CI/SfB | | (63) | X | |
CAWS V21 V40 V41 V42

Whitecroft lighting

Softcell 3

Complete Performance

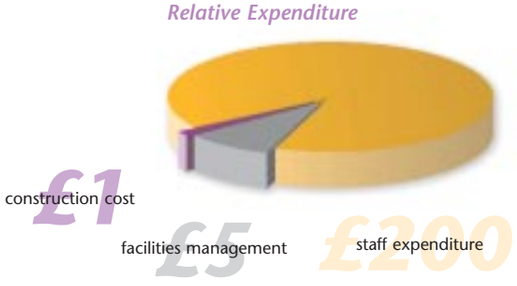
Softcell 3 - *Compliant solutions*

THE VISION

Since environmental issues were highlighted in LG3:1996, the following considerations have driven our product development in office lighting.

An analysis entitled 'The Long-term Costs of Owning and Using Buildings, Evans, Harigott, Haste & Jones. Royal Academy of Engineering, November 1998' is widely quoted by progressive people in the UK Construction Industry. This shows that in the life of a typical building:

- If initial construction cost = 1
- FM or operating costs = 5
- The cost of people in the building = 200



These considerations, when combined with the fact light is a prime physiological human need emphasise we must optimise the lit environment if businesses are to get the best return on their biggest cost. Numerous studies show environmental factors have a significant impact on people performance.

Medical experts have commented on the effect oppressive environments delivered by conventional Cat 2 recessed luminaires can have on people working intensively on computer screens.

- Poor environments with high illumination on the working plane but dark ceilings and upper walls (the cave effect) force the eyeball to frequently adapt to abrupt changes in brightness as the head moves. This causes eye strain and headaches.
- Clinical psychologists express concern that such environments will affect morale, particularly among members of staff prone to SAD (Seasonally adjusted disorder).
- There is a general view that better lit environments will reduce absenteeism.

The above issues are wholly supportive of the emphasis LG3:1996 and the 2001 addendum place on the lit environment. The impact on staff retention and productivity is discussed in detail in our brochure '**Energising the Office**'.

PRODUCT EVOLUTION

Technology employed in offices has expanded exponentially in the last 20 years. The impact lighting can have on the effectiveness of the activities performed within the space is now widely recognised. In full compliance with the recommendations of LG3:2001 and LG7:2004, Softcell 3 provides a single solution allowing lit environments to fully comply.

1996

Softcell 1

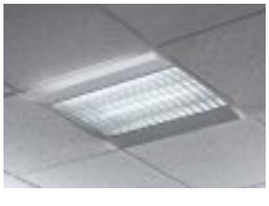
Taking advantage of higher brightness limits permitted in LG3:1996, these products relieve oppressive cave effects associated with louvred Cat 2.200 luminaires while avoiding the eyeball scorching brightness of basket concepts.

- A combination of direct and indirect light 'softens' the brightness of the coffer avoiding an abrupt contrast between coffer and adjacent tiles.
- The concept has since been widely copied and further developed by ourselves with the 'Cirrus' T5 range.

It can still be the best compromise if no projection below the ceiling is permitted.

with a single product

1998



Vivant

Following intensive market research in 1998/9, Vivant was developed in anticipation of LG3:2001. It embodies unique technology.

- The living louvre and the periscopic projection of light eliminate shadows on all 4 walls and deliver an injection of life and spill of light onto the ceiling.
- The 'Softlighter' optic ensures exceptional visual comfort.

Vivant builds further on the benefits of the original Softcell while a projection below the ceiling of only 28mm ensures it is not visually intrusive. This makes it an ideal solution for any office.

2003

Softcell 3

The only LG3:2001 issues not met by Vivant are the 30% and 50% levels for ceilings and walls relative to the working plane average.

- Softcell 3 addresses this issue at normal 70:50:20 reflectances without including luminaire coffers in ceiling calculations. This necessitated an increased projection below the ceiling but the aerofoil is designed to minimise any sense of visual intrusion.
- Walls and ceiling are evenly washed and abrupt luminance change avoided.

When anti reflective screens using positive polarity software are employed, Softcell 3 allows spaces to fully comply using a single solution.

Softcell 3

MOTIVATION

LG3:2001 compliance requires that the issues pertinent to each individual environment be specifically addressed. However:

- Softcell 3 offers a single solution delivering total and unequivocal LG3:2001 compliance at normal 70:50:20 reflectance values; in any situation with modern anti reflective screens using positive polarity software.
- By eliminating distracting and depressing shadow and increasing the illuminance of walls and ceiling, a motivational and visually comfortable environment beneficial to productivity and staff retention is delivered.

Softcell 3 is equally sensitive to the need to deliver low cost of ownership.

- The entire range delivers high efficiency and uses T5 lamps and fully meets the requirements of Part L2 of the building regulations for offices without the need for controls.
- Maintenance costs are minimised with access to lamps and gear possible in seconds.

Aesthetic issues were also to the fore in our thinking.

- If LG3:2001 is to be satisfied with a single product solution, projection below the ceiling is inevitable. The aesthetic of the aerofoil minimises the sense of visual intrusion.

Softcell 3 recognises the need to avoid disruption to 'Coanda' effect.

- In the transverse direction tests on Softcell 3 show no disruption to Coanda effect. *Whitecroft thank Waterloo Air Management for their assistance.*

A winning concept deserves wide application.

- Softcell 3 is a comprehensive product family with semi-recessed and surface options as standard. Suspended versions could be offered to meet special project needs.

Softcell 3 – Recessed ceiling mount

Softcell 3 – Surface ceiling mount

Softcell 3 – Concealed mounting rail

SPECIFICATION

Aerofoil

- Lamp options
  - 500mm aerofoil - 3 or 4 x 14W
  - 600mm aerofoil - 3 or 4 x 14 or 24W
- Control gear, lamps and 3 hour integral emergency pack contained within aerofoil assembly
- Aerofoil in 0.8mm gauge perforated steel
- Finished RAL 9010, 30% gloss
- One piece colour coded end-caps in injection moulded polycarbonate
- High frequency or regulating gear as standard
- Miro 5 zero iridescent semi-specular curved nose louvre.
- Access for maintenance in seconds. No tools required. Aerofoil assembly retained on steel cords
- No disruption to Coanda effect in the transverse direction
- LOR 600 x 600mm; 4 x 14W - 0.64, 4 x 24W - 0.69 with recessed mount, 0.67 and 0.72 with concealed mounting rail
- Air handling as standard 20 litres per second
- Lamps not supplied, 4000°K recommended
- Flying lead and socket option for easy installation

Ceiling mounts

- 600 x 600mm and 500 x 500mm recessed ceiling mounts in 0.8mm guage steel designed to replace a complete tile
- 600mm concealed mounting rail designed to pass through a cut tile
- 600mm surface mount

APPLICATION

Areas requiring full LG3:2001 compliance.

- Commercial offices
- Receptions
- Conference rooms
- Board rooms

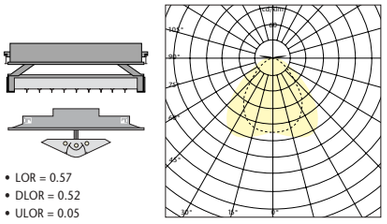
3 and 4 x 24W options offer particularly good lumen packages for retail users seeking to create a customer friendly ambience.

- Ambient lighting in department stores.
- Car showrooms
- Banks, both customer and back of house.
- Other high street service providers
  - – Building societies
  - – Travel agents
  - – Job centres etc

Access for maintenance in seconds

Photometry

Softcell 3
600 x 600 - RECESSED MOUNT
3 x 14W T5 Lamps

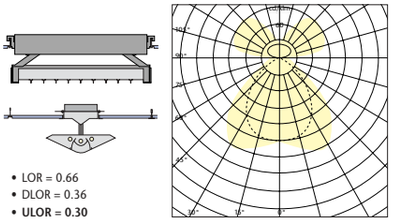


- LOR = 0.57
- DLOR = 0.52
- ULOR = 0.05
- SHR MAX = 1.77

UTILISATION FACTORS UF(F) SHR NOM = 1.75

Room Reflectance			Room Index								
C	W	F	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
0.70	0.50	0.20	N/A	0.42	0.46	0.48	0.51	0.54	0.55	0.57	0.59
0.50	0.30	0.20	N/A	0.38	0.41	0.43	0.46	0.49	0.50	0.52	0.54
0.00	0.00	0.00	N/A	0.33	0.35	0.37	0.40	0.42	0.43	0.45	0.47

Softcell 3
600 x 600 - CONCEALED MOUNTING RAIL
3 x 14W T5 Lamps

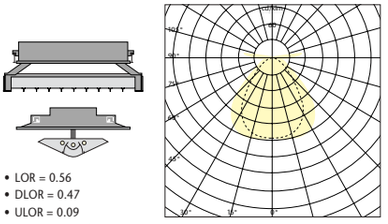


- LOR = 0.66
- DLOR = 0.36
- **ULOR = 0.30**
- **SHR MAX = 1.75**

UTILISATION FACTORS UF(F) SHR NOM = 1.50

Room Reflectance			Room Index								
C	W	F	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
0.70	0.50	0.20	0.36	0.40	0.44	0.47	0.51	0.54	0.56	0.58	0.60
0.50	0.30	0.20	0.29	0.33	0.36	0.39	0.42	0.45	0.46	0.49	0.50
0.00	0.00	0.00	0.20	0.23	0.25	0.26	0.28	0.30	0.31	0.32	0.33

Softcell 3
500 x 500 - RECESSED MOUNT
3 x 14W T5 Lamps

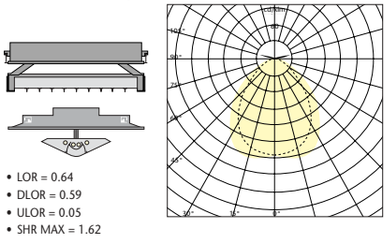


- LOR = 0.56
- DLOR = 0.47
- ULOR = 0.09
- SHR MAX = 1.63

UTILISATION FACTORS UF(F) SHR NOM = 1.50

Room Reflectance			Room Index								
C	W	F	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
0.70	0.50	0.20	0.36	0.40	0.43	0.46	0.49	0.51	0.53	0.55	0.56
0.50	0.30	0.20	0.31	0.35	0.38	0.40	0.43	0.46	0.47	0.49	0.51
0.00	0.00	0.00	0.26	0.29	0.32	0.34	0.36	0.38	0.39	0.41	0.42

Softcell 3
600 x 600 - RECESSED MOUNT
4 x 14W T5 Lamps



- LOR = 0.64
- DLOR = 0.59
- ULOR = 0.05
- SHR MAX = 1.62

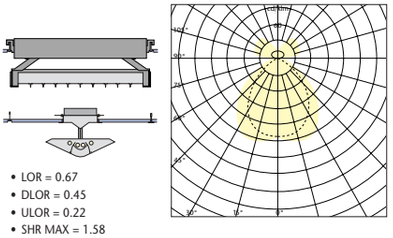
UTILISATION FACTORS UF(F) SHR NOM = 1.50

Room Reflectance			Room Index								
C	W	F	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
0.70	0.50	0.20	0.42	0.47	0.51	0.54	0.58	0.60	0.62	0.64	0.66
0.50	0.30	0.20	0.37	0.42	0.46	0.48	0.52	0.55	0.56	0.59	0.60
0.00	0.00	0.00	0.32	0.36	0.40	0.42	0.45	0.47	0.49	0.51	0.52

CONVERSION FACTORS FOR 24W OPTIONS

1.11 – 3 lamp, 1.08 – 4 lamp

Softcell 3
600 x 600 - CONCEALED MOUNTING RAIL
4 x 14W T5 Lamps

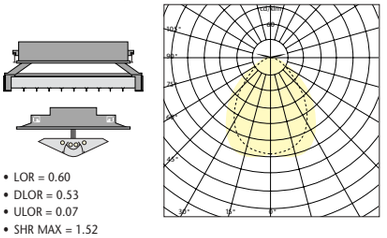


- LOR = 0.67
- DLOR = 0.45
- ULOR = 0.22
- SHR MAX = 1.58

UTILISATION FACTORS UF(F) SHR NOM = 1.50

Room Reflectance			Room Index								
C	W	F	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
0.70	0.50	0.20	0.40	0.45	0.49	0.51	0.56	0.58	0.60	0.62	0.64
0.50	0.30	0.20	0.34	0.38	0.42	0.44	0.48	0.50	0.52	0.54	0.55
0.00	0.00	0.00	0.26	0.29	0.32	0.34	0.36	0.37	0.38	0.40	0.41

Softcell 3
500 x 500 - RECESSED MOUNT
4 x 14W T5 Lamps



- LOR = 0.60
- DLOR = 0.53
- ULOR = 0.07
- SHR MAX = 1.52

UTILISATION FACTORS UF(F) SHR NOM = 1.50

Room Reflectance			Room Index								
C	W	F	0.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00
0.70	0.50	0.20	0.40	0.45	0.48	0.51	0.54	0.56	0.58	0.60	0.61
0.50	0.30	0.20	0.36	0.40	0.43	0.46	0.49	0.51	0.53	0.55	0.56
0.00	0.00	0.00	0.31	0.34	0.37	0.39	0.42	0.44	0.45	0.47	0.48

Softcell 3 *Lamp Performance Matrix*

LAMP TYPE	TOTAL LUMEN OUTPUT 250C	TOTAL CIRCUIT WATTS	LUMENS PER CIRCUIT WATT
3 x 14W	3600	50	72
4 x 14W	4800	66	73
3 x 24W	5250	78	67
4 x 24W	7000	102	69

Order Codes

Softcell 3 *Aerofoils*

ORDER CODES

LG3:2001 COMPLIANT ENVIRONMENTS DELIVERED WITH A SINGLE SOLUTION

AEROFOIL ORDER CODE	CEILING MOUNT OPTIONS	DESCRIPTION	LAMP
SOF3W5H314	A, B, C or E	600mm aerofoil	3 x 14
SOF3W5H414	A, B, C or E	600mm aerofoil	4 x 14
SOF3W5H324	A, B, C or E	600mm aerofoil	3 x 24
SOF3W5H424	A, B, C or E	600mm aerofoil	4 x 24
SOF35W5H314	D	500mm aerofoil	3 x 14
SOF35W5H414	D	500mm aerofoil	4 x 14

NOTE - *Versions with 24W T5 HO lamps exceed the LG3:2001 brightness limits but this will not be an issue with flat plasma screens.*

OPTIONS *Amend order code*

R - High frequency regulating gear, replace the H in the above order codes with R. i.e. SOF3W5R314

OPTIONS *Add suffix to order code*

EMIN - 3 hour integral emergency i.e. SOF3W5R314EMIN

LUMINAIRE CONNECTION LEADS - *See CPDM brochure, otherwise please advise requirements.*

A complete luminaire requires an aerofoil and the appropriate ceiling mount. To confirm a ceiling mount can be used with a given aerofoil, check ceiling mount options in the tables opposite.

Softcell 3 *Ceiling Mounts*

ORDER CODES

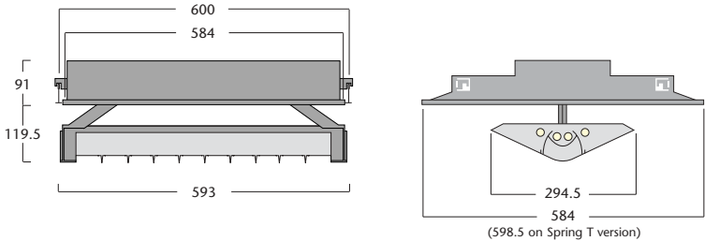
LG3:2001 COMPLIANT ENVIRONMENTS DELIVERED WITH A SINGLE SOLUTION

CEILING MOUNT ORDER CODE	OPTIONS (SEE ABOVE)	DESCRIPTION
SOF3600XT	A	Recessed ceiling mount to replace 600 x 600 tile – exposed T
SOF3600ST	B	Recessed ceiling mount to replace 600 x 600 tile – spring T
SOF3600MRXT	C	Concealed mounting rail for 600 x 600 exposed T ceiling aerofoil engaging via a slot in the tile.
SOF3500XT	D	Recessed ceiling mount to replace 500 x 500 tile – exposed T
SOF3600SM	E	Surface ceiling mount for 600mm aerofoil

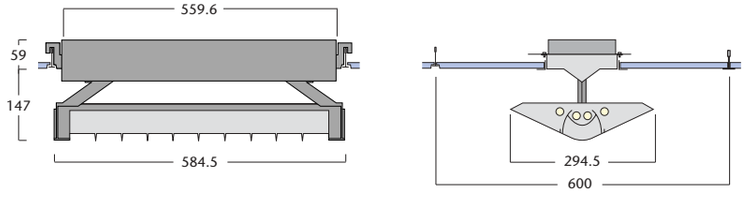
To specify state:
Architectural T5 luminaire offering semi-recessed and surface options in a single family aesthetic, all delivering 50% of average working plane illuminance on walls and 30% on ceilings while avoiding abrupt luminance change. Curved nose louvre to 60mm radius in Miro 5 material. Aerofoil cross section - depth 77mm, width 295mm, with 2mm perforation. No disruption to Coanda in the transverse - As Whitecroft SOFTCELL 3

Softcell 3 *Dimensions*

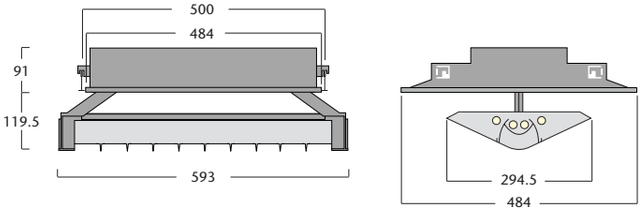
Recessed mount 600 x 600 - 3/4 x 14/24W



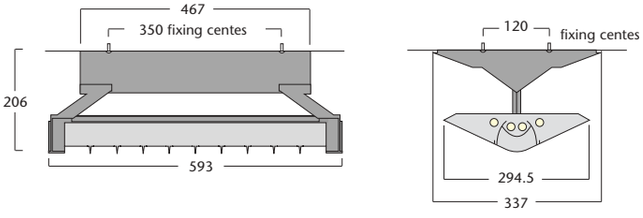
600mm concealed mounting rail - 3/4 x 14/24W



Recessed mount 500 x 500 - 3/4 x 14W



600mm surface mount 3/4 x 14/24W



Softcell 3 *Specifiers Check List*

LG3:2001 ISSUE	ACHIEVED BY SOFTCELL 3 ?
At 65^{0} elevation angle is the luminance below 1500cd/m^{2} limit for anti reflective screens using positive polarity software	Yes for T5 HE versions but not for T5 HO versions. See order codes.
Are high luminance patches in the space (e.g. bright scallops on walls) and abrupt changes in luminance across surfaces or between adjacent surfaces avoided	Yes
Is 30% average for ceiling and 50% for walls as a % of the average working plane illuminance achieved using 70:50:20 room surface reflectances	Yes
Does the ceiling calculation exclude the luminaire coffer/tiles only	Yes
Does the luminaire optic avoid an abrupt cut off in luminous output	Yes

OTHER OFFICE LIGHTING ISSUES.	
Cost of ownership/Life cycle cost - energy	T5 lamps used throughout, 600 x 600 LOR - 4 x 14W - 0.64, 4 x 24W - 0.69 with recessed mount, 0.67 and 0.72 with concealed mounting rail
Cost of ownership/Life cycle cost - maintenance	Access to lamps and gear in seconds, flying leads optional.
Aesthetics	Visual link – aerofoil to coffer, curved nose louvre.
Coanda effect/Airflow across ceiling	Tested - No disruption in the transverse.

Whitecroft lighting

ENERGISING THE OFFICE

Whitecroft Lighting Limited
Burlington Street
Ashton-under-Lyne
Lancashire OL7 0AX
United Kingdom

Telephone: +44 (0)870 5087 087
Facsimile: +44 (0)870 5084 210
email@whitecroftlight.com
www.whitecroftlighting.com

Design & Production - www.orchardcorporate.com