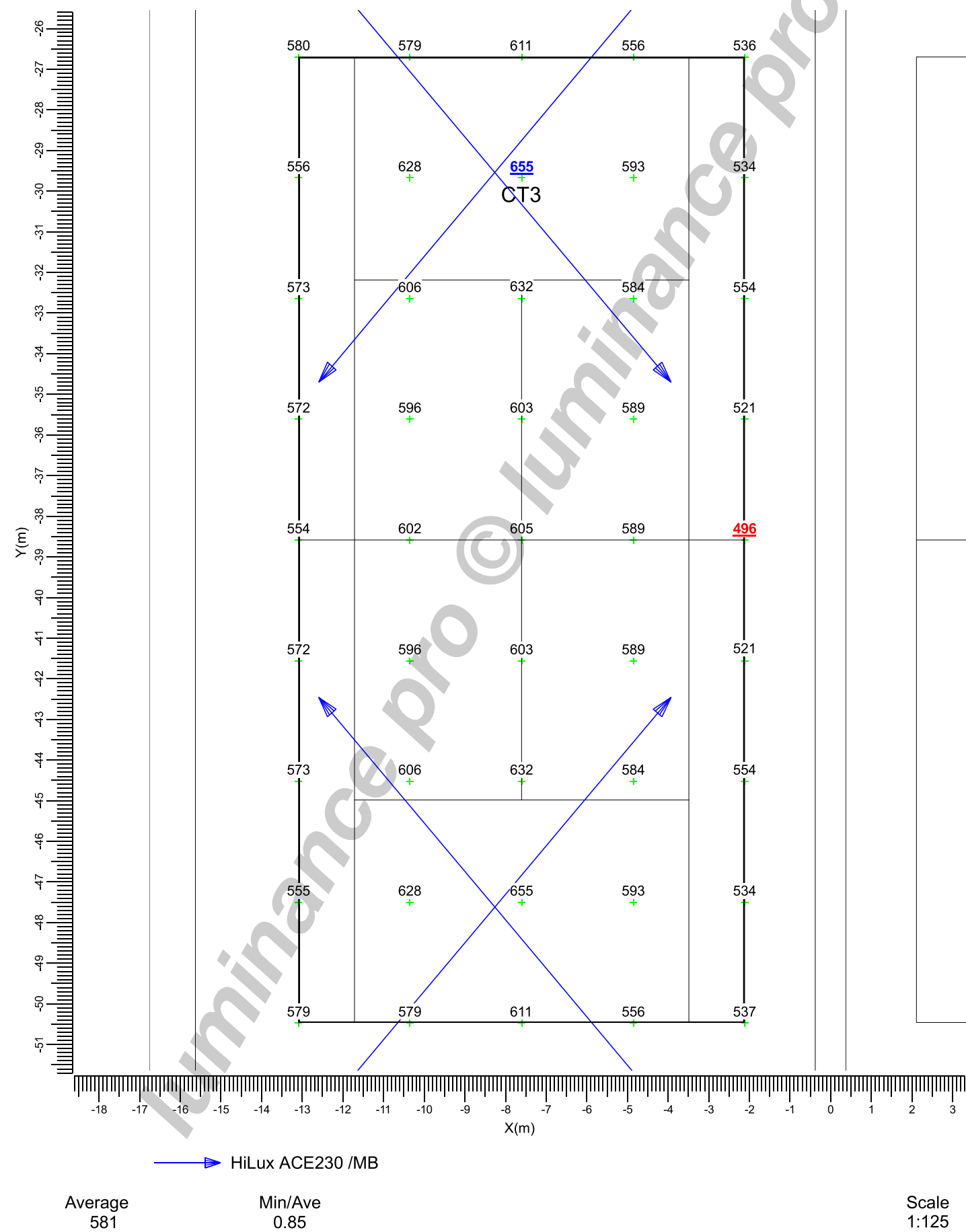
Scale
1:125

3.3 PPA3: Graphical Table

Court 3

Grid : PPA3 at Z = -0.00 m

Calculation : Surface Illuminance (lux)

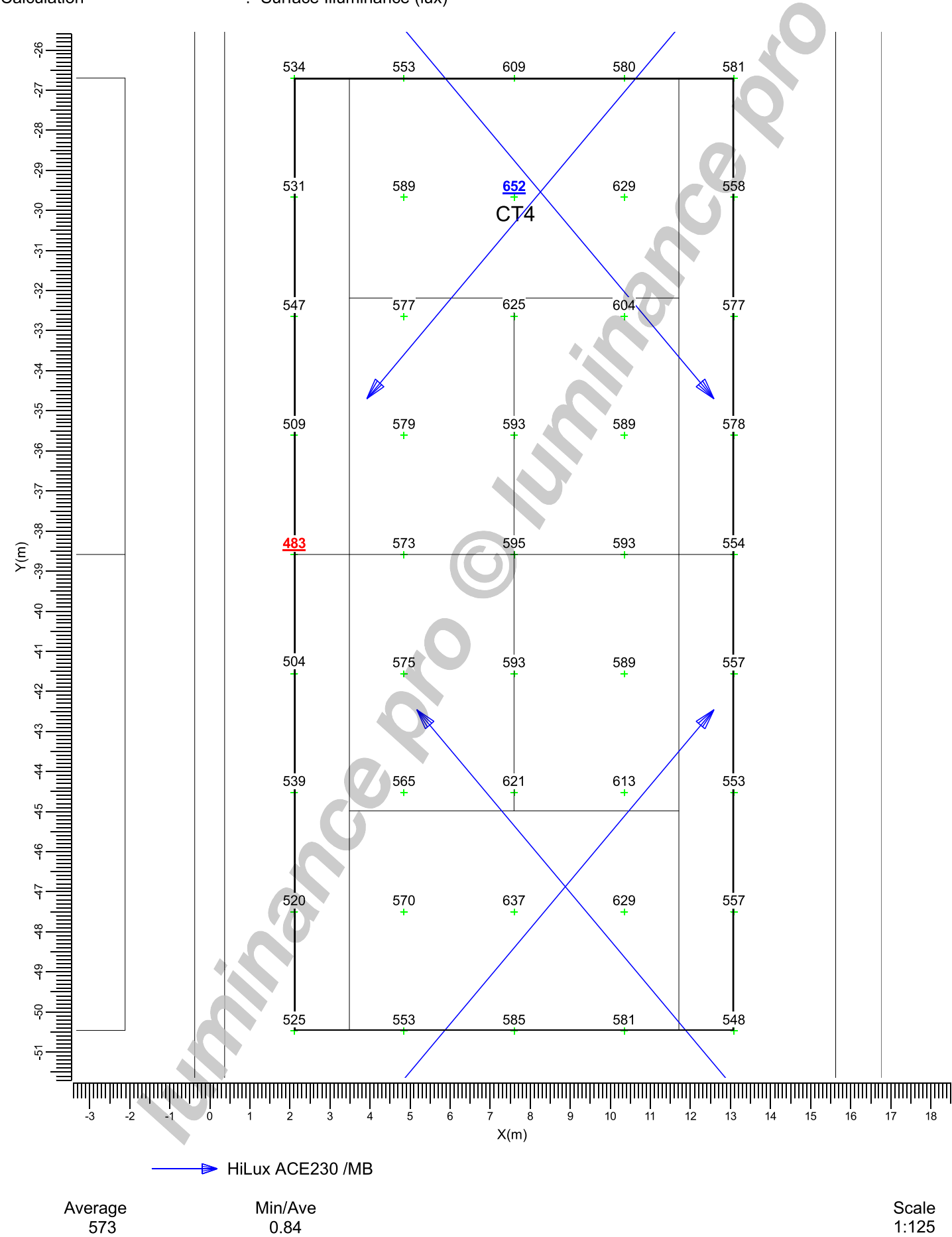


3.4 PPA4: Graphical Table

Court 4

Grid : PPA4 at Z = -0.00 m

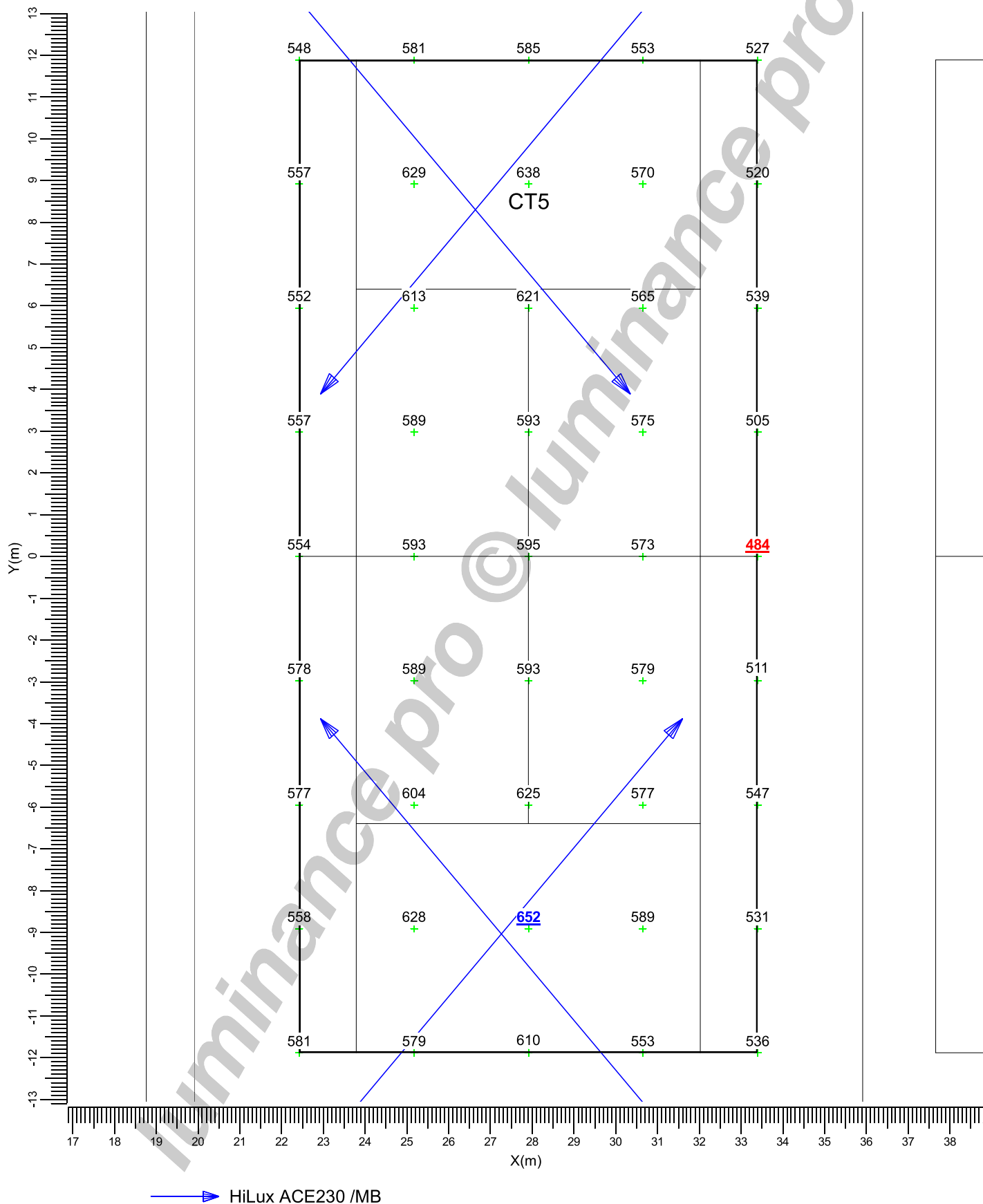
Calculation : Surface Illuminance (lux)



3.5 PPA5: Graphical Table

Court 5

Grid : PPA5 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



Average
574

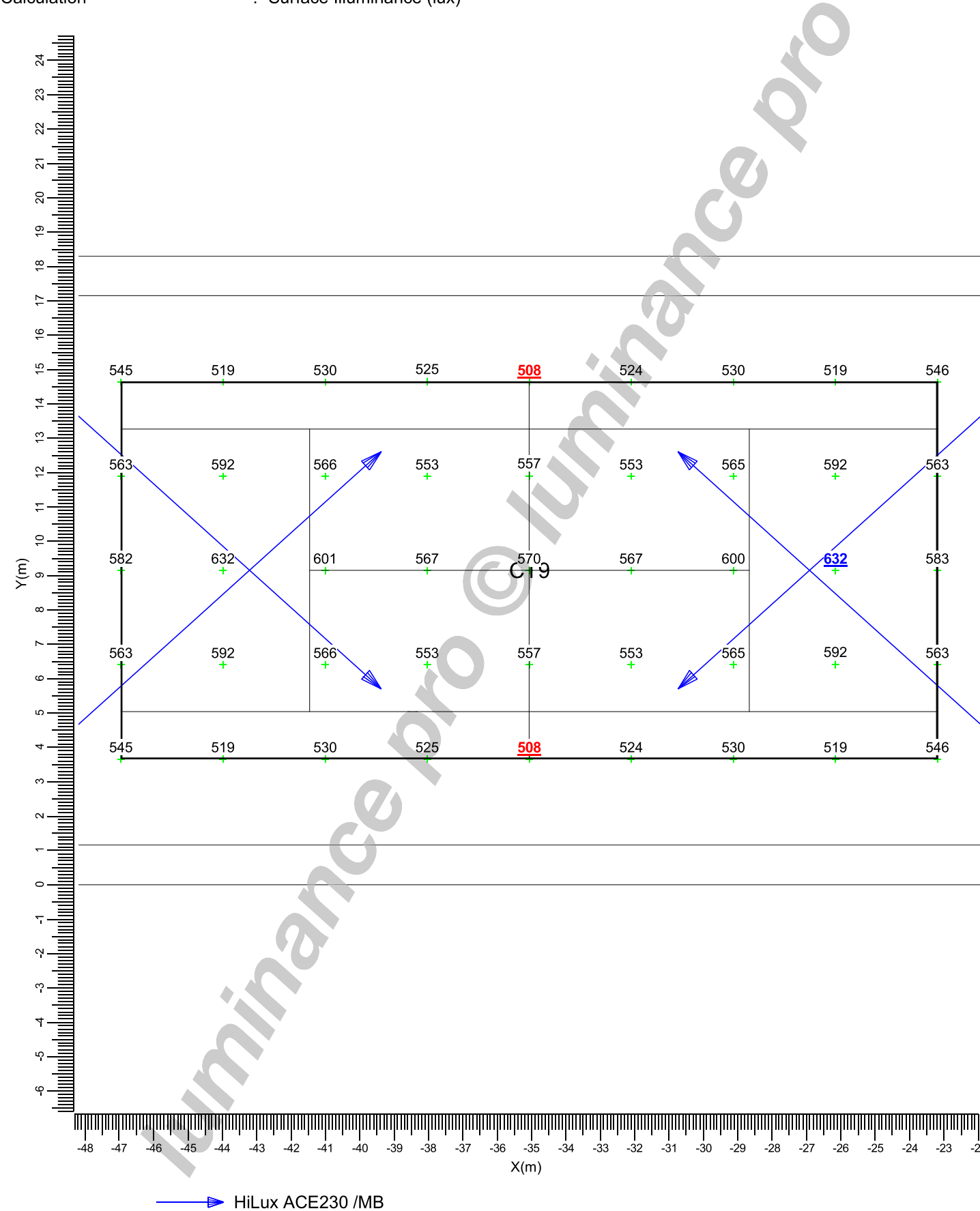
Min/Ave
0.84

Scale
1:125

3.6 PPA9: Graphical Table

Court 9

Grid : PPA9 at Z = -0.00 m
Calculation : Surface Illuminance (lux)

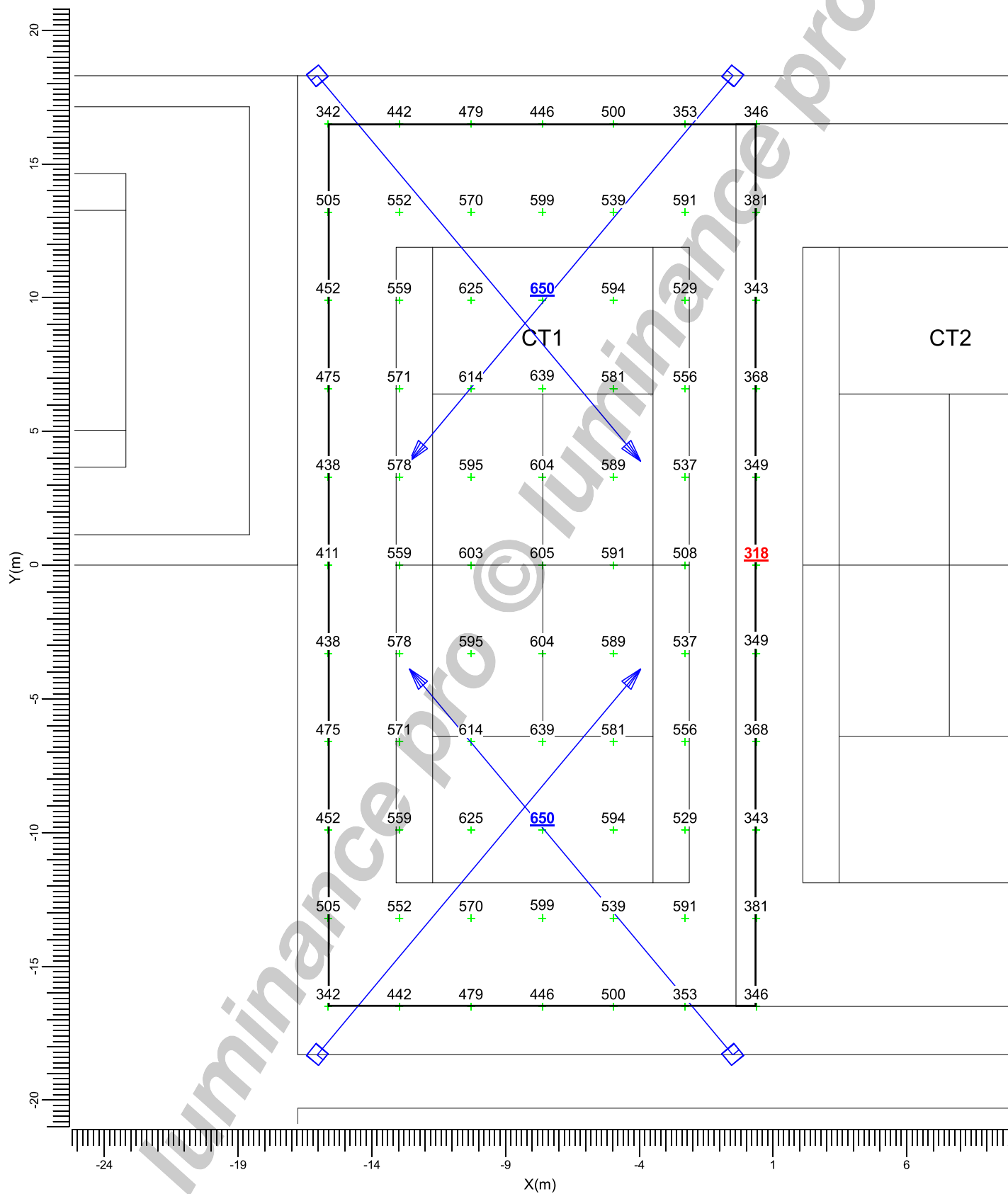


Average 556 Min/Ave 0.91 Scale 1:150

3.7 TPA1: Graphical Table

Court 1

Grid : TPA1 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



Average
511

Min/Ave
0.62

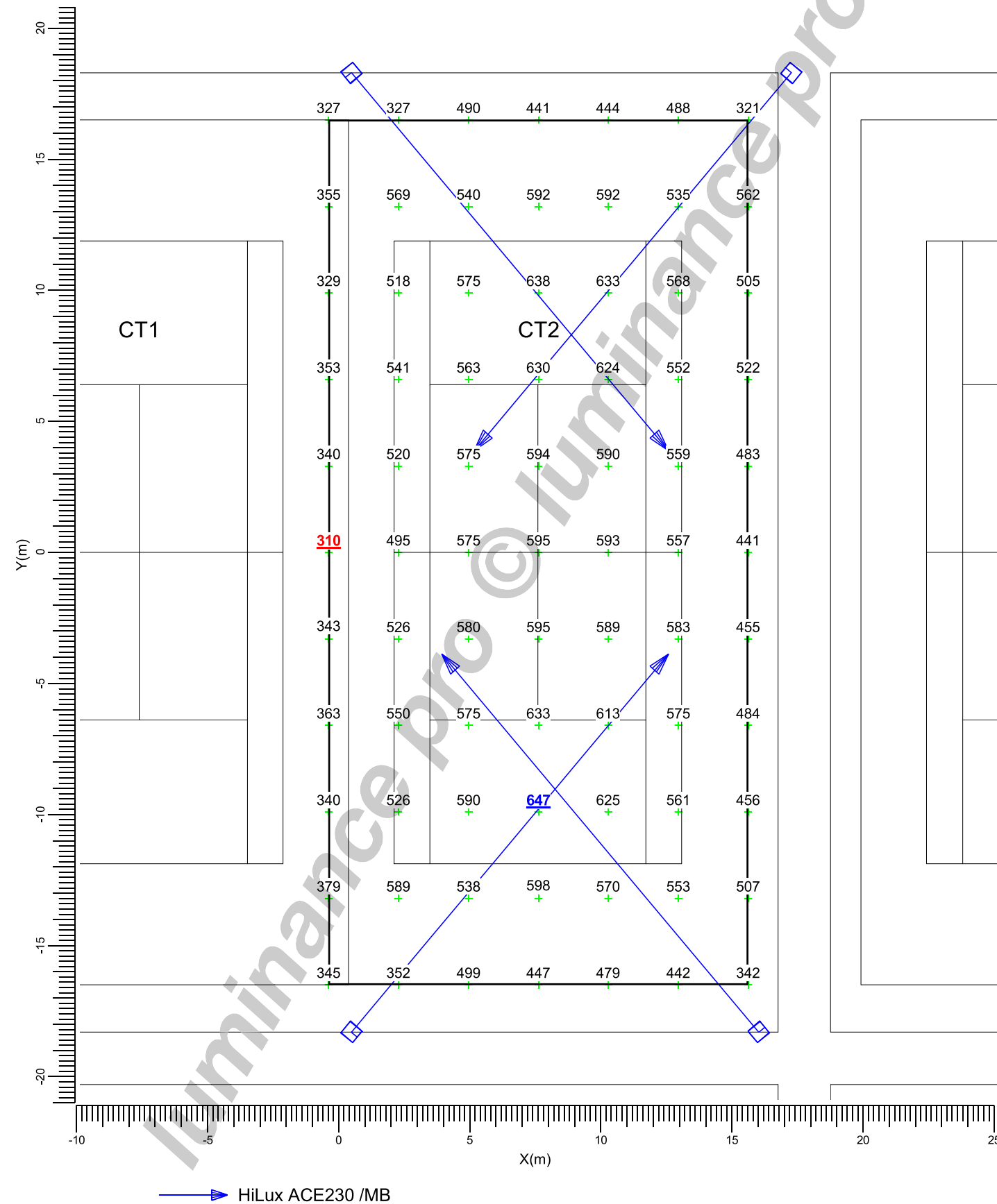
Scale
1:200

3.8 TPA2: Graphical Table

Court 2

Grid : TPA2 at Z = -0.00 m

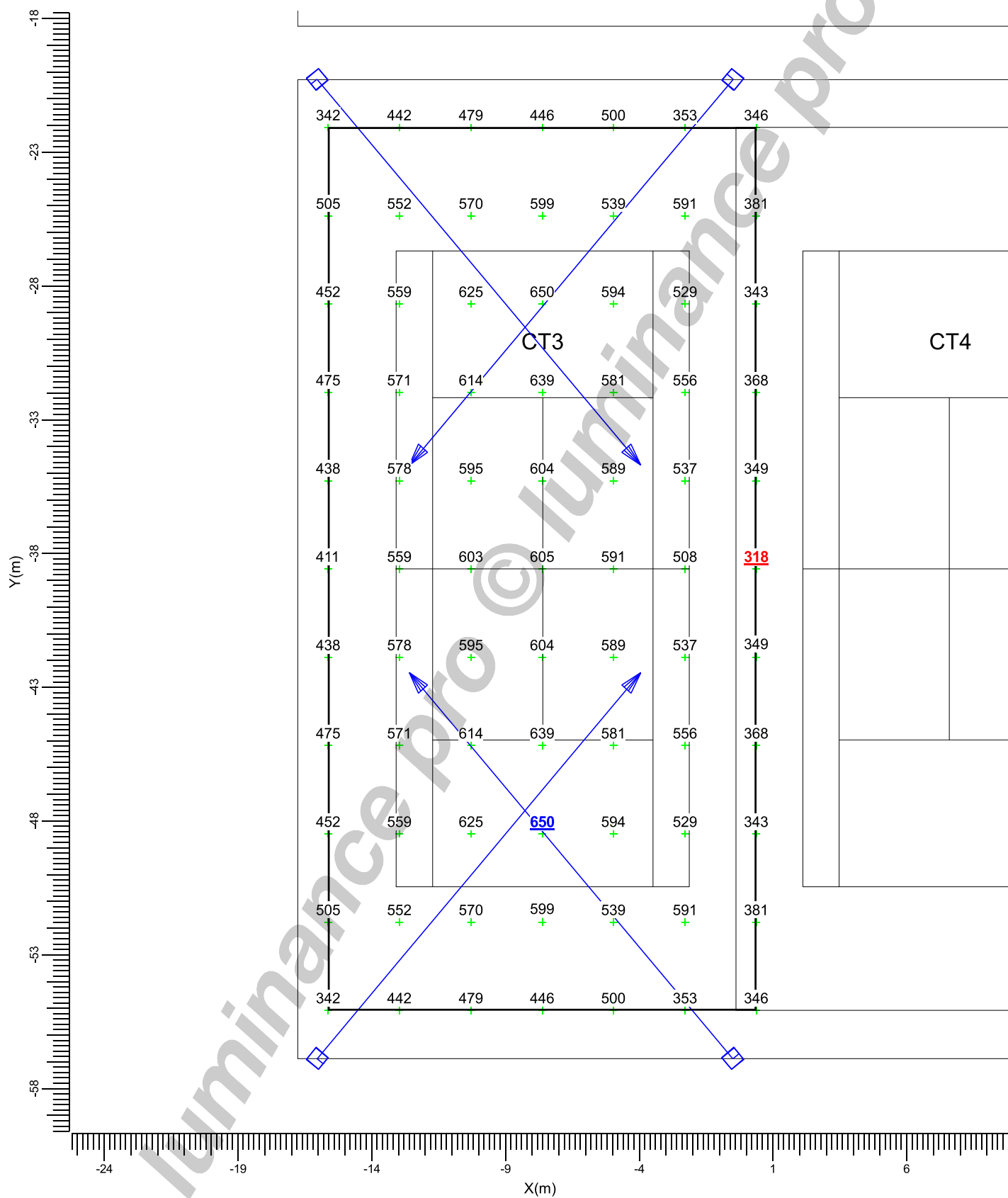
Calculation : Surface Illuminance (lux)



3.9 TPA3: Graphical Table

Court 3

Grid : TPA3 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



Average
511

Min/Ave
0.62

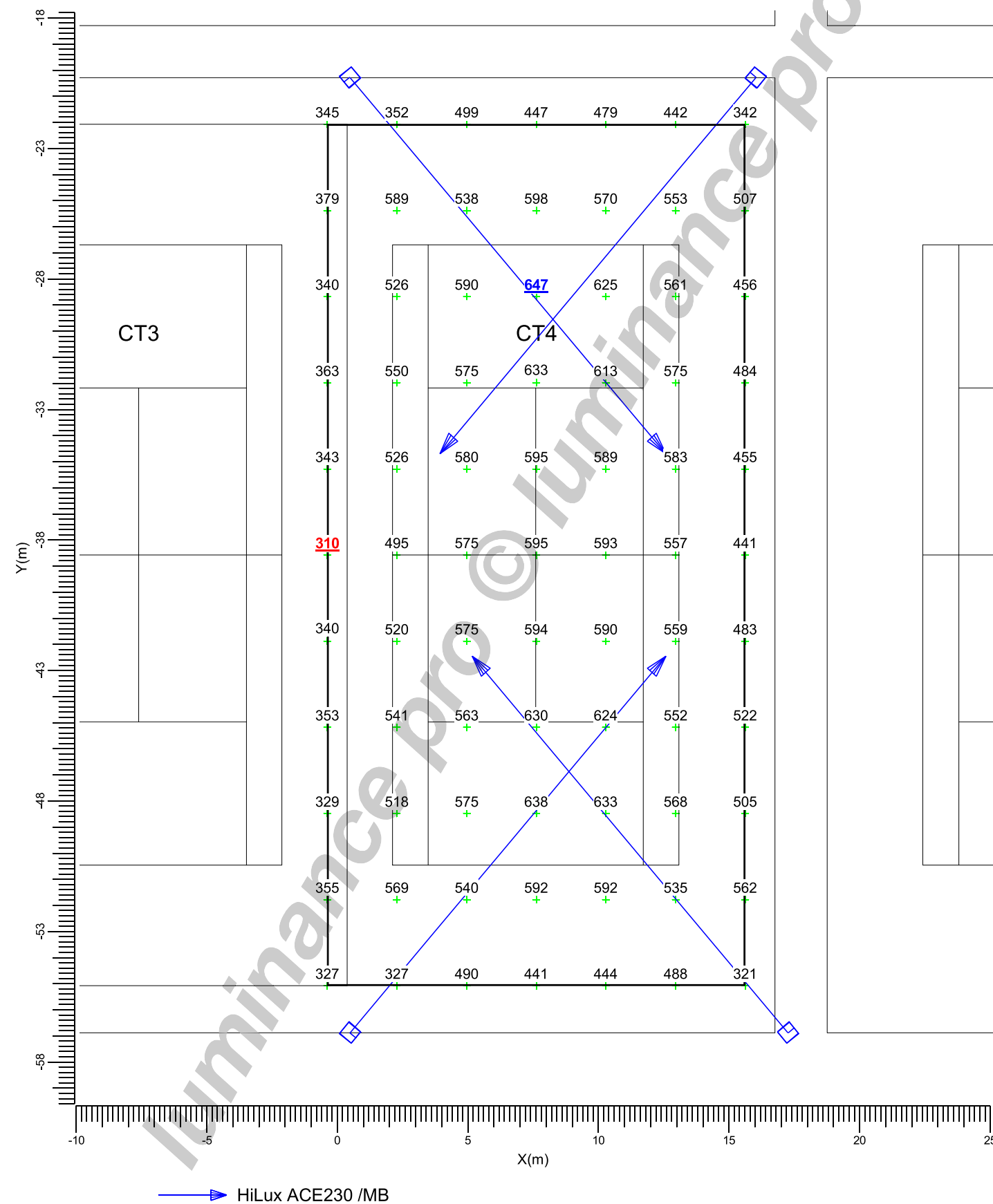
Scale
1:200

3.10 TPA4: Graphical Table

Court 4

Grid : TPA4 at Z = -0.00 m

Calculation : Surface Illuminance (lux)



Average
509

Min/Ave
0.61

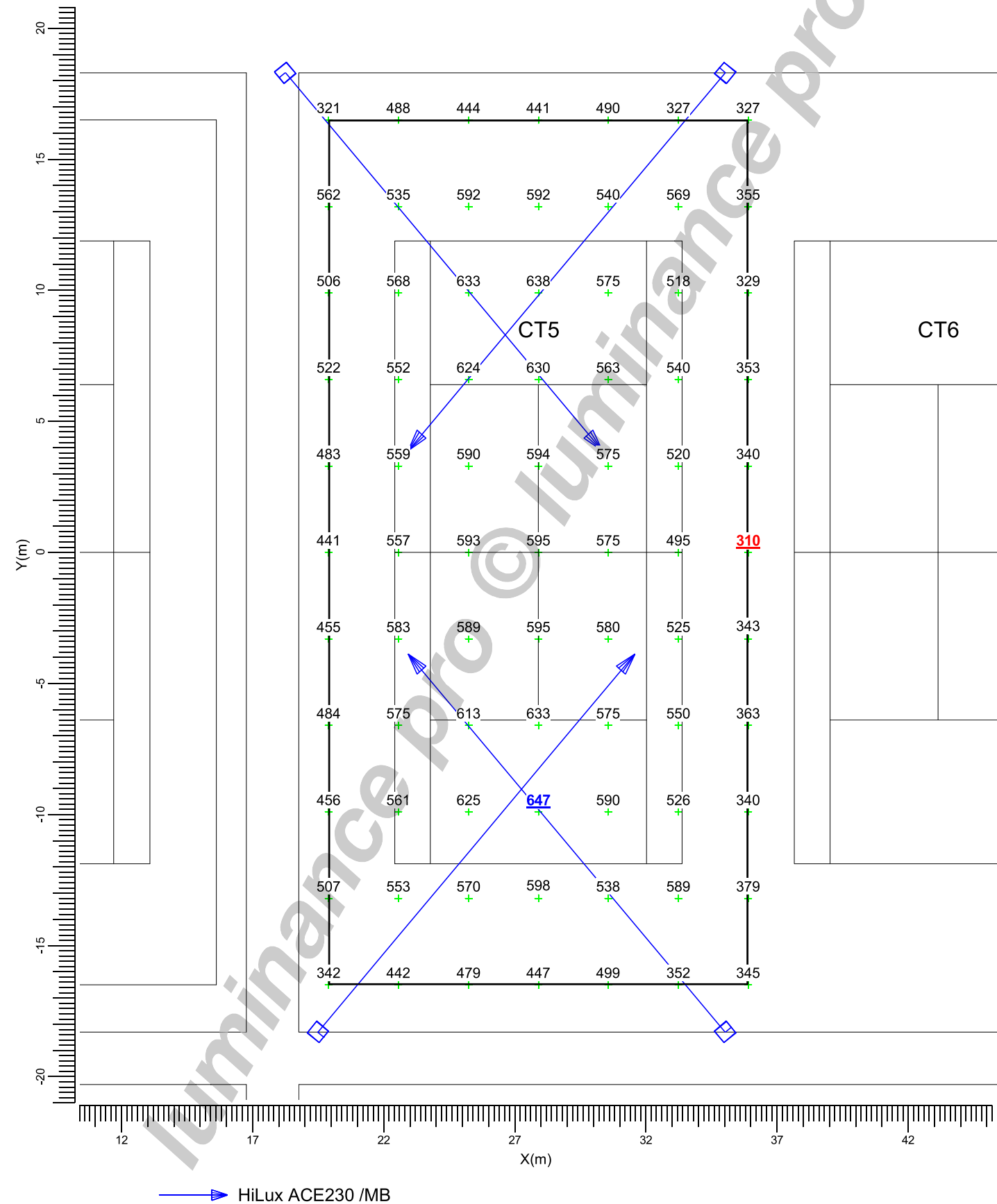
Scale
1:200

3.11 TPA5: Graphical Table

Court 5

Grid : TPA5 at Z = -0.00 m

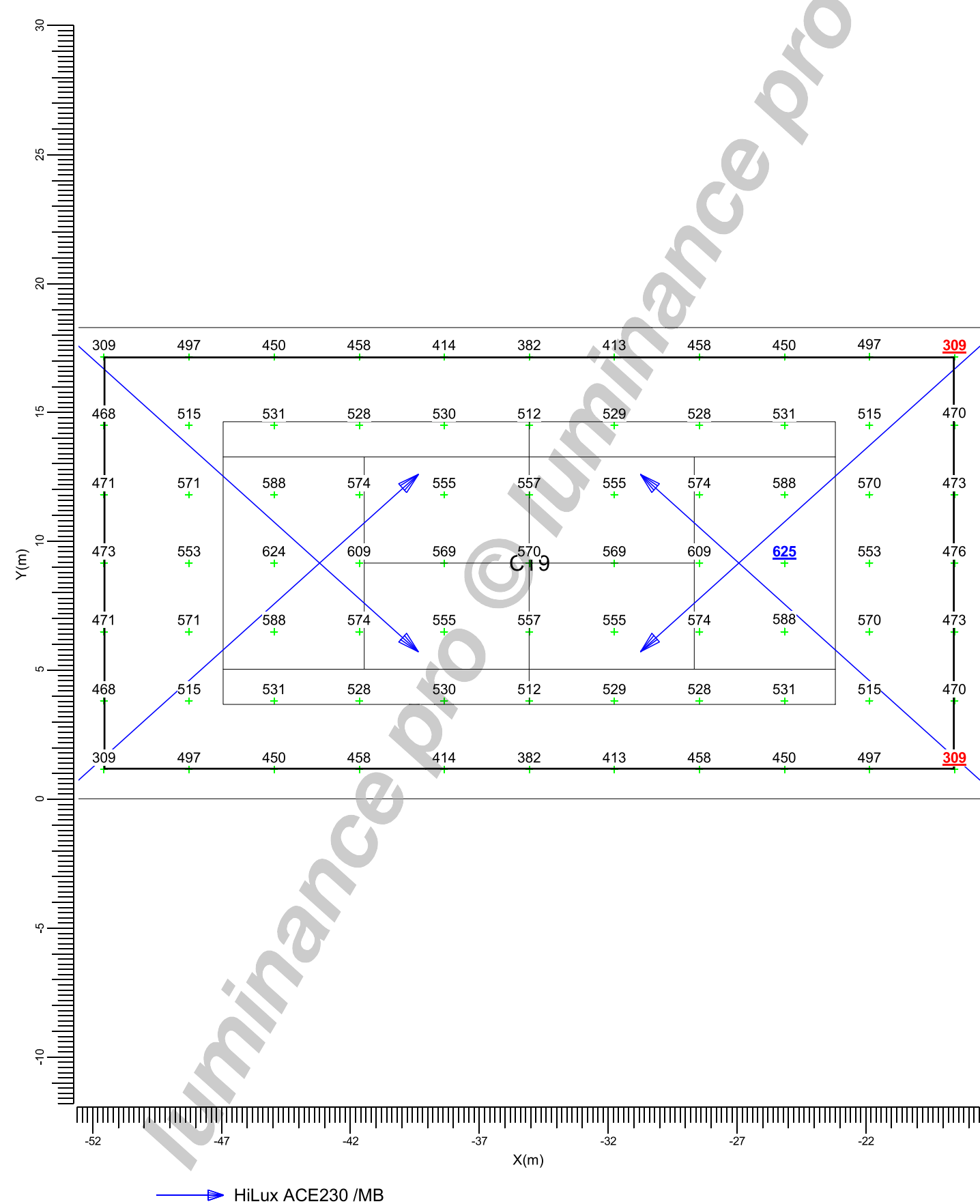
Calculation : Surface Illuminance (lux)



3.12 TPA9: Graphical Table

Court 9

Grid : TPA9 at Z = -0.00 m
Calculation : Surface Illuminance (lux)



Average
506

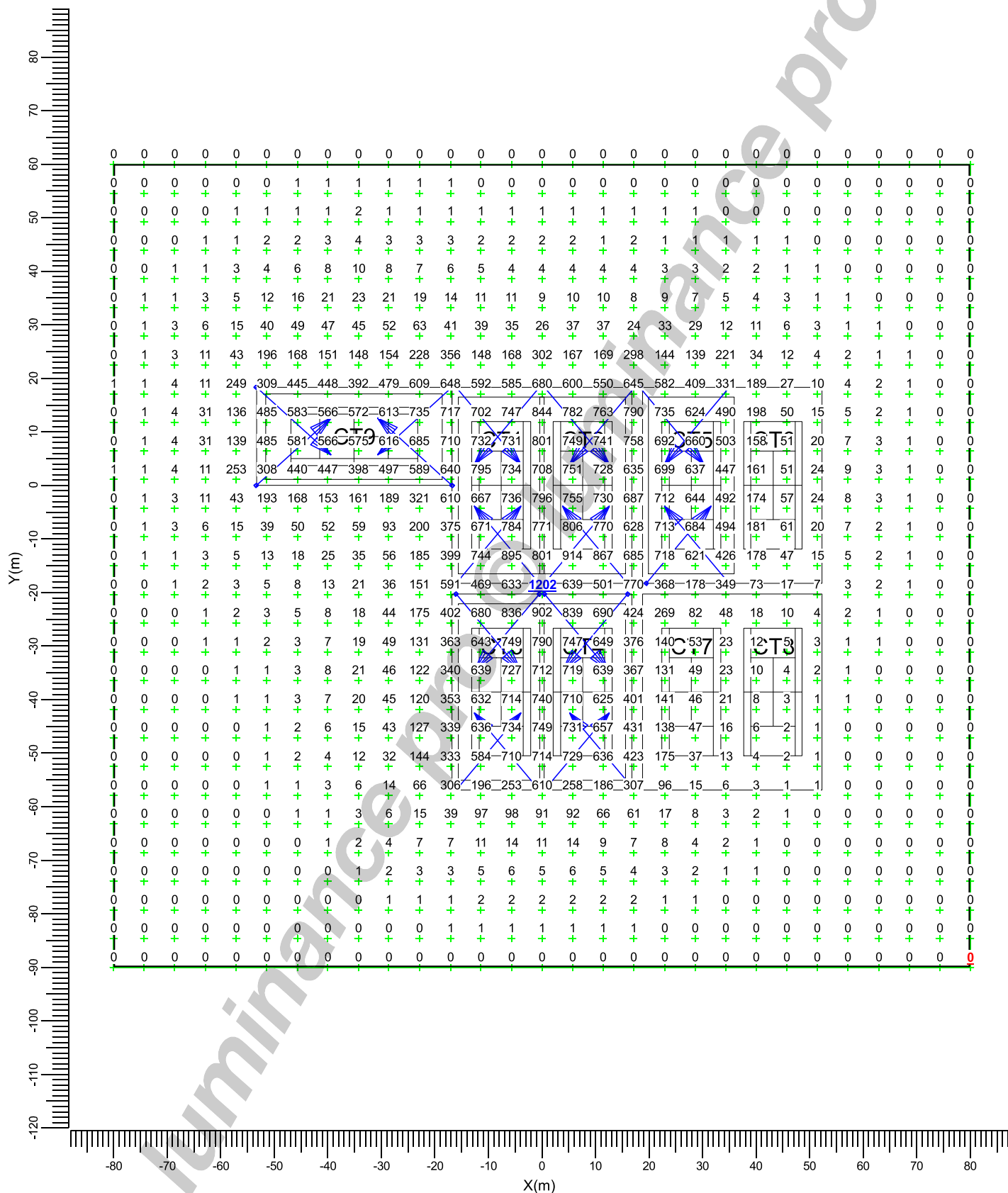
Min/Ave
0.61

Scale
1:200

3.13 Overspill: Graphical Table

All lights

Grid : Overspill at Z = -0.00 m
Calculation : Surface Illuminance (lux)

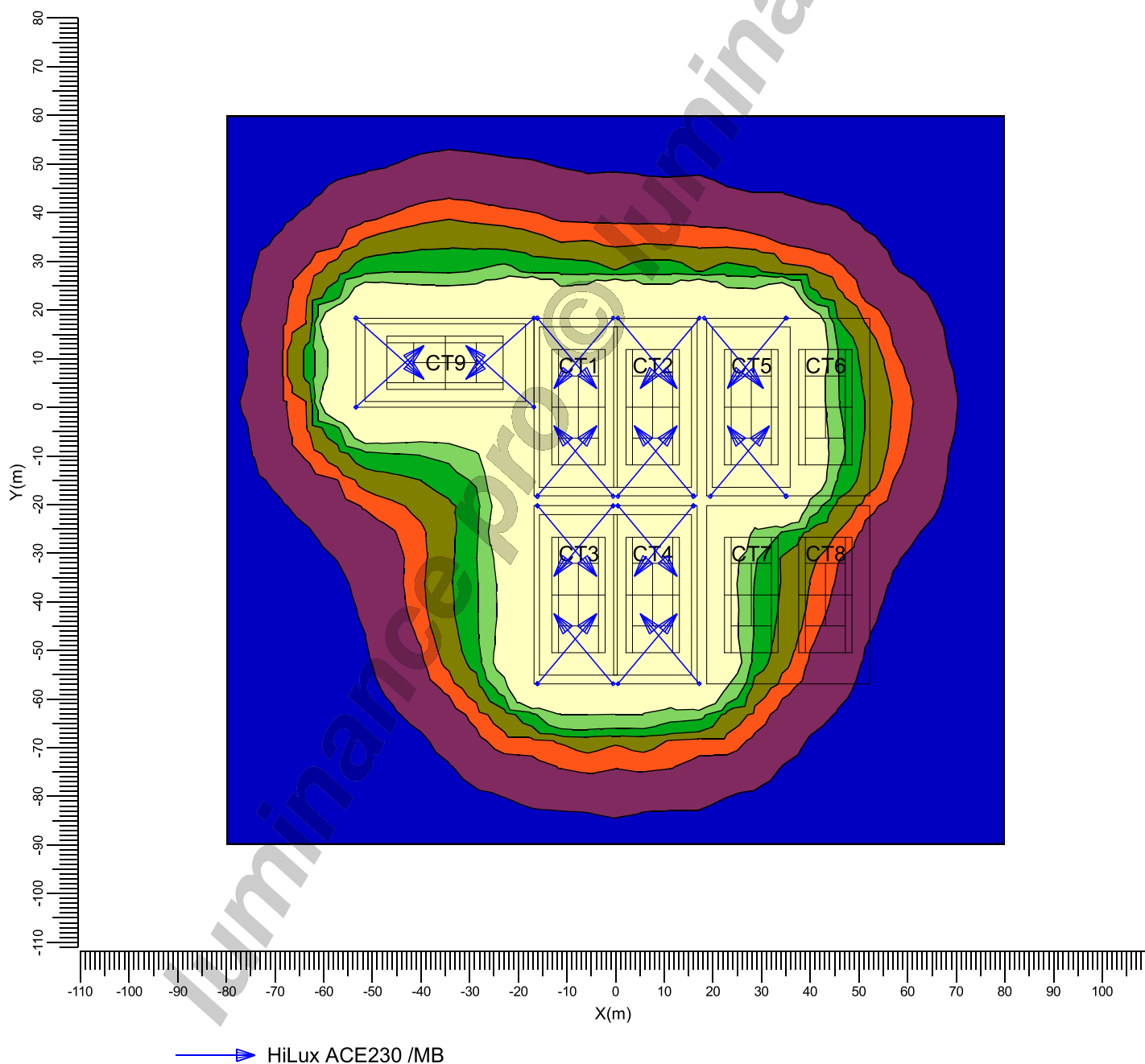
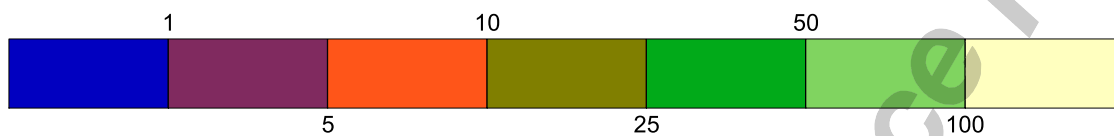


Scale
1:1000

3.14 Overspill: Filled Iso Contour

All lights

Grid : Overspill at Z = -0.00 m
Calculation : Surface Illuminance (lux)



Scale
1:1250

4. Luminaire Details

4.1 Project Luminaires



HiLux - ACE230/MB 2000W

Light output ratios

DLOR	0.82
ULOR	0.00
TLOR	0.82

Ballast

-

Lamp flux

230000 lm

Luminaire wattage

2200.0 W

Luminaire voltage

400v +/- 5%

Measurement code

114/912

Luminaire maintenance factor

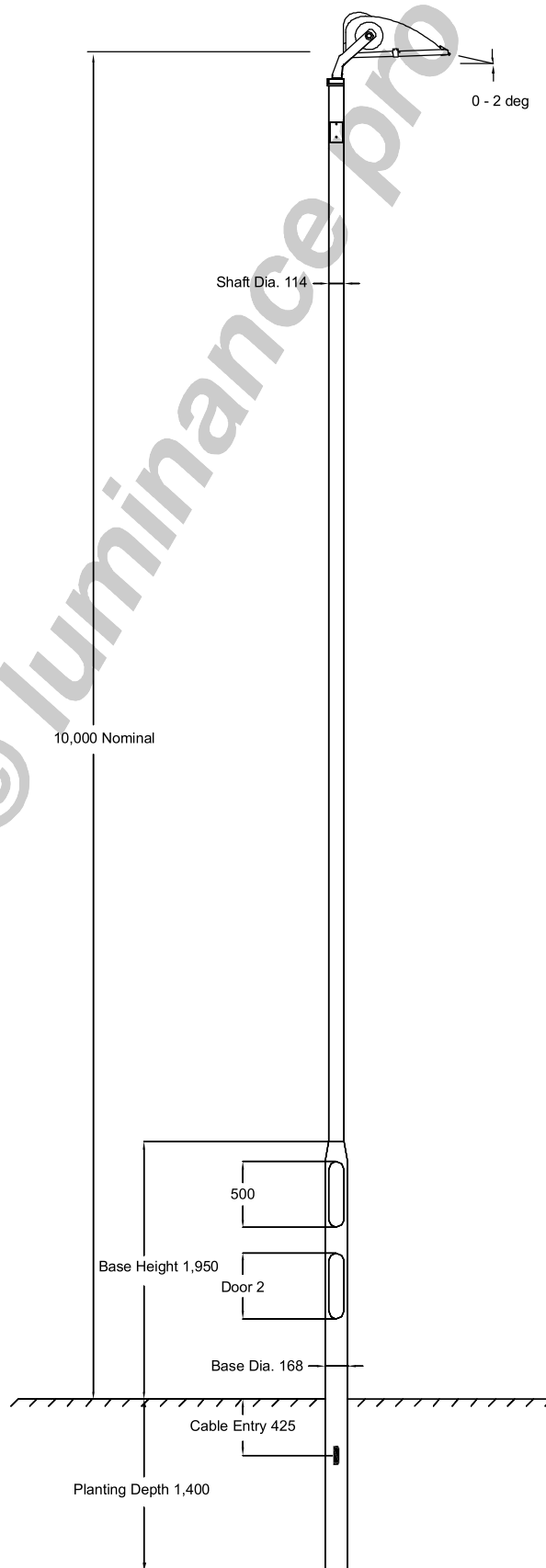
0.90

Lamp maintenance factor

0.90

Project maintenance factor

0.90



Mounting brackets available for 1, 2, 3 or 4 luminaires.

Columns are tubular, corrosion protection - hot dipgalvanized.

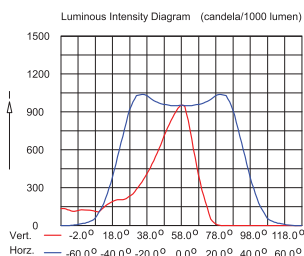
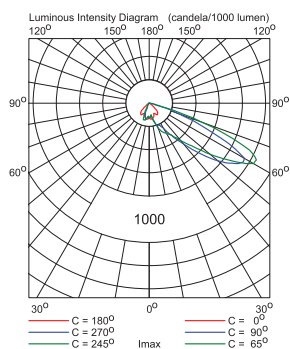


*The Ace is one in a range of
HiLux high performance luminaires
designed for use in sports lighting applications.*

Ace 230/MB

Box quantity	1
Net Weight	17.1 kg
Body colour (standard)	Aluminium
Optic	Medium beam
IP rating	IP65
Windage	0.14m ²
Mounting method	Stirrup: 3 x M20

Number of lamps	1
Lamp type	HQI-TS
Lamp power	2000 W
Lamp colour	4200 K
Lamp Access	Via front glass
Supply voltage	400v



HiLux™

Ace™

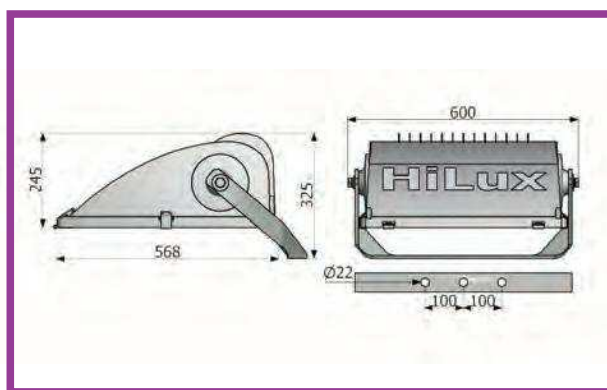
- ✓ Exceptional light control
- ✓ Flat glass asymmetric technology
- ✓ Fully shielded
- ✓ Designed for outdoor sports lighting
- ✓ Stainless steel components
- ✓ High pressure die cast aluminium
- ✓ 5mm hinged safety glass
- ✓ Computer designed reflector
- ✓ Non-tarnish reflector
- ✓ Super high reflectance material
- ✓ Super low glare reflectance material
- ✓ Heavy duty stirrup
- ✓ IP65 ingress protection
- ✓ Breather system fitted as standard
- ✓ Easy lamp change
- ✓ Pre tested
- ✓ UK manufactured
- ✓ 10 year limited warranty via direct install
- ✓ 3 year limited warranty via wholesaler distribution

Ordering codes:

ACE/230/MB Luminaire

Options

- /C Colour finish
- /FD Deflector (front)
- /LL Lamp supplied loose
- /LFT Lamp & flex installed and tested
- /G Gear supplied loose





why use the NICEIC?

The UK has a comparatively good record of electrical safety. According to government figures there are around 10 fatal and 2,000 non-fatal electric shock accidents in the home each year, and around 19 fatal and 880 non-fatal shock accidents a year in the workplace.

However, there are about 12,500 electrical fires in homes across the UK each year. Although many incidents are caused by faulty appliances rather than the electrical installation itself, a properly installed and well-maintained installation could save lives.

The **NICEIC**'s independence assures consumers and specifiers that all installation work done by an NICEIC Approved Contractor will meet electrical safety requirements. The list of our Approved Contractors can be accessed on this website, and is updated weekly. A CD-ROM version of the Roll is also available on request.

Approved Contractors are required to issue a safety certificate for all their electrical work to confirm that the installation has been designed, constructed, inspected and tested in accordance with the national electrical safety standard, **BS 7671** - Requirements for Electrical Installations. A Periodic Inspection Report (PIR) is issued when a report on the condition of an existing installation is required.

The NICEIC investigates all complaints that Approved Contractors have not complied with the appropriate technical standard and we operate a **Complaints Procedure** and **Guarantee of Standards Scheme**.

Householders have peace of mind knowing that all electrical work undertaken by an Approved Contractor will be safe. Approximately 90% of local authorities in the UK are believed to restrict work to NICEIC Approved Contractors on safety grounds.



guarantee of standards

The NICEIC expects its Approved Contractors to provide quality services to customers so, subject to certain limitations and conditions, we endeavour to resolve all complaints about the technical standard of their electrical work.

If a customer and an Approved Contractor are unable to resolve an alleged deficiency in the technical standard of electrical work, the customer can make a formal complaint to the NICEIC. See our [Complaints](#) page for the procedure.

If an Approved Contractor does not undertake the required remedial work, The NICEIC [Guarantee of Standards Scheme](#) ensures it will be done by another Approved Contractor, at no cost to the consumer.

The Scheme applies to:

- completed electrical installation work ie: work for which an Electrical Installation Certificate has been issued.
- the safety and standard of workmanship of any electrical installation that is the subject of a complaint by the client or user of the installation.
- the 12-month period from the date the installation was put into service, or from the date the 'inspection and test' section of the Electrical Installation Certificate for the work was signed, whichever expires first.

The Scheme does not apply to:

- the work of Approved Contractors covered by a Trade Association Guarantee.
- contracts under which the customer is indemnified by an insurance or other bond.
- work carried out by Approved Contractors that have closed their businesses and/or gone into liquidation. This is considered a commercial risk against which specifiers and consumers should make suitable arrangements.
- consequential and/or contingent liabilities including personal injury or death arising from the work of an Approved Contractor being below the required standard.
- the inspection and testing of electrical equipment, which does not form part of a fixed electrical installation and/or any claim resulting from such work.

The financial limit for remedial work is £10,000, on the work associated with any one contract or related series of contracts.

All decisions regarding the application and interpretation of the NICEIC Guarantee of Standards Scheme, the safety and standard of workmanship of an electrical installation and remedial work required, rest solely with the National Inspection Council. Any essential remedial work deemed necessary by the NICEIC will be carried out by an Approved Contractor appointed by the National Inspection Council.

The NICEIC Guarantee of Standards Scheme provides benefits in addition to legal and statutory rights. The Scheme does not reduce or modify those rights.

The current terms and conditions relating to the [Guarantee of Standards Scheme](#) can be downloaded [here](#):



why use an approved contractor?

About 12,500 fires a year are reported as having an electrical source, which includes faulty or inadequate wiring.

Cables, switches, socket-outlets and other equipment deteriorate with prolonged use, so they all need to be checked and necessary replacements or repairs made in good time.

Our aim is to protect everyone who uses electricity from unsafe electrical installations in their homes, places of work and leisure. In order to achieve this, we maintain a register (Roll) of electrical contractors that we have assessed as complying with the Council's rules. The assessment covers a representative sample of the contractors' electrical work, their premises and documentation, and the competence of their key supervisory staff. Once contractors become NICEIC Approved Electrical Contractors, they are re-assessed every year by one of the Council's Area Engineers to confirm that their business and the technical standard of their electrical work continue to comply with the Council's rules.

Enrolment with the NICEIC is voluntary, but electrical contractors that are competent and conscientious about the service they offer customers would consider it a priority to enrol.

There are more than 10,500 Approved Contractors on the Roll, covering the whole of the UK, including Northern Ireland. This means that you're sure to have a choice of Approved Contractors operating in your area. You can find an Approved Contractor by searching the **Roll of Approved Contractors** by postcode.

It is imperative that electrical work is carried out only by those with the necessary knowledge, skill and experience of the type of electrical work to be undertaken to enable them to avoid the dangers to themselves and others that electricity can create. It's easy to make an electrical circuit work - it's far more demanding to make the circuit work safely. Safety for you in your home is paramount; therefore the NICEIC strongly recommends that you choose an Approved Contractor to carry out your electrical work.

As a further guarantee of good work, all NICEIC Approved Contractors must issue certificates for all work carried out in accordance with the national standard **BS 7671**, Our **Certificates** page gives more details.

In the rare cases where a consumer is not satisfied with the technical standard of an Approved Contractor's electrical work, the NICEIC offers a complaints resolution service. The NICEIC expects its Approved Contractors to provide quality services to customers so, subject to certain limitations and conditions, we endeavour to resolve all complaints about the technical standard of their work. If a customer and an Approved Contractor are unable to resolve an alleged deficiency in the technical standard of electrical work, the customer can make a formal complaint to the NICEIC. All complaints falling within the scope of the NICEIC complaints procedure will be investigated and where a complaint is substantiated, the deficiency will be rectified at no additional cost to you. See our **Complaints** section for more details.

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