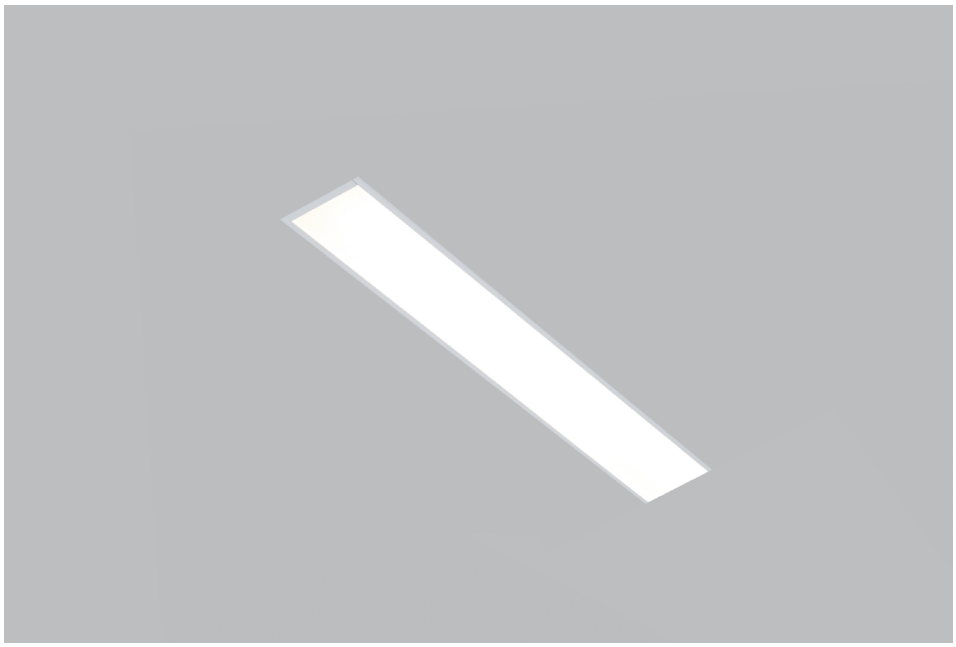
VILINE 100x600

TM65ANZ



DIMENSIONS
95x595mm

WEIGHT
0.7kg

COLOUR TEMPERATURE
4000K

COLOUR RENDERING
95Ra, R9>80

DIRECT OUTPUT
550-1400lm

LED LIFETIME
L95 @50,000h

DRIVER LIFETIME
100,000h

WEIGHT AND COMPOSITION BY MATERIAL

Material	Weight (g)	Weight (%)	GWP (kgCO2e)
GLOBAL ALUMINIUM	317.4	30.7	4.16
COPPER	11.6	1.1	0.04
PLASTICS	159.5	15.4	0.62
STEEL	26.2	2.5	0.08
ELECTRONIC COMPONENTS	378.2	36.6	11.04
CARD	141.5	13.7	0.26

Note: LED driver has been excluded. Driver EPD provided on request.

RESULTS

TM65 Calculation		
ASSESSMENT PARAMETER		**GLOBAL WARMING POTENTIAL (GWP)**
UNIT	-	[kg CO2 eq]
PRODUCTION	A1—A4	21.9
REPAIR	B3	0.834
END-OF-LIFE	C2—C4	0.197
TOTAL (x1.3 BUFFER)	**A1—C4**	**22.9**

TM65ANZ SUMMARY

TM65ANZ is an engineering standard published by the Chartered Institution of Building Services Engineers (CIBSE). It provides a clear and concise framework to estimate the embodied carbon of a product when environmental product declarations (EPD's) are not available. In order to appropriately use a TM65ANZ calculation it is important to understand the scope of the method.

Originally created in the United Kingdom, TM65ANZ is a branch of the TM65 standard for Australasian application. It provides additional assumptions that can be made to make the calculation process easier.

WHAT TM65ANZ IS	WHAT TM65ANZ IS NOT
• A method for estimating the embodied carbon of building services equipment	• A detailed and holistic assessment of a product's environmental impacts
• A first step to promoting transparency in the industry	• An environmental product declaration (EPD)
• A reporting methodology	• A peer-reviewed certification
• A set of rules that allows the production of comparable metrics	• An exhaustive assessment of a product's materials
• A simple, replicable methodology	• A detailed life cycle assessment of building services at a system level

CALCULATION PROCESS

The calculation process is broken up into four main sections. Depending on the availability of information on the product, different levels of the TM65ANZ process can be undertaken including a 'basic' and 'mid-level' calculation. For this report a 'mid-level' calculation was done.

STAGES OF CALCULATION

Production Stage	A1	**Material Extraction**
A1—A3	A2	**Transport to Factory**
	A3	**Manufacturing**
Construction/Process Stage	A4	**Transport to Site**
A4—A5	A5	Construction and Installation
	B1	Use
	B2	Maintenance
	B3	**Repair**
Use Stage	B4	Replacement
B1—B7	B5	Refurbishment
	B6	Operational Energy Use
	B7	Operational Water Use
	C1	Deconstruction
	C2	**Transport to Waste Processing**
End-of-Life Stage	C3	**Waste Processing**
C1—C4	C4	**Disposal**

All sections written in green text are included in a mid-level calculation

ASSUMPTIONS

The calculation for 'Transport to Site' was made based on land freight from Christchurch to Auckland.